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READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral; Heart and Cardiac; Liver and Hepatic; Renal and Kidney; Cancer and Carcinoma, Epithelioma, Malignant Disease, New Growth, Sarcoma, etc.; Child and Infant; Bronchocele, Goitre, and Thyroid; Diabetes, Glycosuria and Sugar; Light, Roentgen, Radium, X Rays; Status Lymphaticus and Thymus; Eye, Ophthalmia and Vision; Bicycle and Cycle; Motor and Automobile; Association, Institution, and Society; Paris, France; Berlin, Prussia, Germany; Vienna, Austria, etc. Subjects dealt with under various main headings in the JOURNAL have been set out in alphabetical order under their respective headings—for example, "Correspondence," "Leading Articles," "Reviews," etc. Original Articles are indicated by the letter (O).

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Observations

ON

THE SEVERE ANAEMIAS OF PREGNANCY AND THE POST-PARTUM STATE.

BY

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Those of us whose professional careers coincide with its modern study will remember how important was the part played by these conditions in severe anaemia. Channing (1842), Lebert (1853), and Gusserow (1871) dealt with this aspect of the subject. Many of Biermer's original cases were in pregnant women, and a large proportion of the cases forming the basis of the monographs of Müller (1877) and of Eichhorst (1878) were in this class. After 1885 the literature shows a striking reduction in the references, and Ehrlich and Lazarus, in Nothnagel's *System*, suggested that local influences in the cantons were responsible for the frequency of this association in the cases reported by the Swiss clinicians. So experienced a teacher as Ahlfeld, they state, had never met with a case. Considering how much has been written by British physicians on the various forms the literature on the anaemia of pregnancy and the post-partum state is very scanty—only one of nineteen in the *Index Catalogue* of the Surgeon-General's Library, both series. In Allbutt and Rolleston's *System* French makes only a passing remark on the association. With few exceptions the textbooks in obstetrics have very little to say, and the gloomy prognosis is an echo of the unfortunate experiences of the older writers. Among recent works Edgar's has the best section. That cases are rare in this country is shown by the absence of reference in the writings of so experienced workers as Byrom Bramwell and William Hunter. In the United States Channing's really remarkable study seems to have aroused an interest in the subject, and five American papers are quoted in Vol. I of the *Index Catalogue* before the appearance of Gusserow's in 1871. In Cabot's¹ series of 1,200 cases of progressive pernicious anaemia, in 35 the disease began during pregnancy or shortly after parturition, 18 during the former. This proportion—about one in thirty-five—is probably the average for the United States. Davis,² in reporting a case, gives a very good summary of the older American literature; and Findley,³ who deals with the subject more recently, concludes that "in all well established cases the disease has proved fatal." In the discussion on this paper Richard Norris stated that there had only been one case among three thousand women at the Preston Retreat. Of the first twenty-three cases of "progressive pernicious" anaemia of which I have notes, all but one seen in Montreal, five were *post partum*. I saw two in Philadelphia, and there were a few at my Johns Hopkins clinic, but I have not the figures. The theses of Decroix,⁴ Husson,⁵ and Robert⁶ indicate that the association is not very common in France. The recent German and Swiss literature is given in Naegeli's well known monograph on the blood. Possibly the existing conditions of under-feeding, etc., have led to an increase of cases during pregnancy, and the intense wave of streptococcus infection may have increased the cases of acute septic anaemia *post partum*.

The cases may be divided into four groups:

I. ANAEMIA FROM POST PARTUM HAEMORRHAGE.

(a) The bleeding may be profuse and rapidly fatal. The physician sees fatal haemorrhage in aneurysm, in typhoid

fever, in peptic ulcer, and in ruptured oesophageal varix, none of which conditions present the tragedy of the *post-partum* case. Only once has it been my misfortune to witness this peculiarly pathetic accident. Peace and quiet reign in the lying-in chamber and happiness in the household, for all has gone well, and the young mother is just beginning to realize the joy that "a child is born into the world." The doctor may have left, feeling safe and satisfied. The attention of the nurse is attracted by a sudden restlessness of her patient, whose face shows a beginning pallor, and she finds the dressings soaked with blood. Very soon the symptoms are those of acute anaemia—a rapid, jerky pulse, extreme restlessness, yawning, sweating, sighing respiration, increasing pallor, and with muscular twitchings, convulsions, or a sudden collapse all is over. This was what I saw one afternoon, called hurriedly to the house of a neighbour—a strong, healthy young woman *in articulo mortis*, after a normal delivery, as bloodless as if the carotids had been cut. No wonder that novelists have made such a tragedy the climax of a story. Hitchins, in *The Fruitful Vine*,⁷ makes Dolores die in this way; and it is possible that Walter Savage Landor had in mind this type of death in his beautiful little poem in *Pericles and Aspasia*:

Artemidora! God's invisible,
While thou art lying faint along the couch,
Have tied the sandal to thy veined feet;
And stand beside thee, ready to convey
Thy weary steps where other rivers flow

Fate's shears were over her dark hair unseen
While thus Elpenor spoke.

(b) *The Anaemia Following Repeated Small Haemorrhages.*—This not infrequently follows abortion, more rarely the repeated bleeding after a delivery at term. The following is a good illustrative case:

Mrs. B., aged 45; admitted October 8th, 1918, having had an abortion in the fourth month of her seventh pregnancy, one month previously. She had been losing blood intermittently, not any large amount, but every few days a clot or two would come away. There had been slight irregular fever, and a progressive anaemia. At times there was a slight purulent discharge. She was curetted, and with douches the discharges soon ceased. She looked profoundly anaemic, and with a sallow brown tint of the skin. The blood count was: Red blood corpuscles 2,106,000 per c.mm.; leucocytes 12,300. Ten days later the red blood count was 1,800,000 and the leucocytes 12,000. On the 21st thrombosis of the left femoral vein with swelling of the leg. The blood film showed the red cells irregular in shape and size, many normoblasts, and numerous platelets. In the open air with plenty of good food, iron and arsenic, she improved rapidly, and left the infirmary on December 3rd with a nearly normal blood count.

As in many cases, the anaemia here was due to a combination of repeated small haemorrhages and a mild sepsis. The general appearance was that of an ordinary Addisonian anaemia, for which any casual observer would have mistaken the case. In III and IV of my Montreal series the profound anaemia followed many small haemorrhages after abortion.

II. THE SEVERE ANAEMIA OF PREGNANCY.

The blood of the pregnant woman shows in the early months a diminution of red corpuscles, a low haemoglobin, and a slight leucocytosis (as is well shown in the composite chart in W. L. Thompson's⁸ study from Williams's clinic), to be followed by a rise to or near normal in the ninth month. A slight pallor in the early months is common, and is often associated with the morning vomiting or dyspepsia. That this so-called chloro-anaemia of pregnancy might pass on to a grave and fatal form was recognized by Channing and Lebert, but it was the full report by Gussersow⁹ of five fatal cases that roused the attention of the profession to the seriousness of severe anaemia in pregnancy. The following is a typical case:

On April 13th, 1917, I saw with Dr. Arthur F. Stabb and her husband Mrs. A., the wife of an army surgeon, a primipara of good previous health, though she had had a "tendency to anaemia." The pregnancy, which began in September, 1916, was uneventful until March, when anaemia began and increased rapidly, so that by April 1st she had dyspnoea and swelling of the feet. On April 3rd albumin appeared in the urine in large amounts. On April 10th the blood count was: Red blood corpuscles 864,000 per c.mm.; leucocytes 13,360; haemoglobin 20; colour index 1.12. The lymphocytes were increased 30 per cent., and the normoblasts were 6 per 100 leucocytes. There was the usual extreme irregularity in size and shape of the red cells. Labour began on the 9th, and on the 11th she was delivered of a stillborn child of normal appearance for the seventh month. There was very little haemorrhage, and she stood the strain very well. When seen on the 13th she was well nourished, but with all the objective features of profound anaemia. There were no internal haemorrhages. The case was regarded as a typical example of the so-called toxic or haemolytic anaemia of pregnancy, and, based on an unusually fortunate experience, I ventured to give a favourable prognosis. The recovery was rapid and uninterrupted, as the blood counts show: April 18th, red blood corpuscles 1,036,000; April 26th, 2,368,000; May 3rd, 2,592,000; June 17th, 3,250,000; and December 4th, a practically normal count. The leucocytes rose on April 18th to 45,000 per c.mm., and fell to 3,360 on May 3rd. On April 26th the normoblasts rose to 16 per 100 leucocytes, after which date they disappeared.

III. POST-PARTUM ANAEMIA.

In this, the common form, after a normal delivery without excessive loss of blood, the patient begins to get pale, and within a few weeks the blood count may fall below 2,000,000 per c.mm., and the anaemia may progress and prove fatal in from eight to twelve weeks. How serious this type may be is seen from the high mortality in the series of Channing and of the Zurich clinicians. On the other hand, the experience elsewhere has been more favourable. Dr. Palmer Howard, one of the earliest and most careful students of the subject, insisted that the large percentage of recoveries in the *post-partum* cases, and the absence of recurrence distinguished this form from the true Addisonian anaemia, though clinically the cases appear to be identical. The five *post-partum* cases in my first series all recovered. One was alive more than thirty years after and had passed through two subsequent pregnancies without trouble. The following case gives a good picture of the disease:

Amelia T., aged 35; admitted February 2nd, 1888. In the October previous she had been delivered of her fourth child; no complications. She had begun to nurse the baby, but gradually got pale and weak and had frequent fainting fits and much shortness of breath. On admission the anaemia was so extreme that she could not sit up in bed without feeling faint. The red blood corpuscles were 1,170,000 per c.mm., with extreme irregularity in form and size and many nucleated red cells. The haemoglobin was 15 to 18 per cent. With rest in bed, good food, iron and arsenic, she improved rapidly and left the hospital with a normal blood count.

Not infrequently in severe anaemia there is a continuous fever, which may lead to error in diagnosis, even suggesting typhoid fever, a point to which Cabot refers. The fever may be more irregular, and even associated with chills, which in the following case led to the diagnosis of malaria.

L. T., primipara, aged 24, seen with Dr. Jenkins, October 6th, 1898. Though a difficult labour there were no complications, and for ten days everything was normal. Then she began to get pale and grew rapidly worse, and in the sixth week after confinement, when I saw her, the red blood cell count was 1,200,000 per c.mm., leucocytes 15,000, haemoglobin 15 per cent. Every fourth or fifth day the patient had a chill in which the temperature rose to 103-104°, after which she sweated profusely. There was no discharge, no evidence of sepsis, other than the fever and the chills. The spleen enlarged, and as she lived in a region in which parturition was recognized as one of the factors determining recurrence of malaria this had been

suggested in explanation of the chills. The blood was negative during a chill and after. The red cell count fell to 800,000 per c.mm. and her condition for weeks was critical, but she gradually improved, and four months later she had a nearly normal blood count.

IV. THE ACUTE ANAEMIA OF POST-PARTUM SEPSIS.

In certain types of sepsis there is rapid blood destruction. In acute endocarditis the anaemia with a large spleen may completely mask the clinical picture, as in cases which I reported a few years ago in the *Interstate Medical Journal* (1913). In no condition do we see such rapid haemolysis as in *post-partum* sepsis—a form of anaemia not sufficiently recognized or studied.

In 1882 I saw with Dr. Alloway, on the seventh day after delivery, a young woman in a state of profound anaemia. The blood loss had not been severe, but for some days there had been an unusually foul though slight discharge. The red blood cells were just 1,000,000 per c.mm., the leucocytes 20,000. I never saw the objective features of anaemia more pronounced, and her chief complaint was the painful throbbing of the abdominal aorta, which pulsated with extraordinary violence. She died on the twelfth day. There was "diphtheritic" endometritis, septic thrombi in the pelvic veins; no endocarditis.

Such extremely rapid cases are not common, but Cabot¹⁰ refers to one with identical features, in which the acute sepsis was not suspected. The red blood count was 800,000 per c.mm. "Diphtheritic" endometritis was found at the *post-mortem* examination, without which, as Cabot remarks, the case would have gone into the category of puerperal pernicious anaemia. While every patient with puerperal fever has some grade of anaemia, only in a few does the blood loss dominate the picture. In many of the best textbooks on obstetrics—for example, Edgar (1903)—the condition is not referred to. An excellent account is given by Lea,¹¹ who states that the loss of red cells may be at the rate of from 200,000 to 1,000,000 per c.mm. a week, and that the count may fall to 300,000 per c.mm. Three cases of puerperal sepsis recently in the Radcliffe Infirmary illustrate the condition very well.

Mrs. C., aged 24, admitted under Colonel Collier August 31st, 1918, had a miscarriage late in her second pregnancy. Fragments of retained placenta were removed. She had the typical sallow, pale yellow (not the brown-yellow) tint of skin, and the usual features of moderate anaemia. The red blood cells were 2,700,000 per c.mm., leucocytes 8,630, haemoglobin 46. She improved rapidly, and left the infirmary on September 21st, 1918.

Mrs. M., aged 49, admitted August 8th, 1918, under Colonel Brooks. Since the delivery of her eleventh child, July 16th, she had had severe sepsis with high irregular fever and a progressive anaemia. The blood cultures were negative. The blood count was: Red blood cells 1,580,000 per c.mm., leucocytes 13,400, haemoglobin 16 per cent., colour index 48. Nothing special in the differential count other than a high percentage of lymphocytes. The irregularity in size and shape of the red cells was extreme, and there were many normoblasts. She died on September 8th in a state of profound anaemia.

Mrs. W., aged 31, primipara, admitted under Colonel Collier, November 30th, 1918, having been delivered a week before. No complications. Acute sepsis developed with high fever and a very offensive discharge. When admitted the patient was very anaemic, with a sallow, sub-icteroid tint and all the symptoms of a severe infection. Streptococci were isolated from the blood, and she was given antistreptococcal serum on December 1st and 3rd. The red blood count was 2,250,000 per c.mm., leucocytes 9,600, haemoglobin 40. The differential count showed nothing special: normoblasts were present in moderate numbers. The anaemia progressed rapidly, the fever remained high, and she died on December 7th.

With an increased frequency of streptococcus infections and an unusual virulence of at least some strains in respiratory affections, it would be interesting to learn if puerperal fever has been more prevalent throughout the country. So far as I know, the *post-partum* sepsis cases have not shown a special tendency to haemorrhage, as have so many of the streptococcal infections of the past six months.

REMARKS.

To the nature of the haemolytic agent in the pregnancy and *post-partum* cases there is as yet no clue, any more

* There may have been septic endocarditis in this case, as a few days before death there was a soft diastolic murmur along the left sternal border. The dancing, vibrating pulsation of the peripheral arteries was extreme and the pistol-shot sound unusually loud. In connexion with the production of this in the arteries, about which so much has been written recently, the following note, dictated September 2nd, 1918, is of interest: "A loud systolic bruit is heard over the abdominal aorta without pressure; but neither heart sound. Over the femoral, without the slightest pressure, two sounds are heard, quality and intensity about equal, and almost as loud as the sounds heard over the heart itself. With pressure both increase in intensity, then a loud systolic murmur develops, and on pressure to obliteration, a loud single pistol shot remains."

than we have to the cause of that most baffling of all blood diseases, Addison's anaemia. The progress and the blood picture suggest the haemolytic type, which can be produced experimentally and which is caused by the poisons of the *Bothriocephalus*. In the profoundly changed metabolism of pregnancy and in the intensely katabolic metabolism of the *post-partum* states we assume the production of haemolytic agents—toxins—but, as French remarks, "the use of the word toxin almost commotes ignorance." Though progressive and often pernicious, the anaemia is caused by an agent which differs in one all-important particular from that which causes the anaemia of Addison. When recovery takes place it is permanent, and the woman may escape in subsequent pregnancies. The second patient in my series (whom I knew well) had an attack of extreme gravity, recovered, bore two children subsequently and was alive thirty years after the attack. Recovery from the Addisonian form may last ten, fifteen, or even seventeen (McPhedran) years, but such instances are exceptional, and in the cases of reported permanent recovery there is always the question of mistaken diagnosis.

The blood picture may be of value in estimating the outlook. Signs of active regeneration may be present, as in Mrs. A.'s case, indicated by blood crises and a large proportion of red cells with signs of recent formation, and the basophilic granulation described by Boggs and Morris and by Milne, the auto-haematin (Sappington) and the reticulation described by Robertson and Bock.¹² The number may rise from 1 per cent., the normal, to 20 or 25 per cent. with marked bone marrow stimulation. A high colour index is the rule in the pregnancy and *post-partum* cases. The blood condition is uncertain, however, as well shown in two exceptionally well studied cases in Meyer's clinic, reported by Jungermann,¹³ in which the contrast was striking, the one with low colour index and features of an aplastic anaemia, the other the characteristic Addisonian picture. Both were pregnancy cases, and both had normal deliveries and recovered completely. The absence of platelets is a feature of the common idiopathic anaemia, contrasting, in this respect, with the post-haemorrhagic and septic forms. In the hands of skilful students the criteria offered by the blood examination should, as a rule, be of great value in the prognosis.

My individual experience is exceptional and much more hopeful than indicated in the literature, and particularly in works on obstetrics. The seven cases seen in Montreal and Philadelphia recovered. I have not at hand our large material from the Johns Hopkins Hospital; but I do not remember a fatal pregnancy or *post-partum* case. The later appear to be the more fatal, and the cases reported by Elder and Mathews¹⁴ show that a fatal termination may follow in spite of the most careful treatment.

Acute haemorrhage *post partum* may be rapidly fatal from reduction in blood volume; very large amounts may be lost extending over several days, and yet recovery takes place.

The report of Robertson and Bock, just mentioned, contains much information of value in estimating the blood loss in haemorrhage and the means of treatment. From what is recorded, and from personal experience, I should say the danger of a grave anaemia progressive in character is not great after a fairly profuse haemorrhage. Once the bleeding stops, recovery is progressive and often surprisingly rapid. On the other hand, repeated small losses of blood after abortion or a normal delivery may be followed by an anaemia out of all proportion to the quantity of blood lost. The starting point, indeed, of a few cases of Addison's anaemia appears to be repeated epistaxis or bleeding piles.

The treatment of the cases is that of the severer forms—fresh air, rest, food, iron, and arsenic (in which I still have faith); and if the blood count is very low, 20 per cent. of corpuscles and haemoglobin, transfusion may be employed. The newer technique has many advantages, but the results do not, in Addison's anaemia at any rate, appear to be more favourable than those we had with the old Aveling or Roussel apparatus.

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Observations

ON

INFLUENZA AND ITS COMPLICATIONS.

BY

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The following observations were made during a severe epidemic of influenza amongst patients of the 3rd and 4th Scottish General Hospitals a few weeks ago. The majority of cases were amongst American troops, and most of the patients were ill on arrival at Glasgow by transport. Others were amongst British troops, and there was no essential difference between the two groups of cases except that pneumonia was more frequent amongst the former. At the outset we were struck by the prevalence of mixed infections, as has been found by various observers elsewhere, and we have endeavoured to trace the part played by the various organisms concerned, as regards both the complications which occurred and the manner in which a fatal result took place. The facts recorded refer chiefly to the results of *post-mortem* examinations, and we bring them forward, as it is desirable to have as many records as possible of the features of the epidemic in different localities. To speak generally, we may say that the symptoms were essentially those of severe influenza, with a preponderance of pulmonary affections, which may be roughly classified under the headings of bronchitis attended with marked irritation, bronchopneumonia, and lobar pneumonia. Amongst the pneumonia cases the mortality was very high.

The epidemic was essentially associated with the presence of the *Bacillus influenzae* (Pfeiffer). Owing to lack of sufficient time at our disposal we were unable to undertake so extensive an examination of sputa as we would have wished, but the organism could usually be found without difficulty, and was often present in enormous numbers. In a small proportion of cases it could not be found, but with regard to these latter it must be recognized that, whilst the microscopic picture is often characteristic, the identification of the organism by microscopic means, when it is scanty, is impossible; and, of course, it is in such cases that the isolation by culture is attended by special difficulty. In over a dozen cases where the organism was present in considerable numbers it was cultivated from the sputum without difficulty, and in many instances the number of colonies obtained exceeded those of other organisms. Cultures were obtained also at *post-mortem* examinations from the bronchial mucosa, the pneumonic patches, abscesses, etc.; in fact, from all the lesions with which it was found associated. The characters of the bacilli isolated agreed in all essentials with those described by Pfeiffer and recently by C. J. Martin, and it is accordingly unnecessary to say anything under this heading. Blood cultures were made in fifteen severe cases, but with negative result in all as regards the influenza bacillus. In five of these cases pure cultures of the pneumococcus were obtained, to which further reference is made below.

The medium which we used throughout was a mixture of defibrinated human blood and tryptic agar, in the proportion of about one to eight; and we have not yet made any systematic examination of other media recommended. The agar being melted, and its temperature being brought to 55°C., the blood is added and mixed, and the mixture is poured into small Petri dishes. For inoculation, a drop or two of bouillon or sterile saline solution is placed on the surface of the medium. This is inoculated from the sputum or other material, and then spread over the surface in the usual way with a bent glass rod. Colonies on this medium remain small, but appear to come up in large numbers; they are practically invisible by transmitted light, there being no alteration of the medium around, but are readily distinguished on examination with a lens by obliquely reflected light. On this medium, however, the bacilli undergo involution at an early stage, and we do not regard the medium as an optimum one. For staining the bacilli in sections we found Giemsa's stain most suitable. The ordinary solution is diluted with fifteen parts of water, and the sections are stained overnight. The process of dehydration with alcohol gives the necessary differentiation.

Post-mortem examinations were performed in 26 cases, and in all a pneumonic lesion was present. In 17 the

lesion was bronchopneumonia, in 4 bronchopneumonia with lobar pneumonia, and in 5 lobar pneumonia alone. Of the 5 cases of lobar pneumonia both lungs were affected in 4, an unusually high proportion.

Micro-organisms Present.

In relation to the cause of death, we may mention that in four other cases in which a *post-mortem* examination was not made, the pneumococcus was cultivated from the blood before death. In addition to the ordinary blood cultures in bouillon, growth was obtained also from a drop or two of blood on the surface of agar tubes, and sometimes more than fifty pneumococcus colonies developed in a tube. Apparently the organism was present in unusually large numbers. These septicæmic cases occurred at the early period of the epidemic, before we had permission to perform *post-mortem* examinations on U.S.A. cases, and at this time the proportion of cases of lobar pneumonia was greater than at a later period.

Taking these 30 cases in all, we find that in 13 the cause of death was pneumococcus infection, in 6 streptococcus infection (5 cases of septicaemia and 1 of large empyema), in 4 cases staphylococcus septicaemia, in 1 case meningococcus septicaemia, in 1 case tetragenus septicaemia, and in 1 case septicaemia due to staphylococcus and pneumococcus. Thus, in 4 cases only can death fairly be ascribed to the intensity of the influenza infection.

In addition to the conditions mentioned, various complications produced by organisms other than the *B. influenzae* were of common occurrence—for example, pneumococcal pleurisy, apart from lobar pneumonia (7), pneumococcal meningitis (1), streptococcal pleurisy and empyema (3), ulcerative endocarditis due to *Staphylococcus aureus* (1), streptococcal pericarditis (1), streptococcal peritonitis secondary to empyema (1), and pulmonary abscesses due to various organisms (5). It seems unnecessary to give details with regard to individual cases, as the important points are the cause of death and the secondary complications met with.

Of the 26 cases, bacilli of influenza type were found at the *post-mortem* examination in 22, including all those in which bronchopneumonia was present. In 4 of the 5 cases of pure lobar pneumonia no influenza bacilli could be detected. Cultures were made from 11 cases, and in 10 of these Pfeiffer's organism was isolated without difficulty. Failure in this one case is difficult to explain, as the bacilli present were in fair numbers and had the characteristic features; the picture on microscopical examination of sections also was typical. In the other 11 cases inference as to the presence of the organism was made from microscopical examination alone, but, from our experience, we are confident that in practically all it was really Pfeiffer's bacillus; in many of them its features and its occurrence in characteristic clumps, or within leucocytes, made doubt hardly possible.

Pneumococci undoubtedly played a very important part in the cases observed. Our experience is that they are practically always present within the bronchi, and they are often found along with influenza bacilli in the terminal bronchioles. Croupous pneumonia due to the pneumococcus may be superadded to the bronchopneumonia, or may occur apart from it. Of 5 cases of pure croupous pneumonia we failed to detect influenza bacilli in 4. A purely pneumococcal infection may, however, be regarded in a sense as an integral part of the epidemic. The association of pneumococci with the lesions of influenza will probably be attended by an increase in their virulence; thus there will be a greater tendency for pneumococcus infections to spread from patient to patient. The conditions obtaining on board a transport, for example, are specially favourable to such an occurrence.

Streptococci, though less frequent than pneumococci, were also often met with. We refer below to a particularly virulent form of bronchopneumonia produced by this organism in association with the *B. influenzae*. Staphylococci and Gram-negative diplococci were comparatively frequent, whilst tetrads and various other organisms were not uncommon.

In addition to the case of meningococcus septicaemia mentioned above, there occurred seven other cases of cerebro-spinal fever amongst patients suffering from, or convalescent after influenza, making eight in all. The disease was specially severe, and death occurred in every case. A

special feature was the unusually high proportion of three cases of meningococcus septicaemia without meningitis. The marked virulence of the infection may be explained, in part at least, as due to diminished resistance following on influenza. (In two of these cases *post-mortem* examinations were made, but in neither was any influenzal lesion found, the patients apparently having recovered from the latter disease. The other five cases were removed to a civil isolation hospital and *post-mortem* examinations were not performed by us; these seven cases are accordingly not included in our series.)

The Bronchopneumonic Lesion.

From the point of view of morbid anatomy the outstanding feature is the bronchopneumonic lesion. This is of great importance, as, apart from influenza, it is rarely met with in the adult, and never in epidemic form. Both lungs may be studded throughout with patches of consolidation showing the typical grouping, at first pinkish and ill defined, later paler and more distinct. Haemorrhage and oedema are present to a varying extent, and are sometimes extreme when the patches are still of small size. Larger patches may be formed by confluence, but, even in cases of considerable standing, the discrete character may be well maintained, while not infrequently the patches are comparatively firm to the touch, owing to the presence of secondary interstitial change, as will be described. Acute vesicular emphysema is usually a prominent feature, and even interstitial emphysema may be met with. The mucous membrane of the bronchi is swollen and shows intense congestion and haemorrhage, the colour being frequently of a deep dull red. The larger tubes contain a varying amount of secretion, often blood-stained, and purulent plugs can usually be expressed from the terminal bronchioles. The microscopical picture corresponds, and has a general similarity to that met with in the bronchopneumonia of children. The bronchioles and alveolar passages are tightly plugged, chiefly with leucocytes along with a varying amount of desquamated epithelium, though the latter is sometimes little in evidence. In the acute stage the epithelium may be entirely lost, and a condition of actual erosion of the bronchioles may be present; but in the cases of less intense nature there may be hyperplasia of the epithelium, which may form a thick layer in which mitotic figures are to be found. The consolidated air vesicles are filled chiefly with polymorphs, but fibrin may be present in varying degree; and a common feature is the presence, immediately around the wall of the bronchus, of a ring of air vesicles containing fibrinous plugs. This fibrin is usually dense, and very few leucocytes are present with it. It appears to be practically free from organisms, and apparently represents an exudation in an outward direction from the blood vessels of the inflamed bronchial walls. The importance of this is that such fibrin is difficult of absorption, and in the later stages active organization of it has been found. Thus there results a chronic interstitial pneumonia with complete obliteration of the vesicles involved; in one or two instances this was of extensive nature. Both from clinical facts and from what we have found at *post-mortem* examinations, it is evident that influenzal bronchopneumonia is often difficult of resolution. The patient may suffer from marked cyanosis and dyspnoea for a considerable time, whilst influenza bacilli may be present in the purulent sputum in enormous numbers. Such patients often make an apparently complete recovery, but it is likely that a certain amount of interstitial pneumonia is a common sequela.

In cases fatal at a later stage, some of the larger areas of consolidation are usually pale in colour and firm in consistency, or may show commencing softening; in fact, all stages to typical abscess formation may be met with. This lesion occurred in five of the cases, and in others small abscesses were found on microscopical examination. In one case a superficial group of abscesses had ruptured into the pleural cavity, giving rise to empyema, in which both influenza bacilli and streptococci were present.

In some cases of influenzal bronchopneumonia there is no pleurisy, though the pleural surface appears dull; and on microscopical examination we have found a hyaline swelling of the subendothelial connective tissue, without evidence of the presence of fibrin. A varying degree of fibrinous exudate, however, has been found present in

many cases, and where it was marked we have always found pneumococci, occasionally associated with streptococci. The latter organism, however, tends to produce exudation with more fluid, and all stages up to typical empyema may be met with. In our series of *post-mortem* examinations there were only 2 cases of empyema, but we have also examined the pus from 10 other influenza cases during life, making 12 cases in all. In 2 of these influenza bacilli and streptococci were present, in the other 10 streptococci were present alone. These were the only two instances in which we found infection of the pleural fluid with the bacillus of influenza. There is no doubt that empyema is a comparatively common complication, occurring usually somewhat late, and the possibility of its occurrence should always be kept in view.

Bacteriology.

Looking at the matter from the bacteriological side, we may say that there occurs a descending infection of the respiratory passages with Pfeiffer's bacillus and other organisms, of which pneumococci and streptococci are by far the commonest and most important. An infection of the terminal bronchioles and alveolar passages may follow, giving rise to bronchopneumonia; and when this happens the influenza bacillus appears to us to be the most important causal agent. In sections it can often be found in large numbers amongst the leucocytes in the lumen of the bronchioles, and a large proportion of the bacilli are usually contained within leucocytes. Our results in these respects agree generally with those of Pfeiffer, obtained in the last great epidemic. In some cases the organism appears to be present almost alone, especially in cases which run a less acute course. On the other hand, we have had examples of very acute bronchopneumonia where streptococci were associated in large numbers with Pfeiffer's organism. In these the patches of consolidation were of smaller size and less defined, as described above, and were associated with intense haemorrhage and oedema. There appears also to be a greater amount of loose fibrinous exudate in the adjacent air vesicles than is present in the uncomplicated cases. Actual necrosis of patches of lung tissue was met with in several instances. In one case where there was little consolidation, and where the lesion appeared of trifling nature, microscopical examination revealed the intensity of the infection, streptococci being present in enormous numbers; and there was general lysis of the red cells. In other cases, pneumococci, Gram-negative diplococci, staphylococci, and various bacilli may be present in association with the influenza bacilli. When pneumococci are abundant there tends to be, again, exudation of looser fibrin. At any stage there may be a diffuse infection of the lung with this organism, a croupous pneumonia resulting. We have noted above the frequent occurrence of fibrinous pleurisy due to the pneumococcus, without pneumonia; and this is another illustration of the readiness with which the organism invades the lung tissue in influenza. Septicaemia due to the pneumococcus was found in several cases, and in one case there was a pneumococcal meningitis. In the abscesses we found influenza bacilli along with various other organisms—pneumococci, streptococci, staphylococci, tetrads, etc. At this stage also septicaemia may occur and be the cause of death.

General Considerations.

No one doubts that epidemic influenza is due to a specific organism, yet in hardly any other disease do we meet with such a variety of lesions and complications, produced by various organisms of common occurrence apart from influenza. Apparently the explanation is that the specific organism leads to a diminished resistance of the bronchial mucosa, and thus bacterial growth extends to the finest tubules, and bronchopneumonia frequently follows. The organisms most frequently associated with the *B. influenzae* in the bronchial tubes are pneumococci and streptococci, though staphylococci, tetrads, Gram-negative diplococci, and various bacilli are often present. These organisms play an all-important part in the production of the various lesions—pleurisy, empyema, pericarditis, endocarditis, meningitis, pulmonary abscesses, etc. Another feature, evidently related to diminished resistance, is the frequent occurrence of septicaemia, and this may happen at a comparatively late, as well as at an early stage. Lobar pneumonia also may be met with; it may occur before broncho-

pneumonia has been established, or, on the other hand, may be superimposed on it. In our series, though not large, there was an unusually high proportion of cases of double pneumonia; in several of these the influenza bacillus could not be detected.

The question comes to be whether the *B. influenzae* (Pfeiffer) is the essential cause of the disease, or whether it is merely associated with an undiscovered virus, possibly ultra-microscopic, as some have supposed. Microscopic examination of sections shows that the influenza bacillus is specially related to the bronchopneumonia, a special feature of influenza; it is often the predominant organism, and may abound not only in the bronchioles but in the air vesicles beyond. In other words, a lesion common in influenza, and rare apart from it, is associated with the appearance of this delicate organism in large numbers; and, as this lesion represents the farthest extension of bacterial growth in a downward direction, it seems not unlikely that the *B. influenzae* is the agent which so markedly lowers the general resistance of the bronchial passages. Thus it may be the real cause of the disease. On the other hand, there is the possibility that the presence of an ultra-microscopic organism underlies all the phenomena; and the results of further investigation on this point must be awaited. But in any case it appears to us that Pfeiffer's bacillus plays a very important part in the production of the characteristic lesions.

THE AFTER-RESULTS OF GASTRIC OPERATIONS.*

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OPERATIONS are performed upon the stomach for various conditions. My own series of 175 operations include ulcers and perforations of the stomach and duodenum, carcinoma of the stomach or oesophagus, hour-glass contraction of the stomach, obstruction of the pylorus due to cicatrices of former ulcers and the pressure of a congenital cyst, haemorrhage, intussusception, and leather-bottle stomach.

There were twenty-one cases of perforation of the stomach or duodenum. Ten of these cases were saved from death, and only in one instance was there a recurrence. In all the eleven who died perforation had existed for more than twenty-four hours when I first saw them, and most of them were well under the influence of morphine. One case in which perforation had existed for forty-eight hours lived for five days, and would probably have recovered save for an attack of pneumonia. In one case which had been perforated for four hours I removed fifty gall stones from the gall bladder at the same operation. The patient made an uneventful recovery, and she has not suffered since. I do not favour these double operations. The performance of a gastro-enterostomy, which has been advocated in such cases, adds considerably to the risk. In my experience it is not advisable; if it were, I should prefer to perform it at a later period.

The prime factors in saving life are to operate upon these cases at the earliest possible moment, and to avoid the administration of morphine. Even if a journey has to be undertaken it would be safer to administer an anaesthetic than to give a dose of morphine, which may make the difference between success and failure.

The gastro-enterostomy operations number 116. Some were performed with the object of giving temporary relief in cases of malignant disease, but the majority were for the purpose of establishing a new route for the exit of food into the jejunum, because the pylorus was partially occluded. In two cases the operation was performed for the relief of symptoms due to hourglass constriction of the stomach. In another case I excised the hourglass constriction. The results in all three cases were equally satisfactory. Hence gastro-enterostomy would appear to be preferable, since it is a far less serious operation than excision.

The immediate mortality in my series of cases is 2 per cent. It is sufficiently small to be almost a negligible factor in deciding upon operation. The suffering due to

* A paper read before the Kidderminster Medical Society.

the operation is not severe, and is usually confined to the following forty-eight hours. The wound generally heals by first intention, and solid food is taken within a week. The failures—that is, patients who have derived no benefit—are not more than 5 per cent. It is possible that these might have been in a worse condition without operation. It is impossible to say why they failed to benefit. It has been suggested that it is due to the closure of the artificial opening, and some surgeons deem it advisable to divide the pylorus and sew up the orifice in order to prevent this. I have never known the artificial opening to close up, although I have seen several *post-mortem* examinations upon patients who had undergone operation and died at varying periods afterwards from other causes.

In some cases complications may occur at a later period. I have experienced three of these:

CASE I.

A man upon whom I performed a posterior gastro-jejunostomy for pyloric obstruction in December, 1914. There were two cicatrices, one over the pylorus and one two inches on the stomach side of it. The patient made an uninterrupted recovery, and remained well until June 21st, 1916, when he was seized with sudden abdominal pain at 8 p.m. I saw him on his admission to hospital the following day at 11 a.m. There were signs of perforation. I opened his abdomen at 11.30 a.m. The peritoneal cavity was flooded with stomach contents. There was a perforation on the left side of the junction between the stomach and jejunum. This was closed and sewn over with Lembert sutures. The abdomen was sponged out and drained. The patient bore the operation well, and made an uninterrupted recovery.

He was again admitted on June 24th, 1917, at 7 p.m., after having been seized with sudden pain at 12.45 p.m., and again he presented signs of perforation. I opened his abdomen at 8 p.m. The peritoneum was flooded with stomach contents, and there was a perforation on the right side of the junction between the stomach and jejunum. This was closed and sewn over with Lembert sutures, and the abdomen was sponged out and drained. The patient made an uneventful recovery, and has remained well up to date.

Out of twenty-one cases of operation for perforation this is the only one which has been performed twice.

CASE II.

A female upon whom I performed posterior gastro-enterostomy for pyloric obstruction in July, 1914. Three years later, November 9th, 1917, she was admitted to hospital with acute abdominal trouble. The cause of the condition was uncertain. On opening the abdomen it was found that there was an intussusception of 25 in. of the jejunum into the stomach through the gastro-enterostomy opening. This was reduced, and the patient made an uneventful recovery.

Although the recurrence of an intussusception of the intestine is rare it has occurred in my practice after an interval of several months. I was naturally anxious about this case, but, so far, the patient has remained well.

CASE III.

A male, aged 37. He was admitted to hospital on December 6th, 1915, at 5 p.m., with a history of sudden abdominal pain, which began at 1 p.m. He stated that he had been operated upon four years previously at another hospital, and described it as "a short-circuit operation." There was a cicatrix in his epigastrium region. He had signs of general peritonitis. I opened his abdomen and found the peritoneal cavity flooded with intestinal contents. The junction of a former gastro-enterostomy was found to be adherent to the transverse colon. There was a perforation on the splenic side of this junction, which admitted my finger into a cavity communicating with the stomach, with both ends of the jejunum and with both ends of the transverse colon.

Each of these complications is rare, if not unique. They are no argument against the value of the operation, and they are mentioned only as examples of possible sequelae.

Nature has provided us with a case which demonstrates her approval of this method of treatment. It occurred in the person of a member of our own profession, who had symptoms of pyloric obstruction which subsided after years of suffering. When he died a *post-mortem* examination revealed the fact that nature had performed a posterior gastro-enterostomy for him, and had thereby relieved him of his sufferings.

It is often difficult to decide whether a more drastic operation should be undertaken. Pylorotomy is theoretically more rational, but its greater severity and the larger mortality caused by it render its performance inadvisable when equally satisfactory results can be obtained from gastro-enterostomy. Pylorotomy is not always

successful. In one case in which I performed this operation the patient returned in twelve months with a recurrence of her symptoms. I reopened the abdomen to find the pylorus had contracted again—it was not a malignant growth—and I then performed gastro-jejunostomy. This was ten years ago, and the patient has remained well since.

When the case is one of carcinoma there can be no doubt that removal is desirable, provided that the patient is in a condition to bear it. To perform a short-circuiting operation in such a case is unsatisfactory. It may give some relief to the symptoms, it may prolong life, but it leaves the disease, which will inevitably destroy the patient. It is true that the mortality in such cases is high, but with a prospect of complete cure it is a question whether the risk should not be taken. It is for the individual patient to decide. Provided that the conditions are fairly stated, there should be no hesitation in undertaking such operations.

I have operated upon twelve such cases. As an example of success I may mention the case of a woman upon whom I operated on May 17th, 1903, fifteen years ago, for carcinoma of the pylorus, which was later verified by pathological examination. I performed partial gastrectomy, removing about one-third of the patient's stomach. She recovered without any complication and has remained well. I saw her a week ago. I do not know of any other case where life has been so prolonged, but I feel confident that there will be many in the future. At the period when I operated upon this patient there were but few such operations performed.

On April 16th, 1912, I removed more than a third of a man's stomach, together with a portion of his pancreas, which was invaded by the malignant growth. This was verified by a pathologist as a carcinoma. The patient made a good recovery, and remained well for four years, until July, 1916, when he met with an accident to one of his arms, which was followed by tetanus and death. The *post-mortem* examination proved that there had been no recurrence of the malignant growth. In another case I removed about a third of a man's stomach on February 5th, 1907. The patient recovered in spite of an attack of pneumonia, remained in good health, was able to enjoy ordinary diet, and to do his work as a gardener. He remained well until December 12th, 1910, when he developed a carcinoma in his rectum, and died December 16th, 1910.

These three cases may be regarded as cured. If I had performed gastro-enterostomy on any of them the patients would probably have died within a year or two.

Unfortunately, it is not always possible to be certain whether or not a growth is cancerous. As an instance I may cite the case of a woman upon whom I operated on May 7th, 1903—fifteen years ago. She had a mass of growth in her pylorus, which was adherent to the liver and pancreas. I regarded it as malignant and irremovable and performed a gastro-enterostomy. She was well ten years later, and is, I believe, still well. It is more than probable that her condition was not cancerous.

There is a woman in Ward 2 upon whom I operated ten days ago. Her abdomen was opened in London last May. I have a letter from the hospital stating that "her stomach was so largely invaded by malignant growth that a gastro-enterostomy could not be done." I removed about two-thirds of the stomach. She bore the operation well; vomiting has ceased, and she is able to take solid food. The specimen was sent to Professor Leith, who reports that he is unable to find any evidence of malignancy; he regards it as a case of chronic inflammatory ulceration.

It has been stated that cancer in the abdomen often clears up after a laparotomy. I have no evidence of this. The cure in these cases is due, I think, to an error in the diagnosis. There are the rare cases such as the following:

CASE IV.

Leather-bottle stomach, an instance of which I reported in the *Lancet*, February 3rd, 1907. This is probably the smallest stomach in existence. The patient was fed through an opening into the pyloric end of her stomach. She died of uraemic coma five weeks later.

CASE V.

Bleeding from numerous tiny points in the mucous membrane. It was described by Dieulafoy as "exulceratio simplex." I reported a case in the *Lancet*, April 26th, 1902, and at a later date one was reported by Sir Dyce Duckworth and the late Sir

H. T. Buitin. I performed the operation on March 3rd, 1902. The patient made a good recovery, was afterwards married and has had four children. I saw her yesterday when she was in good health and had not suffered from any recurrence of hæmatemesis.

CASE VI.

A boy of 15 years with a cyst between the mucous and muscular layers of the pyloric end of the stomach. I performed pylorotomy on July 17th, 1906, and reported the case in the *Lancet*, August 18th, 1906.

Perhaps the most disappointing cases are the gastrostomies for the relief of stricture of the oesophagus, which is usually due to malignant disease. These cases are left until the last moment. The patients have experienced much suffering, and as a result of insufficient food have lost a large amount of flesh and vitality. When I have been able to operate upon them early I have succeeded in relieving their distress and prolonging their lives for as much as six months. I cannot claim to have obtained for them a longer respite. The modified Witzel's operation which I perform does not allow any regurgitation of food.

Contrast this experience with the medical treatment of these cases. Those who suffer from pyloric obstruction remain invalids. They continue to exist upon patent foods, they swallow large quantities of medicine, and they use up many hours of their doctor's time in a vain endeavour to obtain relief. Some of them indulge in stomach lavage. They lose weight, amounting in some cases I have seen to five or six stone, more than half their normal weight, and they ultimately succumb, after suffering untold misery. They are found in every consulting room, they go from doctor to doctor, disappointment drives them to quack medicines, and ultimately, often when it is too late, they drift into the hands of the surgeon.

I do not suggest that all these cases should be operated upon without medical treatment, but I do claim that my results justify you in urging these people to consult a surgeon when you find that medical treatment fails, and I would emphasize the necessity of following this course before the condition is so far advanced as to render surgical intervention unduly dangerous, if not hopeless.

A CASE OF VALVULAR DISEASE OF THE HEART, SHOWING UNUSUAL POWERS OF PHYSICAL ENDURANCE.

BY

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EVERY medical officer has come across soldiers who, in spite of evident organic disease of the valves of the heart, have been able to carry on at the front, and have only finally been invalided for some other condition; but the following case is an example of such unusual physical power that it seems worthy of being put on record:

Lieut. A. B., aged 25, infantry officer, was invalided to England on account of slight "gassing," and two months later was seen at a convalescent hospital, still complaining of depression, especially in the mornings, of weakness, and of shortness of breath on climbing hills.

History.

He stated that he had never been ill except when, at the age of 13, he suffered from an attack of rheumatic fever, and his mother had made him "go carefully for twelve months afterwards." He had been an athlete all his life, and won many prizes in this capacity at school. At his university he was captain of both cricket and football teams. During the last four years he had developed specially the 100 yards race. He had been in the army for about three years, and had never been sick or laid up, except as follows later.

Last October, while in France, he won the 100 yards championship of his division, and also the broad jump, doing the former in ten seconds, and attaining 22 ft. 6 in. in the latter. He was presented by the G.O.C. with a gold medal as the champion athlete of the whole corps. During last winter he was captain of his battalion football team, and played in every game during the season.

In November last he was blinded for two hours by the near explosion of a shell, and since then his right eye has not been as good as formerly, but he carried on all military duties and continued, as already stated, to lead his football team until the spring, when he was slightly gassed. He was then invalided to England, though unwilling to leave France.

Condition on Examination.

The patient was fairly fit in appearance, but stated that he was often depressed in the morning. If he exerted himself much he suffered from palpitation and shortness of breath. All these symptoms only dated from the gassing. The pulse was moderate in rate and quite regular, but of water-hammer type; no distinct capillary pulse could be made out. The liver was not enlarged, and there was no oedema. On percussion of the heart the right border was found to be one inch beyond the edge of the sternum. The apex beat was felt heaving powerfully in the sixth intercostal space in the nipple line. On auscultation a loud double aortic murmur was heard and also a very evident double mitral one.

The condition was evidently one of aortic incompetence, and possibly stenosis (although the systolic murmur here might have been due to dilatation of the root of the aorta), and of mitral leakage and probable stenosis, although the presystolic murmur might have been of the Flint type. The heart was certainly considerably hypertrophied.

Dr. Lewis, in his paper in the *BRITISH MEDICAL JOURNAL* of December 14th, p. 647, on Medical Reports on Soldiers discharged from the Army for the conditions known as "D.A.H." and "V.D.H.," says that "In some patients with aortic disease exercise tolerance is perfect. Many soldiers have fought in the front line with this lesion and without mishap." He continues: "But these are cases in which the lesion, as judged by the state of the pulse, is slight and in which there is no material enlargement or other complicating factor."

Every one has seen cases of aortic regurgitation of this "slight type," who have stood military service for long, and I have notes of a number who have endured even unusual strain without a breakdown, but the above case is out of this class. The patient would undoubtedly come under Dr. Lewis's class of "developed aortic disease"; yet he not only stood the stress of active service in the front line for years and was at last only invalided on account of gassing, but actually outvalued all his fellows as an athlete. His reserve heart power must have been greater than that of most men having sound hearts.

The case emphasizes the correctness of the view that has so often been urged in recent years by Sir James Mackenzie and others, that everything depends upon the state of the heart muscle. This patient had evidently an exceptionally strong and sound myocardium.

The reason why most cases of chronic V.D.H. break down is not so much on account of the presence of the valvular lesion as because the infection which caused the damage of the valve at the same time invaded the heart muscle more or less. In the case here recorded the rheumatic invasion at the age of 13 must have been unusually limited to the endocardium.

Nevertheless, valvular lesions, whether causing stenosis or incompetence, are not only always *loci minoris resistentiæ* against further infection, but must also, by their disturbing influence upon the smooth onflow of the blood, throw extra work on the heart muscle, and I for one do not go so far as some in the modern tendency to ignore such lesions. It is not my intention here, however, to go further into this debatable ground, but rather merely to put on record what appears to be a case of very exceptional endurance of a hampered heart.

NASAL DIPHTHERIA AND THE EPIDEMIC OF INFLUENZA.

BY

E. MARTEN PAYNE, M.B. ABERD.,

BLACKBURN.

It seems to have escaped the notice of those who have published notes on the prevailing epidemic of influenza that a large number of patients supposed to be suffering from that disease are in reality suffering from nasal diphtheria.

Feeling convinced that the heavy mortality during the epidemic could not be due to influenza pure and simple, I began to examine certain cases for nasal diphtheria, and found that many cases from which I took nasal swabs gave positive results. In many a provisional diagnosis of influenza had been made, and they were apparently convalescent when the swabs were taken. Others, at the onset, showed signs which indicated the trouble, and in others again the swabs were taken almost at random

from patients who walked into my surgery complaining of "influenza" and not apparently very ill. All the swabs were examined for me at one of two recognized pathological laboratories.

The following are short notes on a few selected cases:

Case 1.—A child about two years old was brought by its mother. It was pale, listless, and evidently seriously ill. No physical signs could be found in the chest or throat. A swab taken from the nose was found to be positive for diphtheria.

Case 2.—A Royal Marine who came to my surgery said he was suffering from "flu." I took a swab from his nose and told him to come to me again the next day. He did not return, but the swab was found to be positive. A few days later I received an urgent letter from his C.O. saying that the man had returned to duty and had related what had happened, and I gave particulars as requested, but so far nothing more has been communicated to me on the subject.

Case 3.—A soldier on leave, seen in bed, complained of headache and nose bleeding. There was considerable pyrexia. The throat was red, but there were no physical signs in the chest. A swab was taken from the nose. After a day or two dullness and fine crepitations were found at the left base, and a positive report was returned by the pathologist with regard to the swab. The sputum was rusty and was found to contain Klebs-Loeffler bacilli.

Case 4.—A soldier complained of pain in back and legs and cough. There was a mitral systolic murmur and the heart was somewhat dilated. He had an up and down temperature (maximum about 102°) for a few days. A swab taken from the nose was found to contain diphtheria bacilli.

Case 5.—A soldier, who had been gassed, complained of sore eyes and throat; the tongue was furred and the breath foul. He was pale and very ill. He had an up and down temperature (maximum about 103°), and in a few days began to develop phlebitis in the left leg. A swab taken from the nose was found to contain Klebs-Loeffler bacilli.

Case 6.—A soldier, who had been gassed and was suffering from ophthalmia, had pyrexia reaching 104°. A swab was taken from the nose and diphtheria bacilli found.

Case 7.—A soldier, complaining of influenza, had a mitral systolic murmur. There were a few râles in the lungs, and he expectorated rusty sputum. There was moderate pyrexia which subsided after a few days. A swab was taken from the nose and diphtheria bacilli found.

Case 8.—A man, whose illness had been diagnosed influenza, complained of sore throat. A swab taken was found to contain *B. diphtheriae*.

These are only a few typical cases out of a large number of similar ones which have come under my notice, and I am persuaded that a large number of the deaths recorded as being due to influenza during the present epidemic were due to diphtheria.

Some show a tendency to make light of nasal diphtheria, but there can be no doubt that it is a condition which is fraught with grave danger not only to the patient, but also to others with whom he may come into contact, and it is all the more dangerous because, as I gather, there are comparatively few practitioners who look for it.

Some years ago there was in this town an epidemic of mumps. In all cases that came under my notice I took swabs, and in many proved that the real cause of the swelling of the glands was diphtheria. I was called to see a boy who had died suddenly. No doctor had seen him, but his mother had been treating him after her fashion for mumps. A swab taken from the nose after death gave a positive result for diphtheria. About the same time I was called to see a baby who had died suddenly. The history was not very definite. The child had been ailing a few days, but its condition had not given much anxiety and no doctor had been sent for previous to its death. A swab taken from the nose was found to contain diphtheria.

At a discussion on influenza at a meeting of the Royal Society of Medicine on November 13th, reported in the *BRITISH MEDICAL JOURNAL* of November 30th, p. 603, Dr. B. H. Spilsbury said that

He regarded the condition as a primary infection of the air passages by Pfeiffer's bacillus, the failure to find this organism in 40 per cent. of his *post-mortem* cases being due either to the search not being sufficiently thorough or to the organism having disappeared before death.

It would be interesting to know whether in those *post-mortem* examinations Dr. Spilsbury examined the nasal fossae, and, if so, whether he examined them for the presence of the *Bacillus diphtheriae*.

SPONTANEOUS PNEUMOTHORAX IN THE COURSE OF INFLUENZAL PNEUMONIA.

BY

F. PARKES WEBER, M.A., M.D., F.R.C.P.

THE occurrence of pneumothorax in connexion with an attack of pneumonia or bronchopneumonia is so rare that the following case is worthy of record:

F. M. K., aged 38, a strongly built man, a mechanic and a good wrestler, was admitted to hospital on October 31st, 1918, with a temperature of 103.6° F., pulse 96, and respiration 28. He had apparently been laid up with influenza since October 26th. Two grains of quinine were ordered three times a day, and a mixture containing some sodium salicylate was given also. On the morning of November 2nd slight crepitation was heard over the lower parts of both lungs behind. The temperature was 103° F., pulse 100, respiration 24. The urine contained a trace of albumin and some hyaline and cellular tube casts. On November 3rd there was marked dullness on percussion over the back of the lower lobe of the left lung, and on November 5th there was much crepitation over the same area. From the time of admission to November 5th the temperature varied between 101° and 105° F., pulse 92 to 120, respiration 24 to 36.

On the early morning of November 6th the temperature was only 98.4° F., but the pulse was 128, and the respiration was 48. At 11 a.m., when I examined him, he was sitting up in bed, extremely dyspnoeic, cyanosed, and anxious. The cardiac apex beat was extremely displaced to the left; the right side of the thorax was resonant, but moving much less than the left side. On auscultation of the right side the breath sounds, heard rather faintly, were of somewhat amphoric character. Evidently there was pneumothorax on the right side (previously the better side of the two), though the bell sound was absent. On introducing a cannula into the right pleura, air bubbled out from the end of the attached tube (under water); more air was removed by aspiration. Normal breath sounds were then heard over the right side of the front of the chest, the heart was less displaced, and the extreme dyspnoea was partially relieved. In the afternoon the temperature was 103° F., pulse 120, respiration 40. On the morning of November 7th there was evidently relatively little air remaining in the right pleura, but decided dullness in the right infrascapular region indicated the presence of fluid pleural effusion. The cardiac apex beat was still moderately displaced to the left. The temperature was 102.4° F., pulse 134, respiration 40. There was a tendency to delirium. In the afternoon the temperature was 102° F., pulse 130, respiration 42. The patient died at about 6 o'clock on the following morning (November 8th).

The necropsy showed fibrinous deposit with a moderate quantity of sero-purulent fluid in both pleurae. The greater part (lower portion) of the left lung was solid (red hepatization) from pneumonia; there were likewise in that lung a few small scattered abscesses. There was no consolidation in the right lung, but in the lower part of the upper lobe were several small abscesses, some of which were subpleural—that is to say, situated quite superficially beneath the visceral pleura. I did not see the actual opening, but doubtless it was the bursting of one of the superficial (subpleural) abscesses which gave rise to the pneumothorax. There was no free air in either pleura, and the heart was not obviously displaced. The heart was slightly hypertrophied (weighing 13 oz.), doubtless as a result of the patient's previous athletic habits.

A case of pneumothorax occurring in connexion with an attack of pneumonia was recorded by Ménétrier and Pascano in 1915,¹ but in that case (a man aged 54) according to the findings at the *post-mortem* examination, the pneumothorax was probably due to the bursting of a superficial emphysema bulla during an attack of lobar pneumonia. Another case, in a bricklayer aged 40 years, was recorded by C. B. M. Aldridge in 1915.² The patient recovered. Recovery also took place in the case of a man, aged 35 years, described by R. G. Hann.³ Hann adds summaries of several cases previously recorded, and quotes Black's collection of 918 cases of pneumothorax, in which not a single one is ascribed to pneumonia. Out of 7,868 cases of pneumonia, collected for statistical purposes by the Royal Society of Medicine, pneumothorax was a complication in three cases only, two of them proving fatal.⁴

At a meeting of the Philadelphia Pediatric Society on January 12th, 1909,⁵ C. H. Weber and C. Y. White reported the case of a child, aged 3½ years, suffering from pneumonia, in whom pneumothorax occurred on the eighth day of the disease without any paroxysm of coughing or other unusual effort. The necropsy showed a perforation near the lower border of the upper lobe of the left lung. The neighbouring pulmonary tissue was consolidated by pneumonic infiltration.

A case of pneumothorax complicating bronchopneumonia in a boy, aged 2 years, was described by Dr. Alice Sanderson in 1911.⁶ She refers to twelve published cases of pneumothorax in children under 16 years, but none of these seemed to be due to pneumonia or bronchopneumonia. O. Meyer, in 1916,⁷ reported two cases (one of them fatal) of pneumothorax in children resulting from influenzal lung affections. Sidney Matthews⁸ (1918) reports the case of a girl, aged 7 years, who recovered from pneumothorax of the left side following an attack of bronchopneumonia after whooping-cough and measles.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SURGICAL EMPHYSEMA IN A FATAL CASE OF INFLUENZA.

DR. GARRETT'S case in the *BRITISH MEDICAL JOURNAL* of December 21st, 1918, p. 686, suggests the publication of these notes.

A strong, healthy girl aged 19, who in August last was able to swim two miles in the sea, was taken ill with influenza on November 19th. Two of her sisters were taken ill at the same time and developed pneumonia.

On November 21st the patient had well marked bronchitis and bronchial asthma, and on November 22nd pneumonia. During the night of November 23rd she suddenly became very collapsed, and from this time until she died it was scarcely ever possible to count her pulse. Cyanosis and pallor were very marked.

There was very great dyspnoea, aggravated by the slightest exertion, so that it was not possible to turn her over to examine the back.

On November 25th surgical emphysema of the face, neck, and upper part of the chest was discovered, and there was resonance over the mediastinum. The emphysema gradually diminished. She was kept alive by brandy, oxygen, and injections of pituitrin and digitalin until December 2nd, when she died. There was no *post-mortem* examination.

The surgical emphysema appears to have been due to a leakage of air from the lower part of the trachea or a main bronchus in the mediastinum. I think it occurred on the night of November 23rd, and caused the sudden collapse which then took place.

Bedford.

W. GIFFORD NASH, F.R.C.S.

A CASE OF INVERSION OF THE UTERUS.

I RECENTLY received an urgent notification from a midwife to visit a case. The midwife informed me that the labour had been slow but otherwise normal until, less than five minutes before my arrival, there was a severe pain followed by rapid delivery of placenta and collapse of the patient. The midwife having received the placenta and uterus in a flamed container, maintained her position, and ordered a relative to get stimulants, to apply hot bottles, and to raise a minimum of dust.

Shock was profound; the radial pulse was not palpable, respiration was shallow and apparent in epigastrium only, the conjunctival reflex was absent. A diagnosis was made by inspection alone. Provided with india-rubber gloves but no means of rapidly sterilizing them, a three-second scrub up in lysol solution was substituted. The placenta was completely separated, the membranes covering the everted surface of the uterus non-adherent, and there was no bleeding. Reduction proved easy, and was followed by a strikingly rapid recovery from the shock.

According to Atthill (Tweedie and Wrench), "In order for inversion of uterus to occur, it must be in a partially atonic condition and the placenta situated on the fundus." In this case the woman was 19 years of age, of poor physique, and had given birth to her elder child in her sixteenth year. I feel justified in assuming that a partially

atonic condition did occur in this case. The placental site was at the fundus and somewhat anterior.

The midwife protests that she felt the fundus immediately after delivery, then turned her attention to the child, and did not again interfere with the mother until, warned by the sudden severe pain, she seized her flamed container, and was just in time to place it in position to receive the placenta, etc. This statement may be taken to exclude any possibility of pulling on cord or pressure on fundus.

The salient features in treatment to be learnt from this case were (1) immediate reduction of uterus; (2) the masterly inactivity of the nurse, which minimized the risk of sepsis; (3) the necessity of a general practitioner providing himself with some "always ready" sterilized package to contain gauze and gloves. The woman did not become septic, and made an uninterrupted recovery.

Platt Bridge, Wigan.

J. A. WATSON, L.R.C.P.

Reports of Societies.

WAR SURGERY OF THE LUNG.

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, with Sir JOHN W. MOORE in the chair, Colonel WILLIAM TAYLOR briefly reviewed the surgery of the lung as carried out at the front. He showed that the change was simply that of harmonizing or adapting the principles of surgery, as they are now applied to other wounds, to those of the lung or chest. It was estimated that the mortality due to chest wounds at the regimental aid posts varied from 25 to 30 per cent.; at the casualty clearing stations it averaged about 18 to 20 per cent., while at the base hospitals it was about 10 to 12 per cent. The average general mortality of chest wounds was about 18 to 20 per cent. This high mortality was due to the fact that shell wounds preponderated over bullet wounds to the extent of 3 to 1. The mortality of shell wounds as compared with bullet wounds was as 14 to 1; it was the risk of sepsis in connexion with shell wounds that rendered them so dangerous. The mortality was highest during the first forty-eight hours. Open wounds of the chest were grave as compared with closed wounds; they were at least twice as dangerous. Lung wounds, like other wounds, were contaminated by the mere entrance of the foreign body, whether retained or not. Like any other wound, there was an area of necrotic tissue which formed a culture medium for the growth of organisms. Twenty-five per cent. of wounds of the lung proved fatal from haemorrhage and asphyxia. Surgeons now endeavoured to arrest the bleeding by direct surgical intervention at many casualty clearing stations. It had been shown that the operation of thoracotomy has little or no effect upon external blood pressure. Operations could be performed successfully upon the chest and lung in patients with a blood pressure as low as 50 mm. Hg—a point of great practical importance. The gravity of the prognosis of lung wounds was much increased by the frequency with which pleuro-pulmonary lesions of the opposite side occurred. Infection of the haemothorax in bullet wounds was exceptional. With an opening in the thoracic wall an aerobic infection from without was added to the anaerobic infection arising from the pleuro-pulmonary wound; it was partly on this account that open wounds of the thorax were so dangerous. The gravity of chest wounds from the fifth day onwards was due to pleural suppuration much more than to infection of the lung itself. The treatment of punctured wounds of the lung depended upon whether the wound was superficial, whether the foreign body was retained, or whether the case was one of the through-and-through type. The foreign body was removed when possible together with fragments of bone and pieces of clothing. The track was cleansed and the opening into the lung carefully closed. Primary extraction of all foreign bodies from the lung must be considered the rational treatment for preventing infection. Access could be gained to the lung most satisfactorily by an incision from the mid-axillary line to the parasternal region over the fifth rib. Several inches of the rib were excised, and the ribs above and below widely retracted. Openings in the diaphragm must be closed. The entire pleural surfaces should be wiped clean and the

opening closed by careful adjustment of the tissues in layers. Drainage was not desirable, and was not employed—in fact, it was positively dangerous. Gas and oxygen, or chloroform with oxygen, were the general anaesthetics used, but local anaesthesia might be employed satisfactorily. Ether must never be given. Blood transfusion was frequently given before or after operation. Morphine was always freely given and camphor injected if necessary. Great care was taken to prevent the patient breathing cool air. Watch was kept subsequent to operation for the accumulation of fluid in the pleura, and puncture was performed daily to obtain the fluid for bacteriological examination. Increasing infection of the fluid was generally treated by the removal of one or two stitches and the insertion of a drainage tube, but repeated aspiration had been successful in many cases. Duval had shown that the lung could be delivered on to the chest wall as intestine could be brought out of the abdomen.

At a meeting of the North of England Obstetrical and Gynaecological Society, held in Liverpool on December 13th, with the President, Mr. MILES PHILLIPS (Sheffield), in the chair, Mr. W. W. KING showed two cystic tumours of the vulva of somewhat doubtful pathology: the first was probably a cystic adenoma of Bartholin's gland and the other a cystic endothelioma. Dr. BLAIR BELL showed an abscess in a fibromyoma undergoing red degeneration and encephaloid cancer of abdominal wall secondary to paracentesis abdominalis for ascites due to intra-abdominal carcinoma. Dr. J. H. WILLETT showed a case of ectopic gestation, in which the mole, about the size of a hen's egg, was lying in the pouch of Douglas and both Fallopian tubes were apparently normal, except that on the right side a salpingotomy had been done some years previously, and this was found to be closed. Dr. LEITH MURRAY showed a specimen of sessile red fibroid on anterior wall of uterus, causing acute symptoms during pregnancy and enucleated at the twenty-first week, without interruption of gestation. Dr. FLETCHER SHAW described a case of extrauterine pregnancy which had progressed to the fifth month and for which he had had to do an abdominal section on account of severe pain. Dr. BRIGGS read a paper on the radical cure of complete procidentia, with notes of several illustrative cases.

Reviews.

THE STORY OF THE CANADIAN ARMY MEDICAL CORPS.

When in the dark days of the winter, now four years behind us, the people of the home countries began to get a true measure of the task before them, when, indeed, they knew that German troops had pushed forward till they saw the glint of the waters of the English Channel, the thing that did most to hearten them was the resolve of all our sister nations within the empire to defend the right for which we stood. It was not only the bigness of their effort, but the manner of it. Citizen soldiers of great Dominions, they might have resented being absorbed into the general force. In a spirit of true comradeship they quietly insisted that it was their fixed intention to be treated and used as a part of the single force of Britain and Greater Britain. They recognized at once the necessity of unity of command and the fullest community of effort. By no branch of an overseas contingent was this purpose better achieved than by the Canadian Army Medical Corps. Events were very soon to prove that the principle, in its application to that corps, was not only generous but wise. Its wisdom was tested at the second battle of Ypres, the first active operations in which the Canadians were engaged. From April 22nd, 1915, to May 4th, when the battle ceased, the number of wounded handled by the Canadian medical units was 10,043, but of these only 2,062 were Canadians. The figures analysed a little further give even more striking proof of the merging of British forces into a single instrument. At the beginning of the battle the most critical section of the front—the junction between the British and the French—was held by the Canadians (2nd and 3rd Brigades). The magnificent fight they made and the way

in which they refused to be cowed by the chlorine drift gas, then first used by the Germans, was the splendid beginning of the second big German failure. But their numbers were incredibly small for such a feat, and the first essential was to reinforce them with imperial troops. What happened is reflected in the medical statistics. On April 24th the casualties treated in the Canadian field ambulances numbered 1,424, and of these 714 were Canadians and 490 imperial; on April 27th the number was 1,864, but the proportional distribution was more than reversed, 266 Canadian and 1,530 imperial. This does not represent the whole of the work done by the Canadian Army Medical Corps, for they treated also some Indian and French wounded, and the totals do not include men first treated at Canadian advanced dressing stations and then sent to dressing stations of the imperial forces.

We make these observations and quote these statistics by way of introduction to the first volume of the *War Story of the Canadian Army Medical Corps*,¹ which Colonel J. G. ADAMI, M.D., F.R.S., A.D.M.S. in charge of records in the office of the Director-General of Canadian Medical Services, is writing. In this volume the story of the first contingent is brought down to the autumn of 1915. When it arrived in England in October, 1914, it was sent into camp under canvas at Salisbury Plain. It had undergone preliminary training at Valcartier before embarkation, and the plain was thought a suitable area for the next stage, though those who knew what a chalk down with its cap of clay can be in a wet winter wondered. The winter was very wet, and the contingent suffered extreme discomfort, but, so long as it was under canvas, little sickness. When, after some six weeks, the discomfort of tent life and the increasing cold of winter, induced the authorities to replace tents by hutments, influenza and throat troubles began to spread at once and rapidly. Major MacDermot, then a regimental medical officer, attributed this change to accumulation of dust, insufficiency of fresh air, and the loss of the comparative segregation of illness provided by the tents, when a number of men previously scattered through five or six tents were crowded together in one hut. A very serious feature of the situation was the appearance of a series of cases of cerebro-spinal fever: they were scattered through eighteen units on the Plain, and in only one was there anything approaching a regimental epidemic. Where the infection came from is not clear, but there had been four cases at Valcartier in September. It must, however, be remembered that the disease was occurring, though in small numbers, among the civil population in this country that autumn. As to the mode of dissemination, it did not appear to be due to room relations, and there was a suspicion that the disease was conveyed through partially rinsed mugs and glasses in the canteens. Afterwards at Witley camp a striking reduction in the number of cases of ulcerative stomatitis followed the enforcement of a regulation that in public drinking places the edge of every glass or mug shall be dipped momentarily after use into boiling water in the presence of the customer.

The first Canadian Division arrived in France in February, 1915, but the honour of being the first Canadian unit in France belongs to the 2nd Canadian Stationary Hospital which opened up a hospital of 300 beds at Le Touquet at the end of November, 1914. Moreover, the 1st Canadian Clearing Station was the first Canadian unit to participate in actual fighting; it was present at the battle of Neuve Chapelle. Nearly a third of the volume is properly given to an account of the second battle of Ypres, where the organization of the Canadian Army Medical Corps was tested to the uttermost. How well it responded this volume tells, and Colonel Adami is fully justified in saying that "at Ypres, at a bound, that service showed itself completely competent; and, as in matters military the eventual responsibility for every action falls upon the officer commanding, so rightly the credit for the success of the Canadian medical operations at Ypres should before all be awarded to the officer who controlled those operations, Colonel G. L. Foster, A.D.M.S.," who now, as Major-General Foster, C.B., is Director-General Medical Services, Overseas Military Forces of Canada.

¹ *War Story of the Canadian Army Medical Corps*. By J. G. ADAMI, M.D., F.R.S., temporary Colonel C.A.M.C. Vol. I. Published for the Canadian War Records Office by Colours, Ltd. (Crown 8vo, pp. viii + 286; illustrated).

The next chapters deal with the actions at Festubert and Givenchy, and then with the long period of trench warfare in the Plugstreet area, where the minds of the medical staff were chiefly occupied with the purification of water and disinfection of clothes. In spite of the multiplicity of details handled and the large number of names of places and persons he mentions, Colonel Adami has traced the ups and downs of the fights in 1915 and the part the C.A.M.C. had in them with the skill of an accomplished story teller. The reader is carried along breathless from one tight corner to another. Colonel Adami has depended largely upon the diaries of individual officers, and he does not disdain to glean from them personal touches which give a more vivid impression of the actual conditions than could be got from a formal description. Thus there was the thankfulness of Colonel Rackes for what at the moment seemed like a stroke of genius of the bearers who contrived for him high trestles on which the stretcher was placed to save the backaching labour of bending over the stretcher on the floor, a simple thing when you have thought of it and found the trestles. Then there is the picture of Colonel Ross at No. 1 Field Ambulance working away with no tunic and no belt, attired in an old green sweater, and getting things done; and the note of the M.O. of the 2nd Brigade, who thought our artillery response to the hurricane of German shells disappointing and depressing, sounding "like a pea-shooter in a foundry."

In the concluding chapters of the volume the work of various medical units and their establishment in France is described and administrative methods are fully explained, but in this direction the most valuable part of the book will be the account, given incidentally in the narrative of the battles, of the various difficulties encountered and surmounted in succession by General Foster, whose portrait appropriately forms a frontispiece to this volume. It should be added that excellent sketch maps are provided, showing the position of the medical units at several stages of the battles of Ypres, Festubert, and Givenchy.

THE A.A.M.C. IN EGYPT.

SIR JAMES BARRETT'S handsome volume, *The Australian Army Medical Corps in Egypt*,² gives, in the words of the subtitle, an illustrated and detailed account of the early organization and work of the Australian Medical Units in Egypt in 1914-1915. The author and his collaborator, Lieutenant P. E. DEANE, were both connected with No. 1 Australian General Hospital, the one as registrar, oculist, and aurist, the other as quartermaster; and a large part of the book is based on their personal experience of that hospital—its origin, its journey overseas, and its arrival, settlement, and work in Heliopolis and the surrounding district. Colonel Barrett had been secretary and executive officer of the Australian branch of the British Red Cross Society, and he subsequently held various other medical administrative posts. He was for a time A.D.M.S. and consulting oculist and aurist to the Australian Force in Egypt, while at the height of the emergency due to the casualties from the Gallipoli landing he was appointed a member of the Executive Committee of the British Red Cross Society in Egypt, upon which he did valuable work. His criticisms of the policy, or lack of policy, of the Australian Red Cross and his recommendations for securing greater efficiency in the military medical service come, therefore, from one who was in the very middle of events during that anxious time. His lively narrative reveals the problems that faced the A.A.M.C. in Egypt, and the admirable manner in which that corps responded to the emergency. The book is thus interesting as a story of human effort in time of stress and valuable as a record of medical administration under difficulties.

As everybody knows, discipline is not the strong point of the gallant Australian fighting men, and the tact and firmness of commanding officers has often been tried pretty highly. Consequently, it is not surprising to read that the venereal disease problem gave a great deal of trouble in Egypt, though its main features did not differ materially from those presented by the problem elsewhere. Simple leaflets and addresses warning the men against this danger and the allied danger of drunkenness were

given to troops on arrival; but notwithstanding these and other efforts, which received the warm support of General Birdwood, the amount of venereal disease continued to cause anxiety—1,344 men were returned to Australia disabled, and 450 were sent to Malta. Ample provision of soldiers' clubs, providing a "reasonable, healthy, and decent alternative" to misbehaviour, is regarded by the author as perhaps the most effective of the various means for checking this evil. Surveying the whole campaign after his second tenure of office in Egypt he concluded that the fundamental fault of the Australian Army Medical Service was the insufficient attention given to the prevention of disease generally.

The book is dedicated to Sir Henry and Lady MacMahon, the High Commissioner and his wife, in recognition of their services to the Australian sick and wounded in Egypt. There are many illustrations, reproduced for the most part from photographs by Private Frank Tate, which add to the interest of a work that should find many readers.

NOTES ON BOOKS.

IN the fifth edition of his *Textbook of General Bacteriology*³ Professor JORDAN has successfully surveyed the very wide field of bacteriology and has not confined his attention to the commoner pathogens of human diseases. There are excellent chapters on the filtrable viruses, the bacteriology of milk and milk products, on bacteria and the nitrogen cycle, on bacteria in the arts and industries, on the bacteria of air, soil, and water, and a fascinating description of the bacterial diseases of plants. In a new chapter on typhus fever the claims of the bacillus of Plotz to be the specific organism of the disease are advocated, but at the present time few would be disposed to regard it as more than a secondary invader. Consideration is given to the varieties and distribution of pneumococci, to the Schick reaction, to mouth entamoebae and to the *B. abortus* of Bang. We note that the author makes no mention of the *Spirochaeta icterohaemorrhagiae* and still considers the *B. proteus* to be the cause of Weil's disease. Bibliographical references are given at the foot of the pages and should prove useful to the advanced student. The author has succeeded in his attempt to furnish in English a general introduction to the subject with some regard for perspective and with emphasis on general rather than on special questions.

A Course in Food Analysis,⁴ by A. L. WINTON, furnishes an excellent introduction to the subject and provides a thorough training in the numerous procedures adopted in this important branch of chemistry. The directions are explicit, so that the intelligent student with this book as his guide will be able to surmount the difficulties that lie in his path. Careful selection has been made of the best methods of carrying out each determination. The author estimates that the course can be completed in forty laboratory periods of four hours each. For the student starting out to become a food analyst this work should prove exceedingly helpful, and, although it covers more ground than that usually surveyed by the D.P.H. candidate, it will be useful to the teacher in charge of the instruction of public health students. The paper and binding are good, the print large and clear, the illustrations numerous, and the whole makes an attractive volume of convenient size.

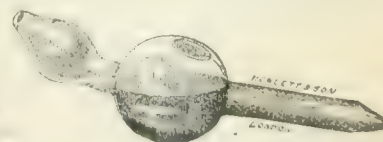
³ *A Textbook of General Bacteriology*. By Edwin O. Jordan, Ph.D., Professor of Bacteriology, University of Chicago. Fifth edition. Philadelphia and London: W. B. Saunders Company, 1916. (Roy. 8vo, pp. 668; 177 figures. 45s. net.)

⁴ *A Course in Food Analysis*. By Andrew L. Winton, Ph.D. London: Chapman and Hall, Ltd.; New York: John Wiley and Sons, 1917. (Med. 8vo, pp. ix + 252; 107 figures. 7s. net.)

MEDICAL AND SURGICAL APPLIANCES.

Nasal Douche.

MESSRS. C. J. HEWLETT AND SON, 35-42, Charlotte Street, E.C.2, have placed on sale a nasal douche of British manufacture which is handy and easily operated. A finger placed on the orifice in the glass dome regulates the flow of liquid. The contents do not spill when being used or when at rest. The glass is toughened and so can be sterilized by boiling without fear of breakage.



² *The Australian Army Medical Corps in Egypt*. By James W. Barrett, K.B.E., C.B., C.M.G., M.D., F.R.C.S., Temporary Lieut. Colonel R.A.M.C., lately Lieut. Colonel A.A.M.C.; and Lieutenant P. E. Deane, A.A.M.C. London: H. K. Lewis and Co., Ltd. 1918. Demy 8vo, pp. 271; 36 illustrations. 12s. 6d.)

THE INFLUENZA EPIDEMIC.

JUDGED by the mortality statistics of the Registrar-General's ninety-six great towns, it appears that the subsidence of the existing wave of influenza is definitive. In the week ending October 5th, 1918, 187 deaths from influenza were returned in the ninety-six great towns, having an estimated mid-1917 civilian population of 16,545,401. In the following week there were 647 deaths, and thereafter down to the week ending December 14th (the last available record at the time of writing) not less than a thousand deaths were recorded for each week, the maximum being 7,557 for the week ending November 9th. As was to be anticipated, the rate of decline has been smaller than that of increase; thus the third week before the maximum provided 1,887 deaths, while the fifth week subsequent to it gives almost the same number, 1,835. Taking the maximum week as the point of division, 14,615 deaths occurred before and 21,600 since those of the week ending November 9th.

As in other epidemics, considerable variations both of average mortality and date of onset are perceptible, but a just interpretation of these phenomena must depend upon the collection of more particulars than the records of deaths. Some points are brought out in the table, which has been constructed on the following lines: As examples of Southern towns we have selected Portsmouth, Southampton, Plymouth, and Exeter (gross population, 544,878); Midland towns are Birmingham, Coventry, Leicester, Nottingham, Derby (gross population, 1,566,786); Lancashire towns, Liverpool, Manchester, Salford, Oldham, Blackburn, Preston (gross population, 1,941,439); Yorkshire towns, Bradford, Leeds, Sheffield, Hull (gross population, 1,399,039); North-Eastern towns, Sunderland, South Shields, Gateshead, Newcastle (gross population, 633,950). We have calculated for the various groups the crude death-rates from influenza per week per million living from the week ending October 26th to that ending December 14th.

Weekly Death-rates per Million Living from Influenza in Groups of Towns.

	Week ending Oct. 26th.	Week ending Nov. 2nd.	Week ending Nov. 9th.	Week ending Nov. 16th.	Week ending Nov. 23rd.	Week ending Nov. 30th.	Week ending Dec. 7th.	Week ending Dec. 14th.
Southern towns ...	672	464	196	94	68	59	46	22
London ...	312	610	604	413	293	234	164	80
Midland towns ...	174	310	370	438	411	516	331	167
Lancashire towns ...	145	167	221	282	311	341	258	142
Yorkshire towns ...	352	652	636	474	365	288	177	87
North-Eastern towns	19	96	263	304	483	629	500	276

The contrast between the Southern and North-Eastern groups (all the towns except one being seaports) in respect of the date of maximum mortality might, taken alone, be thought to sustain an argument in favour of an extension northwards, but the comparison of the Lancashire and Yorkshire cities shows how rash any such generalization would be. This latter comparison is also instructive in connexion with variations of mortality rates, and invites an analysis of the occupational incidence.

In any summary grouping, however, it is impossible to avoid bringing together units not really *in pari materia*. Thus our Lancashire towns include the great port of Liverpool, for which the maximum (in the series of weeks chosen) occurred in the first week with 230 deaths, while Manchester reached its maximum of 374 deaths in the week ending November 30th. The seaports (other than London and the N.E.)—namely, Liverpool, Portsmouth, Southampton, and Plymouth—all give maxima in the first or second week of our series, but differ considerably amongst themselves in the severity of incidence. Thus Portsmouth, with a population of 198,527, returns 317 deaths in the eight weeks; Liverpool, with 716,140 civilian inhabitants in 1917, records 844, and more than half the deaths in Portsmouth (175) were returned for the first week of the series. It is obvious that a careful study of the case incidence should be made, and although this will be impracticable for the civilian population as a

whole, a good deal of light will be thrown upon the subject by an analysis of the records of such military organizations as the Royal Air Force, which has maintained establishments in all parts of the United Kingdom, and under conditions which do not deviate so widely from those of the civilian population as to render deductions of merely specialized value.

A point of especial interest is whether the heavy death-rate at younger ages, to which Dr. Stevenson drew attention in the discussion at the Royal Society of Medicine, and which has been noted by other writers, is a resultant of a relatively higher incidence or only of a higher fatality rate.

STANDARD ILLUMINATION IN VISION TESTING.

THE Council of British Ophthalmologists appointed last year a committee to determine standards of illumination for Snellen's test types for distant vision. The committee consisted of Sir George Berry (chairman), Sir Richard Glazebrook, C.B., F.R.S. (Director of the National Physical Laboratory), Mr. C. C. Paterson, O.B.E. (National Physical Laboratory), Mr. Leon Gaster (Secretary of the Society of Illuminating Engineers), Mr. J. Herbert Fisher, Colonel J. Herbert Parsons, Mr. A. B. Cridland, and Mr. W. H. MacMullen, O.B.E. (secretary), and its report¹ is as follows:

The effect upon visual acuity of variations in the illumination of test objects has been the subject of a series of careful investigations since the time of Tobias Mayer (1754). Two chief facts emerge from these researches: (1) That there is a rapid rise in acuity as the illumination is increased from zero up to about two foot candles²; (2) that above two or three foot candles there is scarcely any appreciable rise in acuity. The results obtained by different observers are not entirely concordant, the discrepancies being attributable to variations in the test object, contrast, size of pupil, etc. So far as the testing of visual acuity for clinical purposes is concerned, it appears to be sufficiently accurate to regard the results obtained with an illumination of three foot candles or more as valid and comparable under the ordinary conditions of clinical testing.

There is, however, no doubt that this minimum is by no means always ensured under the actual conditions in which the testing of candidates for military or other public services occurs. Apart from the fact, which should be borne in mind, that the test types often do not conform to Snellen's criteria, they are frequently dirty, thus diminishing contrast, are varnished, thus giving rise to disturbing direct reflection of light, and are viewed under very great variations of daylight, in rooms which are often ill suited for the purpose.

It is possible to lay down precise and simple rules for the efficient illumination of test types, and we see no reason why these rules should not be generally adopted. For the public services it is in our opinion unfair to the candidates and detrimental to the services themselves that the examinations should take place under unsatisfactory, and often hurriedly improvised, conditions. The testing of visual capacity is now an essential part of the physical examination of candidates for a large number of the public services, such as the navy, the army, the mercantile marine, the Indian Civil Service, and so on. We are of opinion that these tests should be conducted under approved conditions, and that this object would be best attained if the examinations were held at properly equipped centres.

We fully recognize that variations of visual acuity arise from many causes other than the actual illumination of the test types, such as the condition of retinal adaptation, contrast between the test object and its background, the size of the pupil, lateral illumination, and so on. We think, however, that these effects can be minimized sufficiently for practical clinical purposes if the testing takes place in a moderately well illuminated room, with the test types efficiently lighted, and with the careful elimination of any glaring lights or bright objects from the candidate's field of vision.

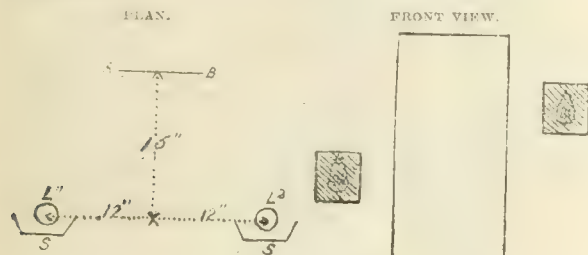
¹ Report on Standard Illumination of Snellen's Types Used in Testing the Vision of Candidates for Public Services. Published for the Council of British Ophthalmologists by G. Pulman and Sons, Ltd. (Price 6d.).

² One foot candle is the illumination received from a source of one candle power falling perpendicularly on a surface at a distance of one foot from the source.

We consider that the requirements are sufficiently well satisfied by the following means:

Two ordinary 20 watt tungsten lamps with straight filaments are fixed vertically 15 in. in front of the plane of the test card, one on each side, at a horizontal distance of 12 in. from the vertical plane normal to and bisecting the card. One lamp is placed higher than the other, one being opposite the junction of the upper and middle thirds of the card, the other opposite the junction of the middle and lower thirds. Opaque non-reflecting screens are fitted, so as to prevent direct light from the lamps reaching the candidate's eyes.

The accompanying diagrams illustrate the arrangement recommended.



A, B = Test card. L¹, L² = Lamps. S, S = Screens lined with matt black.

This method ensures:

1. Sufficient illumination. With new lamps the illumination on the test types will be of the order of 10 foot candles. The ordinary variations of current, deterioration of lamps, and the darkening of the test card with age will not reduce the brightness of the test card so illuminated to a value less than that of a perfectly white surface receiving an illumination of 3 foot candles.

2. Sufficient uniformity of illumination. Whilst we are aware that the same result can be achieved by the employment of properly designed and carefully placed reflectors, we have had to recognize in making these proposals that the testing of visual acuity must often be carried out in circumstances which do not admit of the use of special lighting arrangements, requiring technical skill in their installation or upkeep. We have therefore endeavoured to prescribe a method of ensuring the necessary illumination which is simple to erect, is not liable to become deranged by subsequent treatment, and which enables ordinary lamps on the market to be employed. Where electric light is not available a similar arrangement can be installed, using other illuminants (see appendix).

There is no theoretical objection to the use of diffuse daylight so long as the illumination on the test types is adequate, that is, does not fall below 3 foot candles. In cases of doubt, it would be necessary to apply tests requiring the skilled use of some form of photometer. We are therefore of opinion that, in order to secure uniformity and comparable results, artificial illumination should in general be used, and invariably in testing for the public services.

We therefore make the following recommendations:

I. *The Test Types.*—The test types shall be of the dimensions laid down by Snellen, and printed on a matt white surface.

II. *Illumination.*—

a. The minimum illumination on the test card shall be such that its brightness shall be equivalent to that of a new card illuminated to at least 3 foot candles;

b. The illumination of the test types shall be as uniform as possible;

c. Artificial illumination shall be used in preference to daylight;

d. The testing room shall be moderately illuminated, and care shall be taken that there are no glaring lights or bright objects in the candidate's field of vision;

e. Extreme contrast between the illuminated test card and the background shall be avoided.

III. *Method of Lighting.*—

a. The method of lighting described in this report shall be in general adopted;

b. This method shall be made compulsory for sight testing in all public services.

APPENDIX.

ILLUMINATION OF TEST TYPES BY GAS OR OIL LAMPS.

Gas Lighting.—Two "medium" inverted incandescent burners, consuming 2½ to 2¾ cub. ft. of gas per hour, are fixed 2½ ft. in front of the test card, one on each side, at a horizontal distance of 12 in. from the vertical plane, normal to and bisecting the card. One burner should be higher than the

other, one being opposite the junction of the upper and middle thirds of the card, the other opposite the junction of the middle and lower thirds. Burners should be equipped with clear glass globes, and care should be taken to ensure, by regular maintenance, that mantles and burners are kept in good order and in clean condition. Opaque non-reflecting screens are fitted so as to prevent direct light from the burners reaching the candidate's eyes.

Oil Lighting.—Two standard "Duplex" oil lamps, each having a double straight wick, 1 in. in width and a chimney 10½ in. in length, are fixed 2 ft. in front of the test card, one on each side, at a horizontal distance of 12 in. from the vertical plane, normal to and bisecting the card. One lamp should be higher than the other, one being opposite the junction of the upper and middle thirds of the card, the other opposite the junction of the middle and lower thirds. The wick should be turned up as high as is possible without smoking, and the face of the wick should be turned towards the card. The distance from top of wick to level of oil in reservoir should not exceed 5 in. The lamp should be lighted twenty minutes before the test, so as to ensure steady conditions of burning. Opaque non-reflecting screens are fitted, so as to prevent direct light from the lamps reaching the candidate's eyes.

THE GENERAL ELECTION.

MEDICAL MEMBERS.

The following list contains, we believe, the names of all medical men elected to the new Parliament. They number 16. The university contests being of special interest to the profession fuller particulars are given:

UNIVERSITIES.

Oxford.

Lord Hugh Cecil (Co.U.)	...	2,771
R. E. Prothero (Co.U.)	...	2,546
Professor Gilbert Murray (L.)	...	812
H. S. Furniss (Lab.)	...	351

The representation is unchanged. Lord Hugh Cecil has sat for the university since 1910, and Mr. R. E. Prothero, President of the Board of Agriculture, since 1916. Professor Gilbert Murray has held the chair of Greek at Oxford since 1908, and Mr. Furniss is Principal of Ruskin College, Oxford.

Cambridge.

J. F. P. Rawlinson (Co.U.)	...	2,034
Sir Joseph Larmor (Co.U.)	...	1,986
W. C. D. Whetham (Ind.)	...	1,229
J. C. Squire (Lab.)	...	641

Here again there is no change. Mr. Rawlinson, who has represented the university since 1906, is a commissary and deputy high steward of the university and recorder of the borough of Cambridge. Sir Joseph Larmor, F.R.S., was senior wrangler in 1880, and has been Lucasian professor since 1903. He was first elected to represent the university in Parliament in 1911. Mr. W. C. Dampier Whetham, F.R.S., was Coutts Trotter student for original research in natural science, and Clerk Maxwell student in experimental physics. He is a well known writer on social subjects. Mr. Squire is editor of the *New Statesman*.

London.

Sir Philip Magnus (Co.U.)	...	2,810
Sidney Webb (Lab.)	...	2,141
A. A. Somerville (Teachers)	...	885
Sir W. Herrington (Ind.)	...	715
C. L. Nordon (Ind.)	...	210

Sir Philip Magnus has represented the university since 1906. Mr. Sidney Webb was one of the authors of the minority report of the Poor Law Commission, and took part in the foundation of the London School of Economics and Political Science. Sir Wilmot Herrington is physician to St. Bartholomew's Hospital and Major-General in the Army Medical Service. Mr. Nordon is a solicitor, and has served in the army during the war.

Combined English.

H. A. L. Fisher (Co.L.)	...	959
Sir Martin Conway (Co.U.)	...	777
J. A. Hobson (Ind.)	...	481
H. G. Williams (U.)	...	410

Mr. Fisher and Sir Martin Conway are the first members for the combined English universities; the former is President of the Board of Education and the latter a mountaineer and writer on art. Mr. J. A. Hobson is a writer on industrial subjects, and Mr. H. G. Williams is an engineer.

Wales.

H. Lewis (Co.L.)	...	739
Hon. Mrs. Mackenzie (Lab.)	...	176

Mr. Lewis has been Parliamentary Secretary to the Board of Education since May, 1915, and was previously Parliamentary Secretary to the Local Government Board and a Liberal Whip.

Scotland.			
Sir Watson Cheyne (Co.U.) ...	...	...	3,719
D. M. Cowan (Co.L.) ...	...	...	3,499
Sir Henry Craik (Co.U.) ...	...	...	3,286
Dr. P. Macdonald (Lab.) ...	...	...	1,581
Prof. W. R. Smith (Ind.) ...	...	...	850

For the combined Scottish university constituency, with three seats, the two old members, Sir Watson Cheyne, and Sir Henry Craik, have been re-elected, together with Mr. D. M. Cowan, M.A., a schoolmaster, who has been at the head of a large primary and secondary school. Dr. Peter Macdonald is an ophthalmic surgeon in York whose views on the future of medicine are well known to our readers through his writings in our columns. Professor W. R. Smith holds the chair of Forensic Medicine and Toxicology in King's College, London, and is this year one of the Sheriffs of the City of London.

Dublin.			
A. W. Samuels (U.) ...	...	...	1,273
Sir R. Woods (Ind.) ...	...	...	793
Wm. Jellett (U.) ...	...	...	631
Captain S. L. Gwynn (N.) ...	...	...	257

Sir Robert Woods, who graduated M.B., B.Ch. Dublin in 1889, is Professor of Laryngology and Otology in Trinity College, Dublin, and was president of the Royal College of Surgeons in Ireland in 1910-12. Mr. Samuels is Attorney-General for Ireland.

National University of Ireland.			
J. MacNeill (S.F.) ...	...	...	1,644
Professor A. W. Conway (N.) ...	...	...	813

Mr. MacNeill was Professor of Irish in the National University and was president of the Sinn Féin organization at the time of the Easter rebellion.

Queen's University, Belfast.			
Sir W. Whitla (U.) ...	...	...	1,487
S. Dolan (S.F.) ...	...	...	118

Sir William Whitla is Professor of Materia Medica and Therapeutics and Senior Physician to the Royal Victoria Hospital, Belfast. He is well known to members of the British Medical Association, having been President at the annual meeting held in Belfast in 1909.

COUNTIES AND BOROUGHES. England and Wales.

Member.	Constituency.	Politics.	Majority.
Dr. Christopher Addison ...	Shoreditch ...	Co.L.	6,118
Major A. C. Farquharson, R.A.M.C.(T.)	Leeds, North ...	Co.L.	10,440
Sir Auckland Geddes ...	Basingstoke, Hants	Co.U.	4,941
Dr. B. F. P. McDonald ...	Wallasey ...	Co.U.	10,249
Major J. E. Molson, R.A.M.C.(T.F.)	Gainsborough ...	Co.U.	2,078
Lieut.-Col. Nathan Raw, C.M.G. R.A.M.C.	Wavertree, Liverpool	Co.U.	6,223

Dr. Christopher Addison, who was lecturer in anatomy in the medical school of St. Bartholomew's Hospital when he entered Parliament for the Hoxton Division of Shoreditch in 1910, became Parliamentary Secretary to the Board of Education in August, 1914. When the Ministry of Munitions was established in the following year he became its Parliamentary Secretary, and succeeded Mr. Lloyd George as Minister at the end of 1916. In 1917 he became Minister of Reconstruction, and in that capacity introduced the Ministries of Health Bill at the end of last session.

Major A. C. Farquharson graduated M.B., C.M.Glasg. in 1889, and M.D. in 1891; he has held various public medical appointments in the Auckland district of co. Durham. He is also a barrister-at-law. He is a member of the Council of the British Medical Association. At the outbreak of war he was a captain in the R.A.M.C. Territorial Force, and one of the medical officers to the 6th Battalion Durham Light Infantry. In 1915 he was appointed to the head quarter staff of the 63rd Division, and a year later became deputy assistant director of medical services on the staff of the D.D.M.S., Northern Command.

Sir Auckland Geddes, one of the many distinguished anatomists of the Edinburgh school has given to other universities, is professor of anatomy, McGill University, Montreal. He had served in the South African war as a lieutenant in the 3rd Highland Light Infantry, and at the outbreak of war came to this country to serve again. He was Director of Recruiting at the War Office from 1916 to 1917, when he became Minister of National Service. He is now President of the Local Government Board.

Dr. Bouverie F. P. McDonald graduated M.B., C.M. Edin. in 1884, and M.D. in 1886. He is in practice in New Brighton on the Mersey, and is a county councillor and J.P. for Cheshire. He has taken a very active part in local war work in Wirral, and served on the recruiting committee of Wallasey, the constituency for which he now sits.

Major J. E. Molson graduated M.B., B.C. Camb. in 1891 and M.D. in 1905. He holds a commission as Major in the R.A.M.C. Territorial Force. He had retired from practice before the war.

Lieut.-Colonel Nathan Raw, C.M.G., graduated M.B., B.S. Durh. in 1888, and M.D. in 1891. He has been physician to the Mill Road Infirmary, Liverpool, since 1897, and is a member of the International Committee for the Prevention of Tuberculosis. He has been O.C. of No. 6 British Red Cross (Liverpool Merchants) Hospital in France.

Scotland.

Member.	Constituency.	Politics.	Majority.
Captain W. E. Elliot, M.C., R.A.M.C.(S.R.)	Lanark ...	Co.U.	7,155
Dr. Donald Murray ...	Western Isles ...	L.	390

Captain Walter E. Elliot graduated M.B., Ch.B. Glas. in 1913. He held a commission in the R.A.M.C. Special Reserve and was attached to the Scots Greys. He was wounded in France and was awarded the Military Cross as well as a French decoration.

The constituency of the Western Isles, which Dr. Donald Murray has been elected to represent, includes the Lews, Harris, and North and South Uist. He was born in Stornoway, where he now resides, and graduated M.B., C.M.Glas. in 1890. He is M.O.H. for Lewis and Stornoway, and medical inspector of school children for Lewis and the western portion of Ross-shire.

Ireland.

Member.	Constituency.	Politics.	Majority.
Dr. John Crowley ...	Mayo, North ...	S.F.	5,668
Dr. B. A. Cusack ...	Galway, North ...	S.F.	4,897
Dr. Richard Hayes ...	Limerick, East ...	S.F.	9,142
Dr. Patrick McCartan ...	King's County ...	S.F.	unopposed
Dr. James Ryan ...	Wexford South ...	S.F.	518

Dr. John Crowley is medical officer of the Ballycastle Dispensary District, co. Mayo.

Dr. B. A. Cusack, medical officer of the Turloughmore Dispensary District, co. Galway, is, we are informed, at present interned in Birmingham. He is a brother of Dr. P. J. Cusack, the defeated Irish parliamentary candidate for North Meath.

Dr. Richard Hayes was Poor Law medical officer of the Lusk Dispensary District, co. Dublin. For his part in the rebellion he was sentenced to twenty years' penal servitude. He is at present, we are informed, interned in England.

Dr. P. McCartan was Poor Law medical officer in the county Tyrone, and is, we are informed, at present in America.

Dr. James Ryan only recently qualified, and is engaged in private practice in the town of Wexford.

NEW YEAR HONOURS.

CERTAIN New Year honours were announced on New Year's day in the *London Gazette*, but further lists will appear later, including what is commonly called the Prime Minister's list. The lists so far issued refer to services rendered in the Royal Navy, in the army in France and Flanders and in India. Certain civil honours are also announced. We are this week only able to publish the first part of the lists already issued.

ROYAL NAVY.

The following honours have been granted in recognition of valuable services rendered during the war:

K.C.M.G.

Surgeon Rear Admiral George Welch, C.B.

C.B.

Surgeon Captain Walter Godfrey Axford, R.N.
Surgeon Captain Arthur Stanley Nance, R.N.

C.M.G.

Surgeon Commander Robert Donaldson Jameson, R.N.
Surgeon Commander Hugh Somerville Burniston, R.N.

D.S.O.

Surgeon Lieut. Commander H. D. Drennan, R.N.

C.B.E.

Surgeon Captain George Thomas Broach, R.N.
Surgeon Captain Vidal Gunson Thorpe, R.N.

O.B.E.

Surgeon Commander Richard Francis Bate, R.N.
Surgeon Commander Robert Hardie, R.N.
Surgeon Commander (acting Surgeon Captain) Herbert Lloyd Penny, R.N.
Surgeon Commander Ernest Albert Shaw, R.N.
Surgeon Lieut. Commander Leslie Miles Morris, R.N.
Surgeon Lieutenant Arthur Ernest Hes, R.N.

ARMY (France and Flanders).

The following honours have been conferred for valuable services rendered in France and Flanders:

K.C.B.

Major-General (temporary Lieut.-General) Charles Henry Burtchall, C.B., C.M.G., K.H.S., A.M.S.

C.B.

Major-General Richard Cleveland Munday, R.A.F., Medical Branch.

Colonel Theophilus Percy Jones, C.M.G., A.M.S.
Colonel Charles Augustus Young, C.M.G., A.M.S.
Temporary Colonel Hamilton Ashley Ballance, A.M.S.
Temporary Colonel Andrew Fullerton, C.M.G., A.M.S.

C.M.G.

Colonel James Adam Dick, A.A.M.C.
Colonel Donald Johnstone McGavin, D.S.O., N.Z.M.C.
Colonel John Poe, D.S.O., A.M.S.
Colonel Robert Percy Wright, D.S.O., C.A.M.C.
Temporary Colonel (Major R.A.M.C.(T.F.)) George Ernest Gask, D.S.O., A.M.S.
Temporary Colonel John Alexander Nixon, A.M.S.
Temporary Colonel (Lieut.-Colonel R.A.M.C.(T.F.)) William Errington Hume, A.M.S.
Lieut.-Colonel Spurgeon Campbell, C.A.M.C.
Lieut.-Colonel William Kitson Clayton, T.D., R.A.M.C.(T.F.).
Lieut.-Colonel John Franklin Kidd, C.A.M.C.
Lieut.-Colonel (temporary Colonel) Alexander James MacDougall, R.A.M.C.
Lieut.-Colonel (temporary Colonel) Henry Graham Martin, R.A.M.C.
Lieut.-Colonel Charles James Martin, F.R.S., A.A.M.C.
Lieut.-Colonel (temporary Colonel) Standish de Courcy O'Grady, D.S.O., R.A.M.C.
Lieut.-Colonel (temporary Colonel) Henry Herrick, D.S.O., R.A.M.C.
Lieut.-Colonel (temporary Colonel) Horace Samson Roch, D.S.O., R.A.M.C.
Lieut.-Colonel Donald Norman Watson Murray, D.S.O., N.Z.M.C.
Temporary honorary Lieut.-Colonel Hugh Cabot, R.A.M.C.
Temporary Major (acting Lieut.-Colonel) Joseph Dalrymple, O.B.E., R.A.M.C.

D.S.O.

Lieut.-Colonel (temporary Colonel) Farquhar McLennan, R.A.M.C.
Lieut.-Colonel Roy William Chambers, 11th Field Ambulance, A.A.M.C.
Lieut.-Colonel George Craig, No. 1 New Zealand Field Ambulance, N.Z.M.C.
Lieut.-Colonel William Edward Lodewyk H. Crowther, 5th Field Ambulance, A.A.M.C.
Lieut.-Colonel George William Macartney, 10th Field Ambulance, A.A.M.C.
Temporary Lieut.-Colonel Charles Walter Vipond, 9th Field Ambulance, C.A.M.C.
Major (temporary Lieut.-Colonel) Edmund Frank Lind, 2nd Field Ambulance, A.A.M.C.
Major (acting Lieut.-Colonel) Alexander Callam, R.A.M.C.(T.F.), attached 1/1st (East Lancashire) Field Ambulance.
Major (acting Lieut.-Colonel) Edward Harvie Cox, 2/3rd (East Lancashire) Field Ambulance, R.A.M.C.(T.F.).
Major (acting Lieut.-Colonel) Clive Thornley Edmunds, 57th Field Ambulance, R.A.M.C.
Major (acting Lieut.-Colonel) William Henry Forsyth, 38th Field Ambulance, R.A.M.C.
Major (acting Lieut.-Colonel) Stuart Gerald McAllum, R.A.M.C.(S.R.), attached 14th Field Ambulance.
Major (acting Lieut.-Colonel) Thomas Trevor Hull Robinson, R.A.M.C., No. 5 Field Ambulance.
Major (acting Lieut.-Colonel) John Hector Stephen, 89th (Highland) 1/1st Field Ambulance, R.A.M.C.(T.F.).
Major (acting Lieut.-Colonel) James Henry Wood, 2nd Field Ambulance, C.A.M.C.
Major Archibald McKillop, 1st Field Ambulance, A.A.M.C.
Major Claude Morlet, 13th Field Ambulance, R.A.M.C.
Major William Alexander Morton, A.A.M.C., attached 3rd Brigade Australian Field Artillery.
Major Vincent Wellesley Savage, 3rd Field Ambulance, A.A.M.C.
Major William Campbell Sawers, 14th Field Ambulance, A.A.M.C.
Captain (temporary Lieut.-Colonel) James Barkley, R.A.M.C.(T.F.), attached 2/3rd (Home Counties) Field Ambulance, R.A.M.C.(T.F.).
Captain (temporary Lieut.-Colonel) Charles William Eames, R.A.M.C.(T.F.), attached 2/2nd (West Riding) Field Ambulance.
Captain (acting Lieut.-Colonel) Robert Burgess, M.C., R.A.M.C.(T.F.), attached 24th (1/1st Wessex) Field Ambulance.
Captain (acting Lieut.-Colonel) Lee Danby Buxton Cogan, 68th Field Ambulance R.A.M.C.(T.F.).
Captain (acting Lieut.-Colonel) Francis George Dobson, R.A.M.C.(T.F.), attached 1/2nd (West Riding) Field Ambulance.
Captain (acting Lieut.-Colonel) Cyril James Anthony Griffin, R.A.M.C.(S.R.), attached 5th Cavalry Field Ambulance.

Captain (acting Lieut.-Colonel) Cyril Helm, M.C., 42nd Field Ambulance, R.A.M.C.

Captain (acting Lieut.-Colonel) Charles Llewellyn Lander, M.C., R.A.M.C.(T.F.), attached 2/3rd (S.M.) Field Ambulance, R.A.M.C.(T.F.).

Captain (acting Lieut.-Colonel) John MacMillan, M.C., R.A.M.C., attached 5th (London) Field Ambulance, R.A.M.C.(T.F.).

Captain (acting Lieut.-Colonel) Charles Max Page, R.A.M.C.(S.R.), attached 190th Field Ambulance.

Captain (acting Lieut.-Colonel) James Young, 1/3rd (Lowland) Field Ambulance, R.A.M.C.(T.F.).

Captain (acting Major) Thomas Ingram Dunn, M.C., R.A.M.C.
Temporary Captain (acting Major) Alexander Edmond Knight, M.C., R.A.M.C.

Temporary Captain (acting Major) Montgomery Paterson Paton, M.C., R.A.M.C.

INDIA.

The following honours are conferred in recognition of services rendered in India:

C.I.E.

Lieut.-Colonel John Telfer Calvert, I.M.S., Principal, Medical College, Calcutta.

Major John Hanna Murray, I.M.S., Andaman Islands.

Lieut.-Colonel Francis Edward Swinton, I.M.S., Medical Storekeeper, Bombay.

Lieut.-Colonel John Charles Lamont, I.M.S.(ret.), Professor of Anatomy, Medical College, Lahore.

CIVIL.

Among the civil honours conferred are the following:

K.C.V.O.

Sir George Anderson Critchett, Bt., C.V.O.

Knighthoods.

Dr. William Leslie Mackenzie, Medical Member of the Local Government Board for Scotland.

Mr. G. Dancer Thane, LL.D., F.R.C.S., Principal Inspector under Cruelty to Animals Act, Home Office.

C.B.

Dr. Robert Bruce Low, Assistant Medical Officer, Local Government Board (retired).

COLONIAL OFFICE LIST.

Knight Bachelor.

Lieut.-Colonel John Hewat, M.B., Member of the House of Assembly of the Union of South Africa and Assistant Director of Medical Services of the Union.

Medico-Legal.

AN UNREGISTERED PRACTITIONER.

At the Bromley police court, on December 19th and 23rd, 1918, James Allan pleaded guilty to a charge of practising as a medical man without being registered. A second charge of unlawfully signing a death certificate was not proceeded with in view of the plea of guilty to the first charge. Sir Archibald Bodkin, who appeared for the Director of Public Prosecutions, said that there was a James Allan, who in 1892 obtained the M.B. and C.M. degrees at Edinburgh University. He died in 1898 and his name was erased from the *Medical Register*, and that name with those degrees never again appeared therein. In the unofficial publication called the *Medical Directory*, however, there appeared from 1901 onwards the name of James Allan, M.B., C.M.Ed. The form sent out by the publishers of the directory for the 1919 edition was returned with the addition after the defendant's name of the letters O.B.E. This distinction, which had been conferred on James Allan, appeared in the newspapers, and was seen by the acting registrar of the General Medical Council, who looked at the official publication, and found that no such practitioner was registered therein. Accordingly he communicated with the Scottish branch registrar, and communications were addressed to James Allan. In consequence of the replies the registrar in London communicated with the solicitor to the Council, and the matter came before the Director of Public Prosecutions. As the result of inquiries by the police it was found that the defendant was the son of an Irish farmer, who went to Glasgow at the age of 18, and, after being a shop assistant for a time, studied medicine; afterwards he went as assistant to doctors and then practised at Chislehurst as a medical man. Owing to his energy in connexion with local Red Cross hospitals he received the distinction of O.B.E. Lord Chilton, Director of the Kent V.A.D., in giving evidence as to the defendant's character, praised his work at the Chislehurst Red Cross Hospital; and the Rector of Chislehurst said that Allan attended his household for sixteen years with skill and success. Mr. Tree, who appeared for the defendant, pleaded that he had been guilty of a technical offence, but had done nothing to the danger of the public; owing to a stupid blunder twenty years ago as a young man he had not qualified. The Bench imposed the maximum penalty of £20, with ten guineas cost.

British Medical Journal.

SATURDAY, JANUARY 4TH, 1919.

THE WONDERFUL YEARS.

THE most wonderful year was 1914, when the nations vowed to themselves and to each other to fight for their heritage of the spirit. The year 1918 was wonderful also for the material victory by which the vow of the spirit was accomplished.

It is not easy to-day to go back to the frame of mind in which we were a year ago. The outlook was dark; we and our Allies were holding grimly on and were greatly comforted by the resolve of America, which had begun to land troops in France at the end of June, 1917, but no man ventured to foretell when the arch-enemy, Germany, would be beaten to her knees. We had then recently been distressed by the Italian defeat at the end of October, and cheered by their stand a fortnight later made with the aid and encouragement of British and French troops; we had witnessed the dearly bought victory of Passchendaele, we had rejoiced for a moment in the rapid advance at Cambrai which seemed to presage the end of trench warfare, and imagination had been impressed by the capture of Jerusalem (December 9th). But we had witnessed also the Bolshevik *coup d'état* in Russia, the armistice with Germany on that front, and the Brest conference just before Christmas, which no one doubted marked the final abandonment of our cause by Russia. But darker days were in store when, in March, came the immediate success of the German offensive, and its armies were again on the Marne, again forcing on towards Paris, and again in sight of the Channel from Kemmel Hill. The third Military Service Act showed how close we had got to our limit of man power, and the best news was the determination of America immediately to send a great army to France. At the end of June we knew of the defeat of the Austrians in Italy, at the beginning of July that a million American soldiers had been shipped to France, at the end of July that Foch's great counter-attack was succeeding, and in early September that the Drocourt-Quéant line was breached. At the end of September the surrender of Bulgaria withdrew the first stone from the arch that sustained the Central Powers; at the end of October Austria and Turkey sued for peace, and then came the last events—the flight of the Kaiser from his empire on November 10th and the acceptance of the Allies' armistice terms by Germany on November 11th.

All through the four and a half years, the 1,560 days of the war, no class of the community in this country was tried higher than the medical profession, and it can look back with satisfaction on the work it has done and the way in which it organized to meet the emergency. The British Medical Association stands to be shot at, but it has not, we venture to assert, had the credit it deserves for its initiative in the autumn of 1914, which resulted in the establishment of the professional committees for the organization of medical effort in the war. The first move was made by the Chairman of the Scottish Committee of the British Medical Association, the late Dr. Hamilton of Hawick, and his suggestion was at once taken up by the colleges and universities in Scotland. Through

this co-operation a strong and very representative committee was formed, which has rendered most valuable services to the medical profession in Scotland, and to the navy and army. In England and Wales similar work was undertaken by the Chairmen's Committee of the Council of the British Medical Association, and carried on until, at the next ensuing Annual Representative Meeting (July, 1915), formal steps could be taken to establish a joint committee with other professional bodies. The members nominated by the Association numbered 16, and power was given to co-opt 6 representatives of universities, colleges, and other medical bodies. The committee was instructed "to organize the medical profession in England, Wales, and Ireland in such a way as will enable the Government to use every medical practitioner fit to serve the country in such a manner as to turn his qualifications to the best possible use, and to deal with all matters affecting the medical profession arising in connexion with the war." The Central Medical War Committee thus established worked very hard in the ensuing months, and, we venture to say, very well. Its scheme of enrolment, put out early in December, 1915, was recognized by the Army Council, which on January 12th, 1916, stated that no qualified medical practitioner willing to accept, if offered, a commission in the R.A.M.C., would be accepted as an ordinary combatant, and undertook to recognize the certificate of enrolment of the Central Medical War Committee. The Scottish Medical Service Emergency Committee was placed in the same position. Arrangements were thus well in hand when the first Military Service Act (1916) received the Royal assent on January 27th. That Act applied to members of the medical profession who were single and under 41 years of age, but by the Army Council decision noted above it remained with the professional committees to call upon them for service in the R.A.M.C. if and when they were required.

In March, 1916, at the suggestion of the Marylebone Medical War Committee, through the Central Medical War Committee, the Royal Colleges in London appointed a Reference Committee "to give advice to the Government in relation to medical practitioners in the metropolitan district required for service in the army, and also to advise on cases of special difficulty elsewhere in England and Wales." The second Military Service Act of 1916, which received the Royal assent on May 25th, rendered all men under 41, including medical men, liable to compulsory service, but it provided that if a medical man produced the certificate of enrolment the recruiting authority would refrain from further action. The Act directed the establishment of professional committees to deal with claims for exemption made in respect of duly qualified medical practitioners, and the decision of such committees was to be binding on tribunals. On June 7th, before the Act came into force, the Army Council recognized the Central Medical War Committee for England and Wales and the Scottish Medical Service Emergency Committee as the central professional committees, and the Reference Committee of the Royal Colleges as the central committee in respect of members of hospitals or medical schools in London, and, in certain circumstances, of staffs of other hospitals.

The work of the committees during the next two years continued on the lines thus laid down; it involved frequent meetings and a laborious investigation of the medical conditions in every district of the country. The strain upon the man power of the country in the winter of 1917-18 had forced the conclusion that a more drastic combing out was needed,

and the victorious German advance at the end of March led to immediate action in Parliament by the passing of the third Military Service Act (April, 1918). It made every man born in Great Britain aged not more than 51 liable to military service, but for medical men extended the liability to 56. The procedure evolved in the previous three years by the professional committees and tested during two, was applied again, although, in place of the certificate of enrolment issued by the professional committees, a "certificate of protection" was instituted by the Ministry of National Service, which, however, acted throughout on the advice of the professional committees. The condition attached to the certificate made the practitioner, if not required for medical service with the armed forces, liable to undertake such professional service as the Ministry of National Service, after consultation with the medical tribunals, might from time to time deem best in the national interests. So far as we are aware, it has not been necessary to make use of this compulsory power, and the fact is a tribute to the patriotism and reasonableness of the profession.

We cannot leave this short sketch of the origin and the work of the professional committees without complimenting them upon the wisdom of their policy, which made it possible for the medical profession to retain the management of affairs in its own hands. We may be permitted to pay a special tribute to the services of Dr. T. Jenner Verrall, chairman of the Central Medical War Committee; of Dr. Charles Buttar, chairman of its Executive Committee; of Dr. T. W. Shore, who became the chairman of a sub-committee appointed later on to make local arrangements, a committee which had a difficult and thankless task; and of the two secretaries, Mr. Bishop Harman and Dr. Alfred Cox. Finally, all will recognize that the profession in Scotland owes very much to Dr. Norman Walker, the convener of the Scottish Medical Service Emergency Committee.

MEDICAL RESETTLEMENT.

WRITING on the subject of medical demobilization in the JOURNAL of December 14th, we tried to show that the central professional committees are conscious that their duty towards doctors returning from the forces to civilian practice does not end with the release of medical officers in accordance with the scheme of priority which has been drawn up. There is the further task of assisting those who have served their country to re-establish themselves in professional life, and the committees regard it as a duty and a privilege to protect the interests and promote the welfare of all doctors who leave the forces. The Government department through which the demobilization of civilian medical practitioners serving in the Navy, Army, or Air Force will be arranged is the Ministry of National Service, but that Ministry has no concern with the cognate problem of resettlement. In this respect the medical profession would appear to be worse off than other professions, trades, and industries, the return of whose members to civil employment is watched over by the Demobilization and Resettlement Department of the Ministry of Labour. The attitude of that department towards the work which lies before it is shown by the following extract from the preface to a *Guide to Employers and Employed*, which was issued a fortnight ago: "Millions of men and women have to be placed in employment. Their qualifications, like their needs, are of an extraordinarily diverse character, and the task of fitting them into the fabric of national life on a peace basis

can be satisfactorily performed only if there exists cordial co-operation between all parties concerned. Resettlement, indeed, is a national affair."

It would seem from the published announcements that the Government has accepted responsibility for the resettlement of "all classes of fighting men and all classes of war workers," and that this will be done for the most part through the Employment Exchanges and their local advisory committees, which are meant to form a link between those who want work and those who want workers. These industrial agencies, however, can scarcely be expected to afford much help to professional men. It seems probable that the Appointments Department of the Ministry of Labour may be persuaded to interest itself in certain aspects of medical resettlement, and to co-operate with the professional committees acting in concert with the various benevolent and relief funds when questions of financial aid arise.

As we announced last week in the SUPPLEMENT, the possibility of making loans or grants to returning medical officers who are in financial straits was discussed on December 17th at a conference between members of the Central Medical War Committee and representatives of the Committee of Reference, the War Emergency Fund of the Royal Medical Benevolent Fund, the Officers' Families Fund, the Professional Classes War Relief Council, and the National Relief Fund. We take it as a good omen that a representative also attended from the Appointments Department of the Ministry of Labour. Medical demobilization, as has been said, is being arranged through the Ministry of National Service, but the days of that department appear to be numbered, and resettlement does not come within its range of action.

Besides the funds mentioned above there would appear to be another source from which demobilized medical officers might seek monetary aid whilst endeavouring to re-establish themselves in practice. We refer to the Military Service (Civil Liabilities) Committee, which is empowered to make grants from public funds to meet certain financial obligations.¹ Stated briefly, such grants may be given to officers not above the rank of captain, and ordinarily resident in the United Kingdom before joining the forces, who cannot by reason of military service meet their financial obligations, and are thereby exposed to serious hardship. Such obligations are those arising in respect of rent, interest and instalments on loans and mortgages, taxes and rates, insurance premiums, school fees, and the maintenance of children; but aid is not granted for the discharge of ordinary debts. The Commissioners may require the production of full information, including receipts or other documents. It was originally stated that grants would not be made in respect of any period after the grantee ceased to belong to His Majesty's forces; but on November 12th last Dr. Addison announced on behalf of the Government that financial assistance subsequent to demobilization might be granted in accordance with a scheme based on the existing regulations of the Civil Liabilities Department. Thus aid might be given to any officer or man who was unable by reason of his military service to meet his financial obligations after demobilization, and was thereby exposed to serious hardship.

A further step taken by the Central Medical War Committee on behalf of home-coming doctors has been to urge the War Office, the Ministry of Pensions, the Local Government Board, and the Ministry of National Service to give preference to these men in distributing the large amount of medical work of a

¹ BRITISH MEDICAL JOURNAL, May 12th, 1917, p. 635.

military or national character that will soon be available throughout the country—such, for instance, as pensions examinations and the treatment of pensioners, additional work under the Education Act of 1918, attendance at venereal centres, and work in connexion with maternity and child welfare schemes. The Committee holds that the authorities concerned should without delay announce that such posts will be given to medical men returning from service, whose military experience has familiarized them with the kind of work to be done. Where these duties have been carried out by a rota of civilian doctors, the returning man should be added to the list as soon as he applies, and work should be allotted to him if he so desires. The Committee believes that these suggestions if accepted would go far to assist the returning men immediately after their release when help is most needed, and it has reason to hope that after the first few months the men who have practices to return to will find themselves almost as well off as before. The Local Medical War Committees have been invited to co-operate to the utmost in this line of action, with the same goodwill that they have shown in protecting the interests of the men on service during the past four and a half years. As a proof of their intention to help those who have risked and sacrificed so much, the local committees could use their influence with local military pensions and national service authorities to secure that doctors who have not served are replaced by those who now return, in every position where such exchange is possible. With regard to permanent appointments, it is clear that these ought not to be made by local authorities until demobilization is over—that is to say, until all medical men serving temporarily with the forces have had an opportunity of returning to civilian work. This contention gains much support from the recent acceptance by the Government of the principle that from the beginning of demobilization, and for a year after, permanent appointments in the civil service shall be reserved for ex-officers and ex-soldiers.

So far as we are aware, there is no ground for the belief, which seems to be rather widespread, that a large number of newly created whole-time medical posts will be available. It is probable that the only new appointments will be in connexion with pensions work and orthopaedic hospitals or kindred institutions, and the number of these posts is not expected to be large. But the expressed intentions of the Government with regard to maternity and child welfare, venereal diseases, and the treatment of school children and young persons under the new Education Act, foreshadow a considerable amount of part-time work which will be open to general practitioners. In gauging the capacity of the country to absorb general practitioners on their return from military service, it is well to bear in mind that the civil profession has been cut off from its supply of recruits for nearly five years, while the losses from death, ill health, and retirement from practice have gone on as usual.

NEW YEAR HONOURS.

The list of honours which it is customary to grant on New Year's day is this year incomplete; in particular, what is called the Prime Minister's list has not been issued. The *London Gazette*, however, has announced honours granted in connexion with the war to officers of the Royal Navy, the Army, the Royal Air Force, and the Indian Services, and also certain civil honours. Lieut.-General Burtchall receives the K.C.B. This distinguished officer, who entered the army in 1891 and saw service in India and during

the South African war, has held responsible positions throughout the war in France; he succeeded Sir Arthur Sloggett as Director-General Medical Services, G.H.Q., France, last June. The honour of K.C.M.G. is conferred on Surgeon Rear-Admiral George Welch, who has seen much service at home and afloat, and was recently surgeon-general of the great naval hospital at Haslar. This recognition of Sir George Welch's great services will, we know, give pleasure to all the officers of his branch. The K.B.E. is conferred on Major-General Hickson, C.B., who served with distinction in South Africa and has done most important work during the present war. The same honour is conferred on Colonel Sir Almoth Wright, C.B., F.R.S., the author of the system of anti-typhoid inoculation, who has done such remarkable pathological work in his laboratory at Boulogne throughout the war. The K.C.V.O. is conferred on Sir Anderson Critchett, Bt, Surgeon-Oculist to the King. The honour of knighthood is conferred on Dr. W. Leslie Mackenzie, who has achieved so influential a position as medical member of the Local Government Board for Scotland; on Professor G. D. Thane, who has long held the chair of anatomy at University College, London, and has been for some time principal inspector under the Cruelty to Animals Act; and on Lieut.-Colonel J. Hewat, M.B., M.P. Union of South Africa, and Assistant Director of Medical Services of the Union. The distinction of C.B. is conferred on the late Medical Administrator of the Royal Air Force, on Colonels T. P. Jones and C. A. Young, of the Army Medical Service, and on Colonel Hamilton Ballance of Norwich, and Colonel Andrew Fullerton, C.M.G., of Belfast, in recognition of their services as consulting surgeons with the military forces. A first instalment of the complete list of honours announced on New Year's day is published at page 14.

THE MEDICAL M.P.'S.

THE number of medical men elected to the new Parliament in Great Britain is, we believe, nine, as compared with five in the last Parliament. Dr. Christopher Addison and Sir Auckland Geddes have been re-elected; the new members are Major A. C. Farquharson (Leeds, N.), Dr. B. F. P. McDonald (Wallasey), Lieut.-Colonel Nathan Raw, R.A.M.C. (Liverpool, Wavertree), Captain W. E. Elliot, M.C., R.A.M.C. (S.R.), (Lanark), Major J. E. Molson, R.A.M.C. (T.) (Gainsborough). In Scotland Sir Watson Cheyne has been re-elected, and Dr. Donald Murray represents the Western Isles of Scotland, the Lews, Harris, and the Uists. Five medical members of the last Parliament will not sit in the new: Sir William Collins (Derby) and Sir Garrod Thomas (Monmouthshire, S.) have not been candidates at this election. Major W. A. Chapple (Clackmannan and Eastern Stirling), Mr. John Dillon (Mayo, E.), and Colonel A. Lynch, who at this election stood for Battersea, South, have been defeated. In Ireland seven medical men have been returned to Parliament; among these are the two university members, Sir William Whitla (Unionist) for the University of Belfast, and Sir R. Woods (Independent) for the University of Dublin. The other five all profess Sinn Féin politics, and of these two are interned, and one in America. The effective medical representation in the new Parliament would therefore appear to be 11 out of 707. Further particulars with regard to the election are given at p. 13.

THE UNIVERSITY MEMBERS.

UNIVERSITY graduates have on the whole made good use of the opportunity of voting in this election and have in this respect justified the addition which the Representation of the People Act, 1918, made to the number of university representatives in Parliament. Probably none of the registers were entirely complete, but there is reason to think that in some instances they were more complete than in others—that is to say, the proportion of those entitled to be on the register to those who actually reached it varied. This was probably due in part to dilatoriness on

the side of the university authorities and in part to the failure of graduates to take the trouble to see that their names were on the register. Taking the figures as they stand, it appears that of those entitled to vote the percentage that actually voted was 86 in the University of Wales, 82 at Oxford and in the Combined Universities in England, 79 at the Queen's University, Belfast, 68 in the University of London, 63 at Cambridge and in the Scottish Universities 47. The percentage in all the university constituencies except the Scottish, is a good deal higher than that for the country generally, which was a fraction under 50, not counting the uncontested seats. The result of the university polls has been the return of three medical members, by the re-election of Sir Watson Cheyne at the head of the poll for the Scottish Universities, and by the election of Sir Robert Woods for the University of Dublin, and of Sir William Whitla for the Queen's University, Belfast, by a very large majority over his Sinn Féin opponent. So far as politics go, the distribution is very similar to that of the parties in the counties and boroughs. Eleven of the university members elected belong to the Coalition (8 Unionists and 3 Liberals), 2 are Unionists (Dublin and Belfast), 1 is an Independent (Dublin), and 1 Sinn Féin (National University of Ireland). Proportional representation by means of the single transferable vote, which applied to those universities with more than one seat, has not had very much effect on the result. In Edinburgh the quota to secure election was 3,234, and as three of the candidates—Sir Watson Cheyne, Mr. D. M. Cowan, and Sir Henry Craik—had obtained it, it was not necessary to carry the enumeration further. In the combined English universities the system had the effect of returning Sir Martin Conway; at the first count Mr. Fisher obtained 959, and was accordingly elected. Mr. Williams and Mr. Hobson had 356 each, and Sir M. Conway 303. When Mr. Fisher's surplus votes were transferred they were found to give Sir Martin Conway 777 votes.

WAR CASUALTIES OF THE NATIONS.

ON December 26th, 1918, the French Under-Secretary of State for Pensions submitted to the Chamber a statement of French war losses up to November 1st, 1918. The total of dead, missing, and prisoners of war is 42,600 officers, 1,709,000 other ranks. The dead number 31,300 officers and 1,040,000 men, the missing 3,000 officers and 311,000 other ranks. It is somewhat difficult to make a comparison with our own losses, for the telegraphic summary contains no estimate of the percentage of missing deemed to be dead. Mr. Macpherson, in the House of Commons, mentioned that of our total of "missing" (5,353 officers, 182,284 other ranks, the remainders obtained after subtracting the known prisoners of war from the official totals) over 80,000 had been accepted as deaths for official purposes. Confining attention to the item deaths, our losses, all ranks, are 658,704, those of France 1,071,000. An unexpected feature is that we lost more officers than did the French (37,876 against 31,300), although our total casualties are many fewer. We presume the explanation to be a higher ratio of officers to other ranks on the British establishments. It does not seem possible to draw at present any useful conclusions as to the relative losses of the two nations in terms of population. *Prima facie* France has suffered much more than we have (even allowing for our greater losses in maritime war), her absolute losses being greater and sustained by a smaller population. We think this impression is almost certain to be confirmed by subsequent analysis. It must, however, be remembered that the populations of the French dependencies (colonies 44,000,000, Algeria 5,600,000, Morocco 7,000,000, Tunis 1,800,000) have, like our own daughter States, participated in the losses, and we do not know in what proportions. An unofficial report estimates the total casualties of Germany at 6,385,000. The French official report does

not account for wounded, which have been estimated by a contemporary to be about 2 millions. The total casualties of the British Empire up to November 10th were 3,049,991. In round numbers, then, we have for the British Empire 3 millions, for France 4 millions, and for Germany 6½ millions. The colonial man power of Germany available for war was small, so that the vast bulk of her losses has fallen upon the 65 million European inhabitants. Had all the French casualties been sustained by the home population, the ratio of losses would be nearly the same in France and Germany—namely, 4 million casualties in a population of 40 millions, and 6½ million casualties in a population of 65 millions. Until, however, we have more details of the German losses, it is impossible to draw conclusions. Even greater reserve is needed in discussing the unofficial estimate of 9,150,000 casualties in Russia. As to the losses of Italy, it was announced on December 31st that on all fronts 460,000 have been killed and 947,000 wounded. Amongst the killed were 16,362 officers. Belgium and Serbia have no doubt suffered heavy losses, but no statistics are available.

THE DEVIL'S MARK AND SUPERNUMERARY BREASTS AND NIPPLES.

OF the numerous medical men who have at one time or another taken an interest in supernumerary mammae and nipples (polythelia) probably few are aware that they were regarded as one of the marks that the devil inflicted on witches when they came under his sway. In a recent article on "The Devil's Mark," Mr. M. A. Murray¹ quotes from "the laws against witches and convocation," published "by authority" in 1645, the statement that "their said familiar hath some big or little Teat upon their body, wher he sucketh them; and besides their sucking, the Devil leaveth other marks upon their bodies, sometimes like a Blew-spot, or Red-spot, like a flea-biting"; and from Forbes that "on the meaner Proselytes the Devil fixes in some secret part of their bodies a Mark, as his Seal to know his own by; which is like a Flea Bite or blew spot, or sometimes resembles a little Teat, and the part so stamped doth ever after remain insensible, and doth not bleed, though never so much nipped or pricked by thrusting a Pin, Awl, or Bodkin into it." Of these two distinct marks the blew spot is probably either a pigmented mole or possibly a haemangioma, though the absence of bleeding on the somewhat heroic provocation just mentioned is rather against the second suggestion. The little teat was said to secrete milk and to give suck to familiars both human and animal, and to be sometimes cut off by the possessor before examination on suspicion of being a witch. These teats occurred in very various parts of the body, and a number of records are given of what were described as bigges or witch-paps near the anus or pudenda, but explicitly stated not to be piles. These were perhaps not all supernumerary mammae or nipples, as Mr. Murray assumes, for the perineal situation must be unusual. Thus among 105 cases of supernumerary nipples Cameron found that 95 were on the chest, 5 in the axillae, 2 on the back, one on the shoulder, and one on the outside of the thigh. In his treatise on diseases of the breast, published twenty years ago, Marmaduke Sheild gave a full account of polymastia and polythelia, and points out that some writers on teratology hardly appreciate sufficiently that some globose fatty tumours on the posterior parts of the thighs and about the buttocks have pap-like projections, and he shrewdly suspects that some of these may have been described as supernumerary mammae. Some of the witch-paps in the perineal region may have been pedunculated tumours, such as molluscum fibrosum or lipomas, or even warts.

PROFESSOR HARVEY LITTLEJOHN has resigned the office of dean of the Edinburgh medical school, and has been succeeded by Dr. Lorrain Smith, professor of pathology.

¹ *Man*, London, 1918, xviii, 148-152.

MEDICINE IN THE WAR.

A RETROSPECTIVE SKETCH.

BY

MAJOR-GENERAL SIR WILMOT HERRINGHAM,
C.B., M.D.

WHEN one looks back upon the nearly five years of war certain recollections stand out, certain experiences of disease and its treatment seem more important than others.

CEREBRO-SPINAL FEVER.

In the first winter, early in January, we saw our first cases of cerebro-spinal fever; few out there had ever seen it in the epidemic form. The British outbreaks had been few and slight, and had occurred at a distance from London. It was a new thing to find strong young men affected, and as we saw more cases the horror of the disease, its unaccountability, our powerlessness to cure it, our inability even to predict its course from day to day, affected us strongly. Sisters were usually changed every fortnight; the disease preyed on their spirits if they nursed it longer.

It was thought that the Canadians brought it with them. Their first troops landed just before Christmas, 1914. But that is doubtful. Cases arose singly from all down the whole of the front. We hardly ever saw two from the same unit, nor could any contact with a previous case be shown. The cases were most distressing to witness. They suffered greatly from pain, were usually unconscious or stupid most of their time, were fed with difficulty, and kept clean with more difficulty still, while herpes and sordes disfigured the skin and the lips. Not much less than half of them died—some quickly, others after a long illness, sometimes with a late onset of vomiting and wasting, which we learned to ascribe to blocking of the canal at the foramen of Magendie and dilatation of the ventricles. In that first winter no serum seemed to have any effect, and not only was treatment powerless but we found ourselves unable to predict even from day to day the course of the disease. A patient would seem to be doing well, and then would relapse and die. Gradually, as Ellis in France and Gordon at home differentiated the strains, serum became more efficacious, but I doubt if under the conditions of active service the mortality ever fell below 35 per cent. The first winter's epidemic was the worst.

A few cases occurred of meningococcal septicaemia, a rapidly fatal disease, marked with an abundant rash, high fever, delirium, and pains in the joints and muscles. There was no meningeal effusion, but in some instances the meningococcus was grown from the fluid in the ventricles.

THE ENTERIC FEVERS.

The next excitement was the occurrence of a few cases of enteric. There were only two field laboratories out by then. Sydney Rowland, one of the greatest losses of the war (he died in 1917 of cerebro-spinal fever), was very active in hunting for carriers. He found many, and among them a man who had been long kept in an army hospital as a carrier, had obtained his discharge, had re-enlisted, and was in active service as a regimental cook at the time. The man was rather proud of himself because he had been the subject of questions in the House of Commons.

It was not until some time in the summer of 1915 that we recognized paratyphoid A readily, but paratyphoid B was known from the first. Paratyphoid A

had hardly been seen in England before the war. The rashes are a little different from enteric, and at one time we thought we could distinguish A and B by the rash, but that opinion could not hold water. In 1918 an outbreak of gastro-enteritis was ascribed to *B. paratyphosus* B by the bacteriologists, but as the physicians insisted that the clinical symptoms made that impossible, absorption tests were undertaken, and the bacillus proved to be *B. aertryck*, which had only once before occurred in the United Kingdom, on which occasion also it had been mistaken for *paratyphosus* B at the time.

The small number and comparative mildness of the cases have been a unique feature in this war. There can be little doubt that inoculation is responsible for it. The French had a very large number of cases until they took to a better system of inoculation, but directly they did the numbers dropped. The type of our cases ruled so mild that we were tempted to ask if the character of the disease had changed. But occasional cases of the old type in uninoculated cases—I remember a French interpreter among others—showed that that was not the reason. Occasionally we would see such a case among the inoculated.

The diagnosis of these cases depended at first upon clinical symptoms, the serological test by agglutination, and cultivation. This was satisfactory until in 1916 triple inoculation—T.A.B.—began. Then the agglutination test no longer held good in the simple form. Dreyer's method, using the Oxford standards and relying only on repeated tests, became the standard method; although there have not been wanting critics both of the detail and of the theory itself, it holds the field as yet.

This work is, indeed, bound up with the great subject of immunity, and it must be remembered that what is, perhaps, the greatest pathological school in the country, that of Glasgow, holds that immunity is something which is not only distinct from any qualities, such as agglutination, that we already recognize, but does not even vary very closely with them.

NEPHRITIS.

In the spring of 1915 we began to see an amount of nephritis which, both by its rapid increase and its want of conformity with any conditions, such as weather, likely to account for it, astonished us very much. During 1915 the greatest number of cases actually occurred in July. Later years, however, showed the greatest prevalence in the autumn and winter, the worst being in the very wet weather of the last three months of 1916. These months were marked by an outbreak of suffocative bronchitis which was very fatal. We ascribed it then to influenza, though there was no great epidemic at the time. Pfeiffer's bacillus was, in fact, found in a considerable proportion of these cases. But what we felt sure of was that they led to a great increase of, in fact probably accounted for the great increase of, nephritis at the time. The influenza epidemic of 1918 confirmed this view.

We had strong suspicions, some of us, that the nephritis of France, which was by no means confined to the trenches or even to the front, was of microbic origin. The curves which it showed suggested it, and it seemed largely unaccountable otherwise. It was prevalent in German and Austrian troops and also with the French. But the Belgians had much less of it. The only parallel outbreak known in the history of military medicine was that which took place in the American civil war. The outbreak in our troops was indubitably far more widespread than anything we had ever seen in civil hospitals, but the cases were as certainly milder. Certain symptoms, such as

convulsions, had not the same serious implications that they had at home, and complete recovery took place much more frequently.

In the course of the very careful investigations that were carried on by the Nephritis Committee, Captain Maclean made a contribution to our knowledge of albuminuria in the apparently healthy on a scale (50,000 cases) and with an elaboration never before attempted. And Captain de Wesselow added to our knowledge of dropsy by showing that there was a dropsy of the blood and a dropsy of the tissues which did not necessarily vary together, though they usually did. The observations were novel, and beautifully worked out. The French directed their attention chiefly to the prognosis of the cases. Captain Keith was able to show that a lessened alkalinity of the blood was certainly not the cause of the disease, and in many cases did not occur at all. It seemed both by French and English observations that the prognosis was best tested by experiments on the excretion of certain substances such as diastase or phenolphthalein.

TRENCH FEVER.

Soon after nephritis became prominent, about May and June, 1915, we began also to recognize that curious disease which has now become well known as trench fever. Major Graham was the first to describe its clinical features. McNee, Hunt, Rankin, and Hurst followed. Unlike nephritis, this was really a disease of the trenches, but was also found frequently in the personnel of hospitals receiving cases from the front.

It was early found by McNee that it could be inoculated by means of the blood, but facilities for making experiments with volunteers were not available, and up to 1917 the bacteriologists were unable to detect any organic infecting agent. The American Research Committee joined in a committee set up by the Director General in France in that year, and an elaborate set of observations and experiments on American volunteers were carried out at a special hospital. The joint committee, besides elaborating the clinical features of the disease, were able to report on March 9th, 1918, that the disease was certainly conveyed by lice, and from that time more vigorous measures than before were taken to clean the men from these pests. Good clinical papers by Drummond, Urwick, and Perkins were published in the *Quarterly Journal of Medicine*, and the American experiments were fully described by Strong in his large monograph on the disease.

In its typical form the disease is a recurrent fever with a cycle of about five days, characterized by sudden malaise and headache, an evanescent rash of erythematous spots, an enlarged spleen, and pains whose characteristic site is in the shin bones. But the committee was able to show that the typical chart admitted of many variations, and thus to bring under one head many cases of fever which, though similar in symptoms, varied greatly in the form of their temperature curve. It may be affirmed that the disease is never fatal, but it was shown that it gives rise, chiefly through cardiac irregularity, to a considerable amount of disablement. In some cases also it lasts a very long time and may lead to invaliding.

Meanwhile a similar committee set up in England has been engaged in an important series of experiments, which show that the poison is contained in the faeces of the infected louse and can be conveyed by rubbing them into a scarified area. This committee has examined the effect of heat and various other physical conditions upon the poison and has greatly

added to our knowledge. The infecting agent is still undetermined, and no specific treatment of the complaint has yet been discovered, but it is at any rate known that a rather longer confinement to bed lessens the risk of the tachycardia which is the chief sequela.

It was in 1916 also that a curious form of febrile jaundice, due to *Spirochaeta icterohaemorrhagiae*, made its appearance in Flanders. There are several forms of jaundice with fever. That due to enteric was not infrequent, and that due to septic infection was also known. The new form had not previously been observed in Europe, though described by the Japanese. Stokes at the Ypres front and Dawson at the base made careful studies of it. It was hardly ever, if ever, found south of Arras.

POISON GAS.

It was also in the same year that the Germans first used asphyxiating gas, alleging with their usual disregard of truth in excuse for this action that the French had already employed it. The gas first used was chlorine, which was expelled under pressure and drifted across No Man's Land to the French trenches north of the Ypres salient. A day or two later our troops were similarly attacked. Chlorine was eventually replaced by phosgene.

In July, 1917, dichlorethyl sulphide, the so-called mustard gas, was first used in the northern area. And in the same year we began to have cases produced by compounds of chlorarsin, of which that most frequently used was diphenyl chlorarsin.

The action of these gases varied somewhat. Chlorine and phosgene may kill outright; if this does not happen, they cause an oedema of the lungs which, by preventing the oxygenation of the blood, produces a state of anoxaemia, or want of oxygen, under which the circulation fails. The symptoms are greatly aggravated by muscular exertion, which increases the oxygen want of the tissues. Death rarely takes place if the patient survives the third day. But recovery is often prolonged, and certain symptoms, especially sudden attacks of rapid breathing, may persist for a very long time.

Dichlorethyl sulphide vesicates the skin, sometimes very extensively, and produces large areas of erythema, or of brown pigmentation. It causes intense conjunctivitis and oedema of the eyelids, entirely preventing vision for two or three days. It scorches the mucous membrane of the upper air passages, which when severely affected comes away in the form of sloughs, leaving a very septic raw surface, which by inhalation produces septic bronchopneumonia. The latter is the chief cause of death.

Diphenyl chlorarsin was an altogether less dangerous gas. It sometimes produced intense pain at the back of the nose, and sometimes unconsciousness or stupor, but these effects were transient, and it was not believed to have caused any deaths. Some curious nervous symptoms which were observed to occur after it were probably hysterical. Arsenic in quantities that were unmistakably abnormal was recovered from the urine.

The Gas Service rapidly invented a protective cloth helmet, and later a very efficient mask in which the air was respired through a layer of absorbent chemicals. After this was issued casualties arose almost entirely among men who for some reason did not put the mask on sufficiently quickly, or took it off too soon.

We replied effectively with the same weapons, and to good purpose; the German mask was not so good as our own. In the treatment of the chlorine and phosgene cases by far the most important thing was

the supply of oxygen. This was first given by the open method through some sort of funnel. But later Dr. Haldane invented an admirable arrangement by which the oxygen under reduced pressure was led through regulating valves to a mask which fitted the face and could be tied in position. It was most valuable in saving life. Venesection was an additional method of treatment which was of undoubted value for cyanotic cases. Cases which were of an ashen-grey colour were unfit subjects for bleeding, and even under continuous oxygen administration rarely recovered.

The local effects of dichlorethyl sulphide were mitigated by anodyne inhalations of menthol and chloroform, and by gargles, washes, and wet dressings of weak soda solution. Antiseptics were combined with the anodynes in the hope of preventing the septic inflammation of the air passages.

OTHER INFECTIVE DISEASES.

Dysentery did not make its appearance in our army till the late summer of 1916. It occurred at the base, whither it was brought by troops from the East, and at about the same time at the front, where there was some evidence that it was partly due to infection in the German trenches. There was a considerable outbreak of it again in the early summer of 1918. The amoebic form was very rare, but both the Flexner and Shiga forms, and also other kindred infections were common. The type was not on the whole severe. Antidysenteric serum was found of considerable value in treatment. We had no cases of cholera. The ordinary zymotic diseases—scarlet fever, measles, German measles, mumps, and diphtheria—all occurred as epidemics at different times.

Troops from the East brought malaria with them, and some battalions were badly infected. But regular quinine treatment combined with rest restored them, and they were able to take their place in the line. The quinine was given by the mouth, according to the method recommended by Ross.

WOUNDS OF THE CHEST.

Of the greatest interest to all physicians were the wounds of the chest. Such cases are extremely rare in civil practice, and probably not one in five hundred of all the medical officers had ever seen such a case. At first the treatment was wholly expectant. Then we began to aspirate the blood after perhaps a fortnight. In 1916 Major Armstrong reported in favour of aspiration as early as the second or third day. Where feasible this was combined with oxygen replacement. At the end of that year French surgeons, especially Duval, urged a much more daring surgical treatment, and Gray, Gask, and Lockwood led the way in our armies. The first great improvement was the radical cleaning of all sucking or leaking wounds where there was obvious connexion with the open air, and removal of splintered rib, along with thorough evacuation of the contents of the pleura and closure in layers of the thoracic wound. No doubt some of the cases became septic and had to be drained, but many did not, and the gain to the patient was very great, for these cases had been very fatal. The second was the removal of large foreign bodies where accessible. It was proved that the lung could be handled with much less risk than had been suspected, and if the new operation was a little over-driven at first this tendency was soon corrected by experience, and a really great advance in surgery attained.

The medical problems were no less interesting. We found that in such cases the wounded side collapses and the diaphragm rises. The effused blood some-

times deposits all its fibrin and remains a defibrinated liquid, though at others clots of the usual kind are found. Aspiration was not followed, as we at first expected, by fresh haemorrhage, and could consequently be practised early. Apart from a severe laceration of the lung, the chief danger lay in septic infection of the haemothorax, and we became skilful in detecting the earliest signs of this condition, which needed prompt surgical interference. Unlooked-for conditions arose on the opposite or unwounded side. Septic bronchopneumonia from inhalation was not so common as we expected, but hypostatic congestion was not infrequent, and more frequent still was the massive collapse, to which, as a sequel of operations on the abdomen, Pasteur had drawn attention before the war. Bradford and Elliott made important observations upon this and other conditions occurring in the wounded chest.

Gordon Holmes was able to draw up a fine contribution to the physiology and pathology of the cerebellum from his experience of gunshot wounds of the head, and Bradford and Bashford worked out the pathology of a form of epidemic neuritis and poliomyelitis that occurred in the army.

CONVALESCENT CAMPS.

In the later years of the war men were drafted from hospitals, as soon as they were well enough, into large convalescent camps, which were for the most part admirably managed. Outdoor games and indoor recreation of all sorts were provided. The aim was to give the men a cheerful and enjoyable time, while strengthening their bodies by regular and at the same time interesting exercise. The old form of physical training was largely replaced by games and by such occupations as gardening or farm work. One convalescent camp had fifty acres of land under cultivation.

MOBILE LABORATORIES.

A novel feature of this campaign was the importation of bacteriologists and their laboratories into the front area. Their effect upon the medical work was not easy to express. Not only were they constantly employed to help in the diagnosis of fevers and infections, or in prevention of disease, as by the hunt for carriers of enteric, dysentery, and cerebro-spinal organisms; but they were constant centres of new thought and new effort. Their work was not to be measured by their publications, for they were continually engaged in helping and often stimulating the medical officers who were making fresh observations. Trench fever (McNee), cerebro-spinal fever (Ellis), spirochaetosis (Stokes) were, however, greatly elucidated in these mobile laboratories of the front area, and at the base Dreyer and, later, Perry perfected the diagnosis of enteric. Wright made observations on the resistance of the wound to infections, Martin worked at the problem of dysentery, and many other pathologists made valuable contributions to medical knowledge.

To this we must add also the constant help afforded by the Medical Research Committee at home—not only by the provision of special workers and special apparatus when needed, but also by the constant supply of all scientific publications produced by physiologists, chemists, and pathologists at home, and by their continual help through Colonel T. R. Elliott in the improvement of note-taking and records of all kinds. The field card at present in use, which was due to him and to them, is alone an immense stimulus to the medical officers and a great gain to medical science.

PREVENTIVE MEDICINE AND SANITATION.

It is difficult to do justice to the sanitary side, for their work lay outside the view of clinical men. But we could all recognize their unceasing efforts to prevent infection from excreta, to purify water, and to deliver the army from the pest of vermin. How difficult the last is no one can know who has not seen an army in the field. The dietary of the army was in the charge of this department, which was able to save great sums of money to the country by reducing the really excessive ration at first issued.

We have passed through a time which, thank God, we shall never see again, under a strain which perhaps we did not really appreciate till it was relaxed. Looking back upon it all, we can say, first, that without any doubt whatever the medical work of the army was extraordinarily well done; second, that those at any rate who were connected with hospitals learned more than they ever learned before; and, lastly, that perhaps the greatest lesson of all was that over this wide area and throughout this immense body of men there was a unity of effort and a fellowship of spirit such as we had never before imagined could exist.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON LIEUTENANT M. MEEHAN, R.N.

Surgeon Lieutenant Michael Meehan, R.N., died at the Italian Military Hospital at Venice, of pneumonia, on December 13th. He was the son of the late Mr. John Meehan of Kildysart, co. Clare, and was educated in the school of the Royal College of Surgeons, Ireland, in Dublin, taking the diplomas of L.R.C.P. and S.I. in 1912. He entered the navy as surgeon on April 11th, 1913, and at the time of his fatal illness was serving in H.M.S. *Earl of Peterborough*.

ARMY.

Died on Service.

MAJOR A. U. PARKHURST, S.A.M.C.

Major Arthur Usk Parkhurst, South African Medical Corps, died of pneumonia at Durban, Natal, on November 27th, aged 48. He was the fourth son of the late Captain Horatio John Parkhurst of Pontymoel, Monmouthshire, and was educated at Cardiff and St. Mary's Hospital, Paddington. He took the diploma of L.S.A. in 1901, and served as civil surgeon in the Boer war from the date of his qualification to the end of the war. After practising in Cape Colony and the Orange Free State, he settled at Estcourt, Natal. During the present war he went through the campaigns in German South-West Africa (where he lost an eye) and German East Africa. He was in command of No. 3 General Hospital, South Africa, for a time, and subsequently of a native hospital of 2,000 beds at Durban.

CAPTAIN J. V. DUFFY, R.A.M.C.

Captain Joseph Vincent Duffy, R.A.M.C., was reported as having died of influenza while on service at Dar es Salaam, East Africa, in the casualty list published on December 23rd, 1918. He was educated at Glasgow, and took the Scottish triple qualification in 1914, after which he was assistant to Dr. A. M. Walker of Hebburn-on-Tyne, till he took a temporary commission in the R.A.M.C. on August 12th, 1915, and was promoted to captain after a year's service. He had served in Egypt and with the 29th Division at Suvla Bay, and proceeded to France with the Division, being present at the first battle of the Somme. He served later in India and East Africa.

CAPTAIN H. R. LAWRENCE, M.C., S.A.M.C.

Captain Henry Ruthven Lawrence, M.C., South African Medical Corps, died of pneumonia in France on December 14th, 1918, aged 34. He was the only son of the late Dr. T. G. Lawrence, of George, South Africa, and was educated

at Edinburgh, where he graduated M.B. and Ch.B. in 1908, and M.D. in 1910, also taking the diploma of F.R.C.S. Ed. in 1912, and studying at Dublin and Freiburg. He was in practice at Newlands, Cape Province, South Africa, and surgeon to the Victoria Cottage Hospital at Wynburg when the war began, and he at once joined the South African Forces. He served in the campaign in German South-West Africa, and afterwards in France.

Repatriated.

Captain M. Donaldson, R.A.M.C. (temporary).

Captain E. H. Jones, R.A.M.C. (temporary).

Captain H. R. Jones, R.A.M.C. (temporary).

Captain H. A. Sandiford, R.A.M.C. (T.F.).

Lieutenant A. M. Clare, R.A.M.C. (temporary).

Lieutenant J. A. Loughbridge, R.A.M.C. (temporary).

Ireland.

THE FIRST MEMBER FOR QUEEN'S UNIVERSITY, BELFAST.

SIR WILLIAM WHITLA was elected to represent Queen's University, Belfast, in Parliament, by a majority of 1,369 on a total poll of 1,605. Sir William Whitla consented to stand in response to an invitation from a large body of graduates of all the faculties. In an address issued on December 4th he expressed his opinion that it would be the first duty of every man elected to the new Parliament to support unwaveringly the Coalition in their demands for the restitution of the devastated lands of our Allies, for indemnities for passenger ships sunk, and for all life and property sacrificed in air raids on undefended cities. He added, however, that he did not conceive it to be the duty of a university representative to consider himself a mere party politician. At the same time he expressed his conviction that the happiness and prosperity of Ireland could only be maintained as long as she remained an integral part of the empire. He added that one of the determining factors which had induced him to enter parliamentary life was the totally inadequate representation of the medical profession at Westminster. The establishment of a Ministry of Health with advisory boards, the housing of artisans, hospital reforms of a sweeping kind, and every bill devised to improve the physical condition of the people, would have his support. He dwelt on the vital importance of Government aid for original research in every department of medicine, and said that scientific research and the teaching of science must be fostered by large and judicious Government grants to the laboratories in the different universities. Finally he expressed himself in favour of local option.

After the declaration of the poll the new member paid a tribute to the good humour of his opponent and spoke in warm terms of the great services to the university of the Vice-Chancellor, Dr. Hamilton, who had courageously maintained in the face of almost universal disapproval the strong claims of Belfast to a university of her own. Sir William Whitla looked back, he said, with real pride to the fact that he had fought by the Vice-Chancellor's side for this cause, and he shared his satisfaction in seeing the university firmly established, highly successful, and sending a representative to Westminster to watch over her interests along with Ulster and the rest of Ireland. He then referred to the hard task of Mr. Finnegun, the secretary, in building up the new parliamentary register, having to trace old graduates who, after service all over the empire, had returned to spend the remainder of their lives in the home islands. The Vice-Chancellor, in the course of a speech bringing the proceedings to an end, said that Sir William Whitla had been appointed to the Chair of Materia Medica and Therapeutics shortly after his own appointment to be head of the old Queen's College. Sir William Whitla had been elected their representative at a psychological moment of extreme importance; it was an age of reconstruction, and among the matters which at a very early date would call for the attention of Parliament was the reconstruction of the educational system, from primary education up to the university; and another was the great question of the health of the people.

In connexion with Sir William Whitla's reference to the difficulty of completing the register, we may take the opportunity of pointing out that there are still several

hundreds of medical graduates of the old Queen's University and Royal University who have not registered as graduates of the new Queen's University, Belfast, and are not known to have selected the National University, Dublin. The privilege was open to them before this election and remains still open. The total number of persons on the register was 2,039, and of those 1,605 voted—about 79 per cent. The proportion would, we understand, have been higher but that a certain number of votes from the army and navy arrived too late to be counted, owing to a breakdown in the Holyhead mail.

POOR LAW MEDICAL OFFICERS' SALARIES.

The Local Government Board has addressed a letter to the Omagh Board of Guardians with regard to the salaries paid to its medical officers. It points out that the cessation of hostilities has altered the outlook, and should enable the local bodies to take a more confident view of their financial resources, and to deal with matters such as this in a liberal and generous spirit. The Board adds that there has been no change in its views, and seriously urges the guardians to arrange terms with their medical officers. The Strabane (co. Tyrone) Board of Guardians has made a scale of salaries for its medical officers, with an initial salary of £180 and triennial increments of £10 until a maximum of £250 is reached. This is the best scale that has been made in any union in Ulster, and is almost entirely due to the efforts of Dr. William Lyle, Newtownstewart. The Urlingford (co. Kilkenny) Board of Guardians has granted a similar scale to its medical officers with retrospective application.

Scotland.

HOUSING IN GLASGOW.

THE Glasgow Corporation has in hand a very large scheme of housing, and it has been decided to give immediate effect to the first part, which will provide 7,000 dwellings in various parts of the city. It is the intention to erect cottages—each dwelling being furnished with bath and scullery, and a garden plot in some districts; but in others there will be a combination of cottages and three-story tenements. In the scheme for the first district to be taken in hand the buildings will be constructed of stone, brick, and concrete blocks and concrete slabs. The intention is that the rents shall correspond with pre-war costs. The expenditure will be made as to 75 per cent. from a Government grant; the provision of the remaining 25 per cent. will involve a rate in Glasgow of 2d. in the £. The complete scheme is to provide 47,000 houses at the rate of 5,000 per annum. The scheme has only been undertaken after a thorough examination of each district, its existing house accommodation, and the social complexion of the community. Some time ago, when the central area was comparatively purified, the fatal mistake was made of erecting dwellings out of proportion to the economic resources of the people; on this occasion special attention is being given to this point. The new scheme does not touch the slum areas, which can only be purified at great cost, amounting in the case of Glasgow to a rate of 2s. 3d. in the £. It is understood, however, that the Local Government Board in Scotland is framing a scheme involving Government grants on a large scale.

England and Wales.

THE AIR RAIDS ON LONDON.

THE full official report of the London Fire Brigade upon the twenty-five air attacks on the metropolis between May, 1915, and May, 1918, is now available, and although it contains little that was not common knowledge, the particularity with which the events are set forth makes it an important historical document.

Damage to Hospitals.

One curious feature of the raids was the frequency with which hospitals were damaged, and the relative smallness of the resulting casualties. At least seventeen hospitals, not to speak of several nursing homes, suffered either by

the explosion of a bomb in the neighbourhood, or by being struck with an anti-aircraft shell, yet it is not clear from the report that a single person within the buildings was killed. St. Bartholomew's Hospital was twice damaged: in the Zeppelin raid of September 8th, 1915, 1,200 squares of glass were smashed and the roof broken, and in the first big daylight raid on June 14th, 1917, the nurses' quarters were struck. The Royal General Dispensary in Bartholomew Close was also damaged on both occasions. Another institution to have the double measure of affliction was the Bethlem Royal Hospital for the Insane; a projectile fell on the lawn on September 29th, 1917, and caused considerable havoc, and on December 18th a dormitory building of four floors suffered by an explosive bomb. The British Red Cross Society was also twice hit, once at its premises at Burlington House, and again at a covered court on Dulwich Common, when two persons were killed. One of the earliest raids—the third—injured the facade and smashed the windows of the National Hospital for the Paralysed and Epileptic, of the Queen Alexandra Hospital for Children, and of the Examination Hall of the Royal Colleges. Guy's Hospital Medical School suffered in the daylight raid of July 7th, 1917, and during the series of moonlight raids at the end of September of that year one floor of the South-Eastern Fever Hospital at New Cross was damaged by fire; an unexploded bomb dropped on a heap of coke in St. Pancras Infirmary, and anti-aircraft shells accounted for slight damage to the Poplar General Hospital, the Royal Hospital for Incurables at Putney, a private hospital in Park Lane, and four military hospitals as far apart as Shooter's Hill and Hampstead, with, apparently, injury to only one person within the buildings. On September 4th of that year a bomb exploded in the roadway between Charing Cross Hospital and the offices of the British Medical Association. The front of the hospital was badly scarred, and the front of the Medical School partially wrecked, but the damage to 429, Strand, according to the report, was limited to window breakage. This bomb killed three persons and seriously injured ten others. Two years previously, a quarter of a mile away, a single bomb from a Zeppelin had killed seventeen people outside the Lyceum Theatre; but the greatest destruction of life by a single hit took place on January 28th, 1918, at the printing works of Messrs. Odhams, in Long Acre, where the *BRITISH MEDICAL JOURNAL* was machined. Thirty-one persons were killed and ninety-five taken to hospital; the place was used as an air-raid refuge, which accounted for the high casualty list. The material damage was very extensive also, and included the destruction of many tons of paper which had been accumulated for the *JOURNAL*. The Harley Street neighbourhood seems to have enjoyed a measure of immunity, but almost the last bomb to fall on London, on Whit Sunday, fell in Park Crescent, Portland Place, and smashed the windows of many houses in the vicinity.

Ambulance Work during Air Raids.

The removal of cases of injury and shock during a bombardment from the air required a large and rapidly mobile service, far beyond anything necessary for dealing with ordinary street accidents. The existing London County Council ambulances were altogether inadequate for such an emergency, and therefore various ambulance bodies were approached by the municipal service and asked to co-operate. The military authorities placed their hospital vans at the disposal of the county, and certain voluntary organizations which have made it their business to meet trains bringing wounded from the front and to perform other public services offered their ambulances also; these bodies included the London Ambulance Column, the London Volunteer Rifles, the National Motor Volunteers, and Voluntary Aid Detachments. Cars were also sent from the Crystal Palace and Greenwich by the Royal Naval Division, and certain other Red Cross and private ambulances were provided. The result has been that on the occasion of a raid from 70 to 100 motor ambulances, as well as a large number of motor cars for sitting cases, have been distributed among the seven Council ambulance stations in the county. Each of these vehicles was usually provided only with a driver, but through the assistance of the British Red Cross Society and the Order of St. John the services of skilled first-aid attendants were secured. All these attendants were continually instructed and rehearsed in a uniform method of dealing with air-raid casualties, and were never allowed to lose touch with the system,

nowever seldom their services might actually be utilized. In addition to these resources, the Commissioner of Police placed at the call of the London service a number of ambulances which were stationed in Essex, just across the metropolitan border. On the first warning of a raid by direct cable from Scotland Yard, all the ambulances proceeded to their nearest stations, where they were numbered according to the order of arrival. All the stations were connected by direct telephone with the central office of the ambulance service at the Fire Brigade Head Quarters in Southwark Bridge Road. Here the officer in charge controlled operations by means of a wall map of London, with variously coloured and numbered pins to represent the ambulances attached to each station. When an intimation was given through any telephone—the one word “ambulance” sufficing to connect to head quarters—that bombs had been dropped and that there were casualties, a telephone message was sent to the ambulance station nearest the locality concerned, and one, two, or more ambulances were dispatched. These ambulances, after taking the cases to the hospital, went back to their stations, and their return was telephoned to head quarters. By moving the pins in accordance with the telephonic communications, complete track was kept of each ambulance. Occasionally it was necessary to send out the whole of the ambulances from one station, whereupon ambulances from more distant stations were brought up so as to reinforce the service at the critical point. The idea was to secure a concentration of ambulances in the areas attacked without denuding any area. On the occasion of one Zeppelin visit, in the absence of information as to the course of the enemy, ambulances after the first bombs had dropped were posted according to the direction of the wind, a piece of strategy justified by the event when bombs immediately fell along that route. The absence of any hitch in the arrangements from first to last was due not only to the completeness of the organization, but also to the coolness of the attendants and telephone operators. In the last air raid, on Whit Sunday, the cases taken to hospital by the ambulances numbered 78; this was largely exceeded during the raid on January 28th, when there were disasters at two air-raid shelters. The officer in charge of the ambulance service of the London County Council is a medical man of large organizing experience.

Correspondence.

RISKS AND REWARDS.

SIR,—With the existence of conditions which presuppose the not far-distant conclusion of a victorious peace, it is not unreasonable to imagine that many honours will be conferred, and that amongst the recipients at least some members of our profession will find a place. If, however, such honours are to carry with them the respect of the profession it is essential that those who advise His Majesty in such matters should have a clearer sense of proportion.

The risk and sacrifice and the valour shown should be the gauge of the reward. Some of those who have worked at home in their own neighbourhoods have gained greatly by their stability in practice, have gained by the absence of their competitors, and in certain cases they have considerably added to their incomes by their receipts for

the war work they have done. It will be a lasting scandal if such are decorated whilst those who have gone especially if they have gone voluntarily prior to the advent of compulsory service—are left unnoticed and allowed to come back maimed or damaged in health and pocket, without due recognition of their sacrifices.

Another point that has attracted attention is the small amount of recognition of service accorded to R.A.M.C. officers other than those on the Regular list. Attention was drawn to this in Parliament, on February 25th, by Mr. Roch, who stated that whilst one of every two of the regular medical officers had been decorated, only one in fifty of the 14,000 civilian doctors had been so honoured.

Mr. Macpherson's reply was to the effect that it was natural that more decorations had been given to officers R.A.M.C. than to civilian doctors, because the first went out at the very beginning of the war and were established servants at the time. But he also said that most (*sic*) of the civilian doctors were kept at home doing part time work—carrying on their own practice and also doing civil work in hospitals—so that they had not the same opportunity for decoration given to the R.A.M.C., who were established officers, and had been bearing the brunt of work at the front and in the trenches (*sic*) (BRITISH MEDICAL JOURNAL, March 16th, 1918, p. 324). Let us re-examine this statement in the light of the proportion of decorations to killed amongst regular and auxiliary officers R.A.M.C.

In your valuable JOURNAL (January 15th, 1916, pp. 93-94; January 27th, 1917, pp. 124-126; February 9th, 1918, pp. 178-180) lists of killed and died of wounds for the years 1915, 1916, and 1917 are to be found. From these it is easy to correct Mr. Macpherson's amazing statement. The number of killed and died of wounds and the number of decorations awarded amongst regulars and auxiliary officers respectively can be stated in clear and precise terms. Such a statement completely refutes Mr. Macpherson's second reason—that most of the “civilian” (that is, non-regular) doctors were doing work at home.

In these three years auxiliary R.A.M.C. officers earned 7 V.C.'s and 803 M.C.'s (see table below). V.C.'s and M.C.'s are not earned doing work at home.

In 1915:

- 2.75 rewards for valour were conferred on regular R.A.M.C. officers for each officer killed.
- 0.74 rewards for valour were conferred on auxiliary R.A.M.C. officers for each officer killed.
- 3.37 D.S.O.'s were conferred on regular R.A.M.C. officers for each officer killed.
- 0.15 D.S.O.'s were conferred on auxiliary R.A.M.C. officers for each officer killed.
- 4.87 other orders (from G.C.B. down) were conferred on regular R.A.M.C. officers for each officer killed.
- 0.18 other orders were conferred on auxiliary R.A.M.C. officers for each officer killed.

In 1916:

- 4.00 rewards for valour were conferred on regular R.A.M.C. officers for each officer killed.
- 1.80 rewards for valour were conferred on auxiliary R.A.M.C. officers for each officer killed.
- 5.77 D.S.O.'s were conferred on regular R.A.M.C. officers for each officer killed.
- 0.23 D.S.O.'s were conferred on auxiliary R.A.M.C. officers for each officer killed.
- 8.33 other orders were conferred on regular R.A.M.C. officers for each officer killed.
- 0.40 other orders were conferred on auxiliary R.A.M.C. officers for each officer killed.

Year.	Killed and Died of Wounds.			Rewards for Valour.						Orders.		Percentages to Killed and Died of Wounds.							
				V.C.				M.C. and Bar.		D.S.O. and Bar.		Rewards for Valour.				Orders.			
				Reg.		Aux.		Reg.		Aux.		Reg.		Aux.		Reg.		Aux.	
				Total.		Reg.		Aux.		Reg.		Reg.		Aux.		Reg.		Aux.	
1915*	62	8	54	0	2	22	38	27	8	39	10	0	3.7	275	74	337	15	487	18
1916†	161	9	152	0	3	36	272	52	35	75	62	0	2	400	180	577	23	835	40
1917‡	193	21	172	0	2	17	493	107	70	112	81	0	1.1	80	287	509	41	533	41

* BRITISH MEDICAL JOURNAL, January 15th, 1916, pp. 93 and 94.

† Ibid., February 9th, 1918, pp. 178-180.

‡ NOTE.—In 1914 Captain Ranken, R.A.M.C., was awarded a V.C., and in 1915 Captain Sinton, I.M.S., was awarded a V.C.

§ Ibid., January 27th, 1917, pp. 124-126.

In 1917:

- 0.80 rewards for valour were conferred on regular R.A.M.C. officers for each officer killed.
- 2.87 rewards for valour were conferred on auxiliary R.A.M.C. officers for each officer killed.
- 5.09 D.S.O.'s were conferred on regular R.A.M.C. officers for each officer killed.
- 0.41 D.S.O.'s were conferred on auxiliary R.A.M.C. officers for each officer killed.
- 5.33 other orders were conferred on regular R.A.M.C. officers for each officer killed.
- 0.41 other orders were conferred on auxiliary R.A.M.C. officers for each officer killed.

Yet all this large proportion of decorated regular R.A.M.C. officers were only carrying out the duties for which the country had paid and fitted them throughout their professional careers, and were making no sacrifices other than those their chosen career entailed, whereas the auxiliary officers were risking everything—their positions in the world, as well as their lives—in a service whose advantages and enjoyments had never previously been reaped by them; they had no promotions to look forward to, and no pensions to comfort their old age if health broke down. The disparity of recognition is startling.—I am, etc.,

Dec. 26th, 1918.

FAIRPLAY.

THE PREVENTION OF VENEREAL DISEASE.

SIR,—Many of your readers have no doubt seen the letter on this subject which appeared in the *Times* on December 23th, and the reply published on December 31st, but in view of the early demobilization of the army, the matter is of such paramount importance that I wish to put forward some reasons why the measures advocated by the gentlemen who signed the first letter are not only unlikely to be crowned with success, but may even lead to a worse condition of things.

What that letter practically advises is that any person (presumably of either sex) should be able to obtain from a chemist materials for chemical "prophylaxis" to be used before running the risk of infection. Now, in the first place, can any one guarantee that such "prophylactic" measures are infallible? I know they are not; within the last year I have had personal experience of 5 cases—3 of syphilis and 2 of gonorrhoea—all among the educated officer class, and every one of those victims assured me that he had carefully used the latest chemical "prophylactic" materials obtainable. This is to my mind sufficient to prove that a general use of such methods would induce a feeling of security from infection among those employing them which is false and not justified by results.

What, then, is likely to be the outcome? Let us suppose an experiment with three groups of, say, 1,000 men each. The first group shall be men sober, cold blooded, well instructed in the technique, skilful with their fingers, and therefore capable of using the materials supplied rightly and intelligently and with the meticulous care necessary in a laboratory experiment; allow them to use this chemical "outfit" under the best possible circumstances of housing and environment. The second group shall use the same measures under what I will describe as "ordinary working conditions"—that is, when excited, perhaps drunk, clumsy-fingered, untrained and unskilled in technique, and therefore incapable of employing the method to the best advantage; let them also attempt it in localities ranging from behind a hedge to a West End flat. The third group shall be absolutely unprotected in any way whatever. Then if all three groups were exposed to exactly the same chance of infection at the same time, it stands to reason that the first group will show very few cases of disease, the second group a great many more, and the third, quite unprotected, group the most.

I am fully convinced that the dread of the effects of gonorrhoea and syphilis is a most potent factor in keeping young persons of both sexes straight. If the fear of the risk of infection be removed and a feeling of security induced by a course of instruction in the use of prophylactic outfits, then there will be a large increase in the number of those who will incur the risk of disease. I am confirmed in this opinion from what I have heard from commanding officers at depots where

I have given lectures to several successive units as they pass through to complete their training. They have told me that the result of a lecture in which I have very graphically informed the soldiers of the results of untreated syphilis and gonorrhoea has been that the number of cases reported during the remainder of the stay of that unit decreased from 80 to 50 per cent. It has been urged against this line of argument that medical students, who might fairly be considered to be acquainted with the ordinary dangers of venereal disease, are not the most continent of mankind. This may be so, but the medical student who falls a victim is, in nine cases out of ten, only just free from university or school discipline, and in his first two or three years at a medical school studies only science anatomy, and physiology; to him, prior to his clinical work, venereal disease is only a name.

I am so convinced of the deterrent effect of dread of infection on young men because I have for the last forty years and more been intimately mixing with them as a competitor, equal, and friend in various forms of athletic competition and have served on committees for the government and furtherance of sports of all kinds. Hundreds of young men have spoken to me on this subject as they might to one of themselves. I know that a very large number of them have refrained from running the risk of infection owing to the medical information I have imparted to them as to the effects of these diseases.

If organized instruction in prophylaxis before exposure is to establish a sense of security among the young, it is pretty certain that a very much larger number will go astray. Among this large number will be a certain small proportion belonging to the first group mentioned; the much greater proportion will be in the second group; the result will be that through trusting to their chemical safeguards a certain number—probably fairly large—will become infected. Should the number of those who yield to temptation be very materially increased over the number of those who now do so under present conditions, it appears extremely probable that the number of cases of venereal disease in the community will be actually increased instead of diminished. For this reason I am of opinion that the universal recommendation and issue of prophylactic outfits to the general public may do more harm than good.

I am ready to grant that in the case of men under discipline, as in the ship or regiment, these "sanitary measures" might prove fairly efficacious if great care is taken that the men are very efficiently instructed, but the navy and the army now are melting into the civil community, and I cannot myself see any reputable physician standing up in a large meeting of civilians of either sex and instructing them in these measures, as might be done by a medical officer of a battleship or a battalion. If it is right that men be instructed in prophylactic measures, then women must also be instructed. It is useless to recommend precautions for one sex only. At what age, when, where and how, instruction is to be imparted to the female sex, I frankly decline to discuss.

The policy of the National Council which is now being carried out in close co-operation with the President of the Local Government Board is to educate, educate, educate. Let as many men and women as can be approached be fully instructed in the nature of and the mischief caused by venereal disease and the necessity for the earliest possible treatment if infected, and also for what is known as early preventive treatment as soon as possible after the risk of infection has been incurred. It is evident that "early preventive treatment," carried out under skilled supervision, is much more likely to be effectual than "pre-risk-of-infection prophylaxis" undertaken for himself by an excited or half-drunken man. Therefore, this policy seems to me more likely to meet with success than the alternative.

Arrangements are now in hand, and I hope will soon be perfected, by which the special clinics may be extended to every part of the country to cope with the problem of venereal disease on demobilization. By these it should be possible to secure the continuous treatment which is necessary for cure and also the early preventive treatment which may avoid the development of the disease.—I am, etc.,

London, W., Jan. 1st.

E. B. TURNER.

REPRESENTATION.

SIR,—Your article on representation in the JOURNAL of December 21st, 1918, was very interesting, and especially that part of it in which it is confessed that only about 50 per cent. of the medical practitioners belong to the premier voluntary medical organization. There must be something wrong when such a state of affairs exists. The officials and the members of committees—in other words, the section that now and for some years has run the British Medical Association and shaped its policy—will throw the blame on the supposed indifference of the profession. The true explanation, that it may be the policy and methods pursued that are at fault, does not seem to occur to them. The British Medical Association, having regard to prospective medico-sociological legislation, ought, as the voluntary organization of an exploited profession, to be the finest, the strongest, and the best equipped association in the kingdom. Its attitude over the Insurance Act was wrong and its policy over the proposed Ministry of Health Bill was and is not good. The political rights of men serving overseas were not respected. And it is to be presumed that the Association approves of the emasculated Health Bill now before the public. The Association has done little, with the rise in prices, to agitate for and secure more adequate remuneration for the profession, civilian or military. Compare its record in this direction with that of any organization of the workers. Some of its representatives sit on Government Committees, and when the reports are not published are content to utter only a feeble, if any, protest.

This is not the way to secure the respect and confidence of all sections of the profession, and I suggest the following standards:

1. That all officials of the British Medical Association should pledge themselves not to accept any "honour" or any permanent official post.
2. That all members of the British Medical Association committees should pledge themselves in the same way, and especially that those on the parliamentary or politico-medical committees should give a pledge not to be themselves candidates for Parliament.
3. That the policy of the Association should be independent, should not be subservient to Government departments, and should be truly representative of all sections of the profession.

The objection, hitherto upheld, to the "uninstructed vote" is an example of how things ought not to be done. To talk of an uninstructed vote in connexion with the general electorate may be allowable, but as regards the votes of an intellectual profession it savours of insult.

Surely we can now in the new year begin with a clean slate. There is a spirit abroad that all is not well in the Association. Not only must the policy of the Association be clear, unequivocal, individually disinterested, and impartial, but it must be recognized as such. Let all those whose policy—say, from the time of the Insurance Act downwards—has brought the Association to its present position of half strength and diminishing confidence explain the position frankly to their constituents, and ask to be replaced by others in whom more confidence may be shown. A united professional front is worth many individual sacrifices, and while grateful to each individual for invaluable services rendered, and regretting their departure from the work of the Association, the younger generation of the medical profession are realizing that such things must be, and that a break with the policy of the past must be made sometime, somewhere, and soon.

My last letter, some time ago on the subject of the policy of the Association regarding the Ministry of Health Bill, nearly provoked disciplinary measures, and as I am still in khaki I beg to be allowed to rest till demobilization under the *nom de plume* of

December 21st, 1918.

HAMILCAR.

THE HARDSHIPS OF THE BUSY PRACTITIONER.

SIR,—I have recently received the circular concerning the distribution of the new Exchequer Insurance Grants (SUPPLEMENT, December 14th, 1918, p. 91), and I have not yet ceased to wonder what the man did who pays income tax on £1,001 a year to be left out in the cold, when the man who pays on £999 is a participator in the grants. No thinking man will deny that the practitioner with less

than £500 a year must have been badly hit owing to increased cost of living and greater working expense during war time, especially if he had many dependants, and nobody grudges him a little extra. We of the larger practices have, in common with our less busy brethren, stood as a guarantee of the good faith of our patients' claims on the Government during war time, and up to the present we have had certificates to sign by the hundred. The principal of these are: army and navy pay slips, discharged soldiers' and sailors' life certificates, mothers' pensions for loss of son, and widow's for loss of husband; certificates as to the number of children, as to inability to earn full or partial livelihood, and many others.

We have had a general increase of sickness owing to the large proportion of women on our panels, and no matter how overworked we were, we felt in duty bound to attend the children of these, well knowing that there were too few doctors in this populous district to do the work; in fact, to put it briefly, the big practice man, if he is not altogether a physical wreck from overwork, has led a dog's life for the past three years, and that not from his own choice, but from a patriotic feeling that if he was not serving his country in the field, he was doing his best at home; he did so, too, without any appreciable increase in his own income; in fact, in many cases like my own the income of 1918 would not quite reach the level of the income of 1914.

We had to contend with an increase in cost of living and in working expenses, a big increase in the income tax, and a drop in our notification fees from 2s. 6d. to 1s. (I think the only instance during the war of a reduction of fees to any particular class—one might call it a war bonus reversed).

We have not sought any reward for our extra work. I think most of us would prefer that we had worked hard for our country without wanting a reward. But the manner of the distribution has made some of us wonder if perhaps, after all, it might not have been better to keep our health and strength and be the man with an income of £999 a year.—I am, etc.,

G. C. JOHNSTON ACRES, M.R.C.S., L.R.C.P.

Clapham Junction, S.W., Dec. 25th, 1918.

MEDICAL RESETTLEMENT.

SIR,—Medical officers will be pleased to read in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of December 28th, 1918, that a letter expressing the opinion that doctors returning from military service should be given preferential treatment in the large amount of medical work of a military or national character that will be available throughout the country, has been sent to the War Office, Ministry of Pensions, the Ministry of National Service, and the Local Government Board.

May I suggest that invalided and discharged medical officers, who are unable to do or to continue general practice owing to their various disabilities, should be given the option of receiving appointments which have arisen during this war?

The advantage thereby gained would be twofold—namely, the more able-bodied medical officer can return to his civil practice, and the disabled, as far as practicable, could still be of service from a medical point of view in a less strenuous way.

I should like to know what is to be done in the way of procuring for the disabled medical officer some suitable work.—I am, etc.,

N. H. LINZEE.

Hampton Wick, Dec. 29th, 1918.

Late Captain R.A.M.C. (S.R.).

MEDICAL DEMOBILIZATION.

SIR,—Dr. F. C. Eve, in his letter, criticizes the proposal of the Government to call up medical students as soon as qualified, on the ground that the hospitals will be crippled on account of lack of house-physicians and house-surgeons. There are a large number of young doctors, both in the army and navy, who on account of the war have not held such appointments, since they considered the requirements of the services to be more important than those of the civilian hospitals, however advantageous it might have been to them to have availed themselves of the experience that such appointments afford. These officers on demobilization will be anxious to hold these resident appointments.

Many of them, on account of the nature of the duties on which they have been employed, have seen little of medicine or surgery during the last four years.

Surely these officers should have a prior claim for resident hospital appointments to men who, although they have been doing most excellent work, have had, it must be remembered, far better opportunities, in many cases, of gaining professional experience.—I am, etc.,

W. HERBERT BUTCHER,

Shrewsbury, Dec. 29th, 1918.

Temp. Surgeon Lieutenant R.N.

PUBLIC MEDICAL APPOINTMENTS AND SALARIES.

SIR,—The circular letter sent by the British Medical Association to the clerks of town councils and other bodies, advocating an advance in salaries of about one-third above what they were before the war, appears to indicate an appreciation on the part of the Association of the unsatisfactory conditions attaching to public medical appointments in the matter of payments. The communication will, or will not, be considered by some committee of the local body concerned, and the misfortune is that there is neither any means of ensuring its adequate consideration, nor any compelling power behind it to get its recommendation adopted.

The same thing largely applies to a circular letter that has just been sent out by the Local Government Board recommending the adoption by local councils for local government officials of the war bonus scheme that is now in operation for civil servants. Though the adoption of this recommendation would go some way to correct the gross inequality and unfairness of the arrangements as to war bonus that have been locally made, and though its justice and propriety is vouched for by the President of the Local Government Board, it is only in some instances that a free admission of these facts is to be anticipated. In many others they will be combated, and if the officials sit still and wait, rather than make themselves critical and objectionable to the committees, they will get nothing, or at best have the question of war bonus and long overdue increase of salary mixed up, with a view to advantage being taken of the occasion to grant the least possible advance to the official.

In fact, this settlement of official salaries, and of increasing salaries and payment for extra and special services, will continue to be matter of injustice and dissatisfaction so long as the power remains one-sided, as it now is, the local council or committee being able to give or to withhold according as caprice or prejudice may dictate. In such case the advantage will go to the sycophant, and to him who has carefully avoided any action in the course of his duties that would tell against the interest of members of the committee, rather than to the person of independence. The official up to the present time has had no appeal against the decision of the local body. All that one has been able hitherto to get from the Local Government Board has been a statement to the effect that they will readily give their required sanction to any proposition of the local council to increase the salary when they receive such a proposition, and that is all.

The position plainly points to the necessity for the provision of some independent means of determining and regularizing all salaries, and powers to this end ought certainly to be embodied in the first Act of Parliament that proposes to regulate the public medical services, because the feeling of injustice occasioned in the minds of medical officials, and the destruction of goodwill and public spirit occasioned thereby, has its consequence in great damage and prejudice to public work.—I am, etc.,

Cheltenham, Dec. 21st, 1918.

J. H. GARRETT.

FILARIASIS AMONG AUSTRALIAN TROOPS.

SIR,—In the BRITISH MEDICAL JOURNAL of October 12th, 1918, p. 405, there is an article by Captain Rimmer, R.A.M.C., describing four cases of filariasis amongst Australian troops. As these four men came from southern Queensland this is not surprising to those acquainted with the conditions there. In 1909 and 1910 four thousand cases, Europeans, admitted to the Brisbane Hospital for all conditions, were examined for filaria. They were examined at the rate of 200 consecutive admissions at a time with short intervals between each series. The final result

showed 11.5 per cent. of filariasis in the 4,000. A similar examination of 112 children under 12 years of age, all inmates of the Children's Hospital at the same time for various conditions, showed 5 per cent. of filariasis. Practically none of these patients showed symptoms of filariasis nor did they appear to suffer any inconvenience from the parasite in the blood. They were not aware of the condition, and it could not have been discovered except by routine examination.

The above facts indicate that about 10 per cent. of the population of southern Queensland have filaria in the blood. Symptoms of the affection are, however, comparatively rare. Cases of filarial lymphangitis, chyluria, and filarial adenitis are occasionally seen. Cases of hydrocele, lymphocele, and deep intramuscular abscess of obscure origin are notably prevalent, but filaria can rarely be found in the blood in these cases. Elephantiasis is unknown.

Captain Rimmer is to be congratulated on calling attention to these cases, as it is probable that a large percentage of Queensland troops are infected, and when symptoms develop the cause would possibly be overlooked by those not acquainted with the conditions in Queensland. In two of Captain Rimmer's cases the men were able to give the information that they had suffered from filaria, but the majority would not be able to do this.

Various methods of treatment have been tried in Queensland to abolish the parasite from the blood, but none have as yet been proved to be of definite value. It is found that the parasite disappears from the blood in about four years if the case is not reinfected. The most successful prophylactic treatment is the systematic use of mosquito nets.—I am, etc.,

D. G. CROLL, Colonel A.A.M.C.

Obituary.

LEONARD GEORGE GUTHRIE, M.D. OXON., F.R.C.P.,
Senior Physician Paddington Green Children's Hospital and Hospital
for Paralysis and Epilepsy, Maida Vale.

By the death of Dr. Leonard Guthrie, which took place on December 24th, a few hours after he had met with a severe accident, the medical profession has sustained a grievous loss.

Leonard George Guthrie, the second son of the late Mr. Thomas Anstey Guthrie, was born in Kensington on February 7th, 1858, and passed the early years of his preliminary education at King's College School. He then went up to Oxford, where he entered Magdalen College. Here he devoted himself to the study of classics, thus laying the sure foundation for those intellectual attainments for which he was so well known. He graduated in arts in 1880, and then became a student of St. Bartholomew's Hospital, having decided to adopt the profession of medicine. While engaged in the study of medicine he gave early promise of that independence of mind which was his chief characteristic throughout life. In 1888 he took the degree of M.B., B.Ch. at Oxford, and in 1893 proceeded to the degree of M.D. Previous to this, however, he had obtained the diplomas of the College of Surgeons and of the Society of Apothecaries. His first appointment was that of house-surgeon to the Paddington Green Children's Hospital, and this event directed his attention to the study of disease in early life, a subject with which he was closely connected for the whole of his professional career. In due course he was elected to the staff of the hospital, and at the time of his death was its senior physician. At about the same time Guthrie joined the staff of the Hospital for Epilepsy and Paralysis, Maida Vale, and with this institution also he was actively connected up to the end.

Guthrie's close association with hospitals devoted to neurology and diseases of children afforded him ample opportunities for the study of these conditions, and of them he availed himself to the fullest extent. His pen was constantly employed, and he published much valuable work, distinguished by deep knowledge, sound reasoning, and an excellent literary style. Among the more important of his contributions may be mentioned *Interstitial Nephritis in Childhood*, 1897, *Functional Nervous Disorders in Childhood*, 1907, the Harveian Lecture in 1910 on hydrocephalus, articles on night terrors in *Allbutt's*

System of Medicine, and on cyclic albuminuria, aphasia, apoplexy, hemiplegia, and emesis in the *Index of Treatment* in 1907, as well as many papers dealing with the same subjects which appeared in the *Transactions* of the medical and clinical societies.

Guthrie had always been an enthusiastic student of the history of medicine, and when in 1907 he was appointed FitzPatrick Lecturer at the Royal College of Physicians of London—he had been elected a Fellow in 1900—he chose as his subjects "Contributions to the study of precocity in children" and the "History of neurology." The design of these lectures gave his wide culture full scope, and his treatment of the subject was justly appreciated by those who were acquainted with them. Unfortunately the lectures were never published in book form, but this omission, it is hoped, will now be rectified. He was also the author of a charming work entitled *Hospital Sketches*, by "Galen," in which humour and pathos were happily blended.

During the later years of his life Guthrie was much occupied in public work in connexion with the medical profession. On him, as secretary to the committee appointed by the College of Physicians for the revision of the *Nomenclature of Diseases*, fell the heavy work associated with that task. But he was eminently qualified for the duty, which required not only wide medical knowledge, but also a classical training, and he acquitted himself in a manner highly satisfactory to all. When the war broke out his services were freely and unostentatiously given to the great cause. Besides his attendance upon neurological cases, he was one of those selected to examine medical men under the Ministry of National Service, and later he became a member of the Board of Medical Assessors for the final examination of those who appealed from their grading. He was an active member of the Council of the Royal Medical Benevolent Fund, and this year was elected a member of the Council of the College of Physicians. Quite recently he had been appointed an examiner in Medicine at Oxford.

The foregoing account will serve to show the great professional activities of Leonard Guthrie. But the personal element must now be considered, and that is a subject upon which it is good to dwell. For Leonard Guthrie was possessed of qualities of mind and character that endeared him to all with whom he came in contact, and his loss will be mourned to-day by a large number of people. He was ever ready to sacrifice himself in the service of others, and many will remember his unfailing kindness in all cases where he could be of service, and his modesty in denying that he had done anything beyond his common duty. In all the public and private relations in which he stood to society in general, consideration for others, and a fine sense of duty were his invariable rules. Nor must it be supposed that he won his high character by yielding to the views and opinions of others, for he was most tenacious of opinions he deemed to be just, and no inducement, however cunningly devised, could cause him to swerve a hair's breadth from the path he believed to be right. He had a lofty conception of the position of a physician, and throughout his busy life there was no occasion on which he allowed private advantage to come between him and the high ideals to which he aspired.

A tribute must also be paid to the qualities of his mind. In the best sense of the term, Guthrie was an example of the cultured physician. Though learned in a high degree, that learning was never acquired for the purpose of parade, but simply because he worshipped it for its own sake. If he loved rather the quiet of the mediaeval cloisters, he was not wanting in his appreciation of the more virile attainments of succeeding ages. With many of the questions debated at the present time he had no sympathy, but if he expressed his disapprobation, it was untinged with rancour, and left no sting. His attitude to the world and its ways permitted him to stand aside and be amused where others would have preferred to rush in and take part in the fray. He was an accomplished writer, and his style had considerable literary merit, but he was a stern critic of his own work, and on this account he was apt to undervalue his effort after it was accomplished. His loss will be severely felt, for, in a way, Leonard Guthrie occupied a unique place in the profession. We shall miss sorely his genial friendship, his well stored mind, and his keen sense of humour, which made all men the better who could claim his companionship.

The funeral took place at Kensal Green Cemetery on Saturday, December 28th, 1918, and was attended by many friends and representatives of the various bodies with which Dr. Guthrie was connected, such as the Royal College of Physicians, the Paddington Green Children's Hospital, and the Hospital for Epilepsy and Paralysis at Maida Vale.

Professor Sir WILLIAM OSLER writes: Leonard Guthrie's death will be a personal loss to many of us. Beneath the carapace of convention his friends knew a warm-hearted, loving man, with cultured tastes, and a keen interest in many aspects of his profession. It was also a special pleasure to meet him at the Children's Clinical Club, or the sections of the Royal Society of Medicine. The history of medicine formed a bond of sympathy between us, and in the organization of the section in this subject at the Royal Society of Medicine his co-operation was invaluable. Oxford and his old college Magdalen had given him a certain mental fastidiousness, which limited his literary output, but what he wrote was always of a high quality. His untimely death is sad loss and a real sorrow.

His colleague, Dr. G. A. SUTHERLAND, writes: At the moment when the sense of loss caused by the sudden death of Dr. Leonard Guthrie is so recent one naturally thinks more about the man than the work he has accomplished. No better place could be found for observing his many-sidedness than the Paddington Green Children's Hospital, with which he had over thirty years' official connexion. While many have enjoyed reading his luminous writings on the psychology of childhood it was even more valuable to see him at work with his patients. A bond of sympathy and understanding was soon established, and under its influence the child unfolded and yielded up those secrets which others had failed to obtain. His advice and help were always at the service of his colleagues, and his suggestions were given with his characteristic diffidence. Although of an extremely sensitive nature, he could not be moved to anger by anything which reflected on himself alone, but if the reflection were on the hospital or a member of the staff his righteous indignation was aroused, and he would spare no effort to right the wrong. When the peaceful waters of hospital life became troubled, Dr. Guthrie was always the one called in by common consent to restore the peace. He loved young people and old things. One might safely and freely criticize Dr. Guthrie's opinions, medical or otherwise, but to pass an adverse opinion on Oxford University or the Royal College of Physicians before him was to enter on dangerous ground. His papers on professional subjects were not published until he had carefully looked up the medical references to the subject for the previous few centuries and given due credit to earlier writers. He was a great medical society man, and although for many years a listener only, as the years passed he took a more and more active part in the discussions. Many a dull evening at a medical society has been suddenly changed to brightness when Dr. Guthrie took the floor and delighted his audience with his telling phrases and illuminating thoughts. The charm and brilliancy of his writings have appealed to many, but perhaps those features were more striking in his conversation when he was with intimate friends. Those who knew him well were astonished at the multiplicity of his interests, each of which had a share in the development of his mind and character. He was always learning and always developing, and the possibilities of his future seemed even greater than the records of his past, when the end came.

ROBERT ALEXANDER LUNDIE, M.A.,
B.Sc., M.B., C.M. (Edin.),
EDINBURGH.

Dr. ROBERT ALEXANDER LUNDIE, whose death, following an accident in the streets of Edinburgh, occurred on December 18th, was a man of brilliant attainments not limited to the field of medicine. He was born at Birkenhead on May 13th, 1855, and was the elder son of the Rev. Dr. Lundie, an eminent minister of the English Presbyterian Church and a distinguished citizen of Liverpool. His mother, who is still alive at the advanced age of 91, was a daughter (one of twenty-two children) of Mr. Charles Cowan of Westerlea.

Robert Lundie began his student career in Edinburgh in

1871, and for the ten years he spent there it ought, perhaps, to be recorded that he supported himself all the time. He took a prominent place in all his classes and graduated M.A. with first class honours in mathematics in 1875. He then proceeded to science, where he did equally well, gaining medals in chemistry and botany and winning the Falconer Fellowship in geology. After taking the B.Sc. in 1877, he spent a year as a student in New College (Free Church of Scotland) and numbered amongst his friends there the late Professor Henry Drummond and Sir George Adam Smith; but he did not proceed further with Divinity and turned to medicine, graduating M.B., C.M. in 1880. Dr. Lundie acted as house-physician to Dr. Brackenridge and as house surgeon to Professor Chiene in the Edinburgh Royal Infirmary in the months following his graduation, and he settled in private practice in that city in 1881, although his career was at this time threatened by a serious attack of typhoid fever, which led him to make two voyages to the Cape. In 1884 he married and went to live in Grange Road, where he continued all the rest of his life. In the same year (1884) he obtained the Fellowship of the Royal College of Surgeons of Edinburgh. He devoted himself specially to ophthalmology and acted some years as private assistant to Dr. Argyll Robertson; but he did not pursue that subject as a specialty, preferring to act as a general practitioner, although he would undoubtedly have made a mark as a specialist on the eye. He kept himself remarkably up to date in respect of all advances in medicine. Thus he independently discovered that thyroid extract given by the mouth was as efficacious as if administered by injection, and he successfully operated on a ruptured gastric ulcer in 1894 (*Trans. Edin. Med.-Chir. Soc.*, vol. xiv, p. 57, 1894-5). Dr. Lundie acted for twenty-two years as assistant medical officer to the Longmore Hospital for Incurables. He wrote many of the medical articles for *Chambers's Encyclopaedia* and for the *Temple Dictionary of the Bible*; and his special knowledge of the natural sciences was revealed in two papers read before the Edinburgh Royal Society, one upon the passage of water and other liquids through india-rubber (1897) and the other (with Dr. Knott) on the interesting phenomenon known as dew-bows (1898).

He acted for several years as Treasurer and had been President of the Edinburgh Branch of the British Medical Association, and was one of the representatives of the Edinburgh and Leith Division on the Representative Body.

Since the beginning of the war Dr. Lundie, like so many of his professional brethren, had been overworked, for he freely offered himself to take duty for men who were away on military service, held various posts connected with the war and just two months before his own death he had the grief of losing his only son (captain, acting major, in the Royal Engineers), who was shot by a sniper.

Dr. Lundie was a delightful companion, for out of a remarkably full mind he could bring forth treasures new and old, and a talk with him was always thought-provoking and inspiring; whilst in his purely professional work his thoroughness and his devotion were almost a proverb among his brethren. He combined in a very remarkable way a wide general knowledge with a painstaking and brilliantly complete acquaintance with distinctively medical and surgical matters; and he was always ready to give of his best experience to the younger men who were devoting themselves to special research and inquiry.

GEORGE GRAYSON STOPFORD STOPFORD-TAYLOR,
M.D. DUBHAM, M.R.C.S.,

Honorary Physician to the Liverpool Skin Hospital.

We regret to have to announce the death of Dr. Stopford-Taylor, which took place on December 1st. A victim to influenza, he courageously continued his professional duties almost to the last, when fatal pneumonia supervened. In the loss of Dr. Stopford-Taylor, Liverpool and district has lost the doyen of dermatologists. His clinical experience was unrivalled, as he was the oldest exponent of the specialty in the city. A Liverpool man, son of the late Dr. Stopford Taylor, medical officer of health of Liverpool, Dr. George Stopford-Taylor qualified in 1874 from the

Liverpool School of Medicine. He went into general practice, where he succeeded by his indomitable perseverance and his personal characteristics in building up a lucrative practice. At the same time he seized the opportunity through being attached to the Liverpool Hospital for Cancer and Skin Diseases of laying that foundation of his knowledge of dermatology to which ultimately he devoted his whole energies from 1890 onwards. Severing his connexion with the Cancer Hospital, Dr. Stopford-Taylor, with Dr. R. W. MacKenna and the late Dr. William Carter, founded the Liverpool Skin Hospital. Here he found full scope for his ideas, and had the satisfaction of realizing them to the utmost.

Dr. Stopford-Taylor published during his career many papers on skin diseases, especially in connexion with newer methods of treatment which he was among the first to put into use. As a clinician Dr. Stopford-Taylor was unrivalled, and by reason of his experience of general practice there was no danger on his part of looking at a skin disease with the eye of the specialist only. Pictorial display appealed to him, and great was his satisfaction when he could show the living counterpart of a painting of a rare skin affection. He often showed skin cases at the clinical evenings of the Liverpool Medical Institution, and latterly many wax models.

As a medical man Dr. Stopford-Taylor inspired confidence in his patients, and earned the respect of his professional brethren. A memorial service was held at the Church for the Blind on Thursday, December 5th, and many friends, patients, and representatives of institutions with which the deceased was connected were present to pay their last respect and testify to the esteem in which he was held. Dr. Stopford Taylor was twice married; by his first wife he had three sons—Major John Stopford-Taylor, Major Richard Stopford Taylor, R.A.M.C., and Mr. Herbert Stopford Taylor, and one daughter, Mrs. Edward Atherton. These and other immediate relatives were present at the memorial service. He leaves a widow behind, and a pleasant memory of a well-spent life, full of usefulness to all with whom he was brought into contact.

DR. JOHN Z. TRUTER, who died at the Abbey Hospital, Woburn, on December 15th, 1918, was born in South Africa, and after studying medicine in the University of Edinburgh obtained the M.B., Ch.B. degrees in 1913. He then came to London, and held resident posts at St. Peter's Hospital and the Chelsea Hospital for Women, where he showed exceptional ability. He applied himself to genito-urinary surgery and gynaecology with such success that at the end of his time many of his chiefs were glad to avail themselves of his opinion and assistance in difficult cases. In 1914 he was in France at a Red Cross hospital, and during the past two years he was attached to the Duchess of Bedford's Woburn Military Hospital. On the clinical side he showed admirable judgement and accuracy of diagnosis, while his surgical work was marked by unusual technical dexterity, coolness, and precision. Mr. J. W. Thomson Walker writes: "Truter's early death will come as a shock to his many friends. Big, strong, handsome, courageous, open-hearted, and generous, a keen and able worker, and a favourite with every one, a wide field lay open before him, and success seemed assured. I hoped great things for Truter in the field of practical surgery. He was by far the ablest horse-surgeon I have had, and his personality the most attractive. Nothing came amiss to him, and everything was worth doing and well done. His work was so thorough and even, and his judgement so balanced that he ranged, seemingly without effort, alongside those of us older and more experienced than himself. It was Truter's intention, I believe, to return to South Africa to practise surgery, and he had prepared himself carefully in all the branches of surgery to this end. His passing must undoubtedly be a loss to the South African profession, as it is to all of us who came in contact with him here."

THE Société Médicale des Hôpitaux de Paris at a recent meeting elected Sir Thomas Barlow, Sir Errand Dawson, Sir William Leishman, Sir Dyce Duckworth, and Sir Almoth Wright honorary members. The same distinction was conferred on Dr. Simon Flexner of the Rockefeller Institute for Medical Research, and several other American physicians.

Universities and Colleges.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

The following candidates have been approved at the examinations indicated:

- FINAL M.B.—Part I. *Materia Medica and Therapeutics, Jurisprudence and Hygiene, Pathology*: L. Abrahamson, R. Doran, S. L. Feldman, W. J. Pemberton, M. Nu-ock, J. M. B. de Wet, W. de V. Scholtz, J. P. de Villiers, Loris L. Graham, J. B. Mavure, Elsie A. Burns. *Materia Medica and Therapeutics, Jurisprudence and Hygiene Only*: P. I. Levitt. *Pathology (in Completion)*: G. FitzM. Keatinge, S. R. Hill.
- FINAL M.B., B.Ch., B.A.O.—Part II. *Medicine*: W. P. Elford, T. Mu-ock Bentley, R. B. N. Smartt, H. S. Colli s, W. A. Shannon, B. Fitzl. Haythornthwaite, C. J. Quinlan, J. E. Jam-son, F. J. Dy-oke, Ethel M. Luce, J. T. Myhardt. *Surgery*: J. H. Coolican, W. P. Elford, W. Sweetman, L. J. P. Murphy, W. A. Shannon, A. J. Vorster, E. R. Tivy, K. MacG. Greer, Ethel M. Luce, E. J. Lyndon. *Midwifery*: V. M. Synce, H. B. Van der Merwe, Gertrude Rice, J. C. J. Callanan, A. L. Wilson, J. T. Myhardt, A. H. Thompson, L. J. P. Murphy, W. J. Hogan, R. W. Shaw, W. A. Byrn, J. S. Quin, G. Fitzl. Keatinge, S. J. Laverty, T. J. R. Warren, C. J. Quinlan.
- D.P.H.—Part I. *Bacteriology, Pathology, Chemistry, Physics, and Meteorology*: J. Spares, A. H. B. Pearce, J. W. Biggar, H. S. Sugars. *Part II. Sanitary Engineering, Vital Statistics and Public Health, Hygiene and Epidemiology*: J. W. Biggar, E. O. Bowie, J. Bockett, A. K. Cosgrave, A. H. B. Pearce.

UNIVERSITY OF EDINBURGH.

The following degrees were conferred on December 18th, 1918:

- M.D.—A. G. Brydon, T. Crisp, C. E. Dukes, T. A. MacGibbon, J. R. Stott, W. A. Young.
- M.B., B.Ch.—R. F. Boltman, H. C. Brayshaw, E. B. Brown, D. H. Cameron, E. Chonglop, A. Chen Yu Chow, J. M. M. Calf, K. C. Crobie, H. N. Daniel, C. G. L. van Dyk, W. Y. Eccott, E. C. Fahmy, E. F. Gordon, N. D. P. de V. Graff, G. H. Gunn, G. J. Hughes, L. W. Jones, N. W. Johnston, E. G. Joseph, T. W. Lowden, Anne L. MacDonald, A. L. M'Ilwaine (with second class honours), J. K. Mitchell, G. Nicholson, I. Platzky, J. J. Wessels.

UNIVERSITY OF ST. ANDREWS.

The following candidates have been approved at the examinations indicated:

- THIRD M.B., Ch.B.—*Materia Medica*: Christin E. Little, M. M. Stewart. *Pathology*: C. B. Dyson.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The following candidates have been approved at the examination indicated:

- PRIMARY FELLOWSHIP EXAMINATION.—H. V. Exner, J. F. Sheppard, A. J. Snyman.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examination indicated:

- FINAL EXAMINATION.—S. H. Berwitz, M. Bradley, T. F. Broderick, J. J. Coburn, D. L. Crowe, L. M. Levinton, P. J. Metting, T. H. K. MacLaughlin, H. L. Mooney, R. H. Newman, M. F. O'Brien, V. R. O'Connor, Helen G. Kea, J. C. Rowan.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have been approved in the subjects indicated:

- SURGERY.—T. A. Jordan, J. E. Nicole, S. H. Robinson, G. E. Spero, C. de B. Thomson.
- MEDICINE.—T. A. Jordan, F. W. Kemp, J. E. Nicole.
- FORENSIC MEDICINE.—W. S. Hughes, J. Kershaw, S. Robinson.
- MIDWIFERY.—J. Kershaw.

* Section I.

† Section II.

The diploma of the society has been granted to Messrs. T. A. Jordan, J. E. Nicole, and S. Robinson.

The Services.

RELEASE OF TERRITORIAL OFFICERS.

The Army Council has issued an Army Order applying provisions, similar to those already made for the release from the colours of men of the Territorial Force, to officers of the same force; and providing for the gradual disembodiment of such Territorial officers as the exigencies of the service permit. Officers so disembodied will be liable, at any time before the general demobilization of the Territorial Force, to be re-embodied, either individually or collectively, in case of urgent military necessity. As this power will not be exercised except in the event of military emergency it will not interfere with the resettlement of officers in civilian life, nor is it intended to interfere with their emigration or repatriation overseas. Officers disembodied in accordance with this Army Order must notify permanent changes of address to the Military Secretary, War Office. The order does not make specific reference to Territorial medical officers.

Medical News.

DR. H. E. BOWER, of Stretton, near Warrington, has been appointed a commissioner of the peace for the county of Chester.

At the meeting of the Röntgen Society on Tuesday next at 8.15 p.m., at the Royal Society of Arts, Dr. H. S. Allen will read a paper on electrical changes produced by light.

A COURSE in hospital administration for the diploma in public health will be given at the Western Hospital, Fulham, by the medical superintendent, Dr. R. M. Bruce, beginning on January 7th. Further particulars can be obtained from the clerk to the Metropolitan Asylums Board.

THE next meeting of the Research Committee of the American Red Cross in France will be held in Paris on January 10th and 11th. There will be a conference of surgery at the base on January 10th, and on the following day discussions on administrative work at the base and medical problems of entrainment and embarkation.

COLONEL J. G. ADAMI, M.D., F.R.S., A.D.M.S., Canadian Army Medical Corps, will open a discussion on the prevention and arrest of venereal disease in the army at a meeting of the Royal Institute of Public Health (37, Russell Square) on Wednesday next, at 4 p.m. Lord Sydenham will be in the chair, and among those who will take part in the discussion are Dr. Mary Scharlieb, several medical officers of the United States Army, and Lieut.-Colonel L. W. Harrison, D.S.O., R.A.M.C.

SIR ROBERT ARMSTRONG-JONES will give his next course of Gresham Lectures on Physic at Gresham College, Basinghall Street, E.C., on January 14th, 15th, 16th, and 17th at 6 p.m. on each day. The first lecture will deal with heredity, the second with alcohol, the third with venereal diseases, and the fourth with the recent epidemic of influenza and measures taken to combat its spread.

BURBERRY'S (Haymarket, London, S.W.1) are holding a sale during January and February of weatherproof topcoats, suits, and gowns, which will be sold at specially low prices, comparable to those before the war. They also intend to sell a number of service weatherproofs and other articles of naval and military equipment.

THE Medical Officers of Schools Association, being desirous of compiling a register of medical men and women whose professional services are in any way employed in connexion with the hygienic care of schools or colleges, asks such members of the profession to send particulars to Dr. G. Chaikin, honorary secretary, 11, Chandos Street, W.1.

THE Abdulla Cigarette Company (173, New Bond Street, London) has again prepared a wall almanac and has offered 20,000 for sale for the benefit of the British Red Cross Society at the price of 1s. 4d. a copy, out of which 1s. will be paid to the fund of the society. The almanac is again well illustrated by pictures, some in black and white and others in colours, for every month in the year, and has a frontispiece in colours by Mr. Charles E. Brock R.I.

A SOCIETY of orthopaedic surgery has recently been formed in France. M. Krimisson, professor of clinical surgery and diseases of children in the University of Paris, is the president, and MM. Auguste Broca, professor of operative surgery in the Paris faculty, and Dérué, associate professor in the University of Bordeaux, are vice-presidents. The secretary-general is M. Nové-Jusserand, associate professor in the Lyons faculty. The first annual meeting will be held in Paris in October, 1919, at the same time as the French Congress of Surgery. The subjects proposed for discussion are amputations in relation to subsequent prostheses, spondylitis in the war, and the treatment of false joints.

ACUTE poliomyelitis was made notifiable in 1912, and polio-encephalitis was included in the county of London. The Local Government Board has now made an order making not only polio-encephalitis everywhere notifiable, but also acute lethargic encephalitis, the obscure disease which occurred on a small scale in epidemic form in the spring of 1918. The illness, it is noted, presented the characters of an acute general disease associated with progressive languor, apathy, and drowsiness passing into lethargy, muscular weakness passing into complete disablement, and various paralyses of muscles chiefly of the eyes and face.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitology*, Westrand, London; telephone, 2651, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

SEVERE VOMITING PRODUCED BY CAFFEIN CITRATE.

DR. R. T. WILLIAMSON (Manchester) writes: Can any reader tell us why caffeine citrate occasionally produces very severe vomiting? I have used this drug very frequently, and usually no unpleasant symptoms have been produced, but occasionally it appears to cause most severe vomiting.

LETTERS, NOTES, ETC.

THE TREATMENT OF SOME COMMON FEMALE AILMENTS.

Erratum.

In Dr. Frederick McCann's address under the above heading, which was published in the last issue of the JOURNAL, the word "dil." was, through inadvertence, omitted after "Acidi sulphurici" in the prescription for an ergot mixture printed at p. 706. The prescription should read as follows:

R. Ext. ergotae liq. ....	...	...	m xx-xxx
Acidi sulphurici dil. ....	...	...	m x
Magnesi sulphatis ....	...	...	gr. xx
Aq. cinnamomi ....	...	...	5j
T.i.d.			

POTABLE SPIRITS.

DR. C. R. WILLANS (Bournemouth) writes: Could anything be done to arrange for a supply of whisky and brandy for the use of invalids? General practitioners are constantly being asked for certificates to obtain these commodities, and the trouble taken is of no avail because the dealers have none to sell. It is a great deprivation for old people to have to do without their stimulant. The restrictions which have been and still are in force have been very useful and one hopes that they will be continued, but it would seem to be a fairly simple matter to arrange for a certain amount to be released from bond and ear-marked for the special purposes of invalids and old people and to be obtained by medical certificate.

COLLOIDAL COPPER AND INTRAMINE IN CANCER.

DR. A. V. LÉCHE (Aixbridge) writes: Working on the lines of reduction and oxidation, with its consequent inhibitory action on lowly organized tissues, as Mr. J. E. R. McDonagh has been demonstrating, I have been treating a few cases of cancer with colloid suspensions. Though my experience is small, I have not had the success others have had with colloidal copper alone. I then tried it with intramine, and in a case of cancer of the pharynx (aged 58) rapidly extending down to the oesophagus and larynx, found more encouragement. The patient was seen by the staffs of two hospitals in April, 1918, and given a month to live. I gave one injection of mixed intramine in the buttock, and a week later colloidal copper. The next week intramine and the week following colloidal copper, and so on. He improved for three months; he then said he was not so well, and I am now giving one weekly injection of intramine and then two weeks following colloidal manganese (mixed solution). On December 16th, 1918, he was better, swallowed better, spoke better, had weathered an acute attack of influenza, and walks one and a half miles each week to my house. So, after eight months' treatment, he is able to walk about, and has not died the awful death of slow starvation and asphyxia. It seems to me this treatment is most suitable for diffuse growths, as with large existing tumours colloidal copper seemed to have no appreciable effect.

A MEDICAL FRONT LINE CLUB.

A BATTALION M.O. writes: With reference to the suggestion by Colonel Donegan in the BRITISH MEDICAL JOURNAL of December 7th, 1918, for the formation of a club for medical

officers, with the title of the "Front Line Club," I am sure the majority of medical officers serving with battalions will strongly deprecate any such proposal. To those of us who have lived in the line with combatant officers the idea of suggesting that a line of demarcation be drawn between M.O.'s in accordance with their relative positions to the enemy in the field is unfair and savours of egotism. Surely those of our profession who have served in casualty clearing stations and in base hospitals, and, knowing as they do, the devastating effects of bombs, have carried on night after night with their work under the very trying conditions of uncertainty occasioned by the irregular visitations of the night bombers—surely they are deserving of credit and not of exclusion. Each M.O. has had his work to do during these past four years of war, some under hard and dangerous conditions, others surrounded by many home comforts, but all to one great end, and the R.M.O., while having had none of the latter and a fair share of the former, will not wish to demonstrate that his service has been more meritorious than that of those who have not been fortunate enough to live with, and to know one's work appreciated by, the fighting man. Comparisons amongst combatants as to their positions in the forward area are invidious; amongst non-combatants, and especially amongst physicians and surgeons in the army, whose energies cover such a vast sphere of labour, such comparisons are ridiculous.

TO BRIGHTEN MEDICINE.

A CORRESPONDENT writes to protest against what he is pleased to call the deplorable dullness of the reports of medical and scientific societies which appear in the medical journals. By way of enlivening matters he proposes that a leaf be taken from the notebook of the political reporter, and he gives the following example to illustrate his meaning:

Dr. X. said that he wished to discuss the production of variation in the physiological activity of *Bacillus ignotus* by the use of Prussian blue. (Hear, hear.) *Bacillus ignotus* could be trained to grow in neutral broth containing Prussian blue. (Cheers.) By gradually increasing the percentage of the stain the organisms would develop readily. (Prolonged applause.) In most cases the organism at the same time underwent a profound change (sensation) in its physiological activity towards sugars (a laugh), and towards polyhydric alcohols. (Loud laughter.) Acid was only produced, he said, in certain of these from which the organism originally produced both acid and gas. (Inter-ruption.) The power of gas formation was permanently lost. (Cries of dissent.) In one instance this change in physiological activity was accompanied by profound morphological and cultural changes. (Disturbance.) The resultant organism was quite different to that from which it had been produced. (Uproar.) The change brought about by Prussian blue indicated a connexion between the *magnificus* and *ignotus* groups and the possibility of development of organisms of the one into those of the other. (Here the meeting broke up in disorder.)

BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

At a meeting of the Committee of the Belgian Doctors' and Pharmacists' Relief Fund, held on December 23rd, the honorary secretary, Dr. Squire Sprigge, reported that he had received a visit from Dr. Théo. Huyberechts, a member of the Belgian Doctors' and Pharmacists' Committee in Brussels, who expressed the gratitude of that committee to the Fund, testifying that such help had been "beyond words valuable."

As just sufficient money remained in hand it was decided to send to Belgium the full mensuality of £830 for next month. The following subscriptions have been received:

	£	s.	d.
Dr. Alfred Cox (monthly)	1	1	0
Lieut.-Colonel Fremantle, R.A.M.C.	10	0	0
American Red Cross Commission for Belgium (monthly)	200	0	0
Dr. D. Douglas-Crawford	5	5	0

The appointments of certifying factory surgeons at Rochdale (Lancs) and Shrewsbury (Shropshire) are vacant.

The appointment of medical referee under the Workmen's Compensation Act, 1906, for the Alfreton, Buxton, Chapel-en-le-Frith, and New Mills, and Chesterfield County Courts in Circuit No. 19 is vacant. Applications to the Private Secretary, Home Office, by January 15th.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	6	0
Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postae restant* letters addressed either in initials or numbers.

Observations ON ADMINISTRATION OF ARSENIC IN SYPHILIS.

BY
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THE educated portion of all civilized nations is becoming more and more alive to the enormous influence which syphilis will have on the future well-being of the nation and to the increase in the dissemination of this previously world-wide disease that may follow the great war. Measures of prevention are now freely discussed in places where a short time ago the mere mention of venereal disease would have caused consternation. With this awakening there will come a demand for the sole effective means of prevention, which consist in the sterilization by treatment of infective cases, so that they no longer constitute foci for the dissemination of their disease.

It has been observed that syphilis is the most protean of diseases. Its manifestations in individual cases are as varied as humanity itself, and it is scarcely to be expected that the general practitioner will have time or opportunity thoroughly to familiarize himself with all of them. There will always be room and work for the specialist, but the general practitioner should be able to recognize the more obvious cases, which are those really dangerous to the public, and by the method introduced by Ravaut and Thibierge, and referred to here, he can treat the majority of them far more satisfactorily than most of the other ailments with which he has to deal.

One of the chief objections appears to be that raised by a London doctor in a recent letter to the *BRITISH MEDICAL JOURNAL*, in which he complained that the technical apparatus required was elaborate, expensive, and troublesome to manipulate. In the majority of clinics this is quite correct, for they still use the gravity apparatus, and dissolve the arsenic preparations in large quantities of distilled water, and have also a considerable amount of normal saline solution in the alternate tube for the purpose of indicating that the needle has penetrated the vein, and for washing out the portion of the dose below the Y tube at the completion of administration. This method of administration necessitates a special still and much sterilization each day of the apparatus used, as well as possession of the equipment itself.

Many efforts are being made to simplify the administration of the organic arsenic preparations. They have been enclosed in capsules by enterprising manufacturing chemists, in order that the dose might be swallowed or introduced into the rectum. Unfortunately the drug is too unstable for this method, and appears to lose its efficiency when so administered. To obtain therapeutic effect it is necessary to introduce it directly into the circulation or mediately by intramuscular injection.

Persistent attempts have been made, by combining the drug with various local anaesthetics, to avoid the intense pain and disability which is caused by even the blandest of the new organic arsenic preparations when injected into muscle or subcutaneous tissue. Susceptibility to pain varies so greatly that, while some individuals do not appear to suffer much, the majority complain very bitterly of the pain caused by these injections, and it is not likely that this method will become at all popular among patients; and this consideration will probably have more weight in private practice than in the army.

The view sounds reasonable and may yet be proved, that, owing to slower and more continuous absorption, the therapeutic effects of arsenic introduced into muscle tissue are greater than when introduced directly into the circulation, but in so far as therapeutic effect is indicated by the rapid involution of external syphilitic lesions, and the reversal or inhibition of the Bordet Wassermann reaction, the intravenous method is equally effective.

The publication of a translation of Professor Thibierge's work on the treatment of syphilis¹ led us to adopt his

method of administration of concentrated solutions in this clinic, where it has now been in use for three months, and we think that a description of the technique used here and the results obtained would be of interest, more particularly to the general practitioner, who requires simplicity of administration without loss of effect.

The apparatus required is to be found in the most modest surgery, for it consists of a hypodermic syringe and two or three small basins, although, where a large number of injections have to be given, several other articles may be used to increase speed and efficiency.

We have found that, by the method about to be described, two officers and two orderlies can give from fifty to seventy intravenous injections of arsenic and the same number of intramuscular injections of mercury in less than an hour.

After trial of a number of hypodermic syringes, the one we have found most useful is a cheap two-piece glass syringe made by Maw of London. The points of special advantage are a comparatively long barrel, of moderate diameter, so that, although graduated to 2 c.cm., it will really hold nearly 4 c.cm., while its narrow diameter enables the needle to be introduced at an acute angle with the skin. The plunger fits accurately and may be entirely withdrawn. There are no metal contraptions at either top or bottom. The tapering connexion has no shoulder, and fits well, so that there is no leaking, and the needle, when in place, is firm, but can be easily removed. The needle is rather larger than the ordinary hypodermic needle and has a shorter point, so that, while a vein is easily picked up, there is less danger of a through-and-through penetration.

Method of Administration.

A burette (30 c.cm.) containing the sterile water is held upright by a stand, and is continued at the bottom by a short piece of rubber tubing, terminating in a glass nozzle and closed by a pinchcock. One of the orderlies flames the outside of an ampoule of the drug with a small alcohol lamp, files off the tapering end, runs in 2 c.cm. of water from the burette, and inserts a piece of small glass tubing with rubber connexion at one end and a few filaments of wool at the constriction near the centre, such as is supplied with the galy ampoules. The ampoule is then gently shaken. Solution is complete in a few seconds. The ampoule is placed upright in a small board which has had sufficient half-inch holes drilled in it to hold the required number of ampoules.

The officer, having picked a syringe out of a small basin of alcohol with dressing forceps, washes it in sterile saline solution, aspirates the contents of the ampoule by means of the rubber connexion to the glass tube, picks out one of several needles which are boiling in a container beside him, and adjusts it to the syringe. Meanwhile the other orderly has prepared the patient by fastening a light rubber tube round the upper arm and painting below the bend of the elbow with iodine. The patient seats himself at a narrow table on the opposite side from the officer, his arm resting on the table. The officer, steadying the skin with his left hand, introduces the needle into a vein, slightly withdraws the plunger to make certain that the needle is in the lumen of the vein, and removing the tourniquet, completes the injection. The table should be so placed that the light falls freely on it. The needle puncture is so small that no bleeding takes place and no cotton or collodion is required to seal it.

The officer, having completed the injection, washes needle and syringe, and returns the syringe to the alcohol and the needle to the boiling water. He picks out a second syringe and proceeds as before, using the syringes alternately.

It would be quite feasible, of course, for one medical man to do all this himself, but he would require several minutes to make each injection.

During the past three months 2,859 intravenous injections have been given in the above manner in this clinic. There has not been a single case of thrombosis of the vein. There have been no early reactions of an anaphylactic character such as we used to have fairly frequently when injecting large quantities of distilled water which was not above suspicion. There have been no reactions, late or early, which could be attributed to the method of administration. Owing to the small size of the needle the pain of introduction is less than where the larger needle required by the gravity apparatus is used, and much smaller veins

may be successfully entered. On three or four occasions the vein has been missed or completely penetrated, and solution has been injected into the surrounding tissue. This accident causes a good deal of pain, swelling, and disability, which, however, pass off in a few days without abscess formation or permanent induration.

A microscopic examination of blood withdrawn from the vein into the syringe containing the arsenic solution shows the blood cells apparently perfectly normal even some hours after withdrawal.

The drugs used by us have been novarsenobillon and novarsenobenzol, which have been supplied in ampoules containing 0.6 gram and 0.9 gram. The smaller doses when required have been obtained by splitting one or more of these, when dissolved, between two patients.

We have used distilled water in making the solutions, but only a very small quantity is required, and it is pointed out by Thibierge that ordinary sterilized water free from gross impurities may be used in this small amount with impunity.

Results.

It has seemed to us that the administration of arsenic in concentrated solution is more effective than when it is given diluted. Our records for July, the first month in which all the patients being discharged had had a full course of treatment by the above method, show that 141 patients were discharged from hospital as out-patients during the month with their external lesions soundly healed, and that the average duration of their stay in hospital was sixteen days, a considerably shorter period than formerly. These patients return for treatment as out-patients at weekly intervals until the full course is completed.

Distribution of Cases.

Cases with primary lesions only—71.

Average stay in hospital ...	16 days
Discharged in less than 10 days ...	16 cases
Discharged in 10 to 20 days ...	32 "
Discharged in 20 to 30 days ...	18 "
Discharged in over 30 days ...	5 "

Cases with secondary lesions—49.

Average stay in hospital ...	14 days
Discharged in less than 10 days ...	13 cases
Discharged in 10 to 20 days ...	24 "
Discharged in 20 to 30 days ...	6 "
Discharged in over 30 days ...	6 "

Cases with recurrent lesions—13.

Average stay in hospital ...	24 days
Discharged in less than 10 days ...	1 case
Discharged in 10 to 20 days ...	8 cases
Discharged in 20 to 30 days ...	3 "
Discharged in over 30 days ...	1 case

Cases with positive Wassermann reaction, but without infective lesions on admission—8.

Average stay in hospital ...	11 days
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The records for August show that 166 syphilis cases were discharged as out patients during the month, with an average stay in hospital of 16 days. They were distributed as follows:

Cases with primary lesions only—92.

Average stay in hospital ...	16 days
Discharged in less than 10 days ...	32 cases
Discharged in 10 to 20 days ...	40 "
Discharged in 20 to 30 days ...	12 "
Discharged in over 30 days... ..	8 "

Cases with secondary lesions—31.

Average stay in hospital ...	15 days
Discharged in less than 10 days ...	19 cases
Discharged in 10 to 20 days ...	8 "
Discharged in 20 to 30 days ...	3 "
Discharged in over 30 days... ..	1 case

Cases with recurrent lesions—35.

Average stay in hospital ...	17 days
Discharged in less than 10 days ...	19 cases
Discharged in 10 to 20 days ...	10 "
Discharged in 20 to 30 days ...	4 "
Discharged in over 30 days... ..	2 "

Cases with positive Wassermann reaction, but without infective lesions on admission—8.

Average stay in hospital ...	4 days
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The total number of patients admitted to the clinic from May 26th, 1918, to the end of August was 540, of whom 430 were diagnosed as syphilis and placed on treatment; 257 of these have not completed their routine course. Of the remainder, 35 have completed a course and are awaiting a Wassermann test. The Wassermann test result has been received in 138 cases, of which 127 are negative and 11 are positive.

Examination of the 11 cases with positive reactions on completion of course shows that 9 had generalized syphilis prior to

coming to this clinic, while of the other two, one had his primary chancre for five weeks before admission to hospital.

The Wassermann tests were made by No. 1 Canadian General Laboratory, Witley.

It has been shown that intravenous arsenic as ordinarily administered is eliminated pretty rapidly by the kidneys, so that a large part of the dose is disposed of in this way within a few hours after administration. The diuretic effect of the distilled water and saline solution introduced into the circulation along with the arsenic may have something to do with this, and it is reasonable to suppose that when the dose is given in concentrated form it is less rapidly eliminated. We have not had the means to estimate quantitatively the arsenic in the urine, and have been unable to verify this supposition.

When arsenic is administered by a gravity apparatus it is customary, in large clinics at any rate, to dissolve the doses for several patients at once, and, as the solution is run out, more is continuously added during the period of an hour or longer, according to the number of patients. It is clear that in this way some portion of the drug will be exposed to the air for a considerable time, as the tube is never allowed to entirely empty itself, and some degree of oxidation is bound to occur.

Where solution is effected in the ampoule immediately after it is opened and the contents injected within a minute or less, oxidation prior to administration must be very slight indeed. In default of support from estimation of the rapidity of arsenic excretion, it must be admitted that the number of cases is too few and the period of observation too short to establish the truth of the supposition that concentrated solutions of arsenic are more effectual than dilute, but there is sufficient evidence to show that by their use syphilitic lesions undergo very rapid involution, and that their administration in suitable dosage is perfectly safe.

ADDENDUM.

Since this paper was written, early in September, 1918, the use of the method of administration there described has been continued.

In September 111 syphilis out-patients were discharged, average stay in hospital 13.5 days; in October 139, after an average stay in hospital of 16 days; in November 97, after an average stay in hospital of 14 days.

Slightly under 1,000 intravenous injections have been given in each month, and up to date there has been no case of thrombosis or other contraindication to the use of concentrated solutions. There has been an entire absence of early anaphylactic reactions.

The course of treatment referred to in the paper is the minimum course as laid down by the War Office, and consists of 3.9 grams neosalvarsan divided into seven doses and given at weekly intervals, the first two doses being 0.45 gram and the remainder 0.6 gram. An intramuscular injection of mercury gr.1 is given each week in addition to the neosalvarsan.

These amounts are for the ordinary otherwise healthy man only, and are modified as considered necessary, when full doses are contraindicated. Even if the Wassermann test is negative at the end of such a course, as it usually is, it is realized that this is an insufficient amount of early intensive treatment, and since the termination of active hostilities all except the early primary cases receive more. All the men are advised to carry on taking mercury by the mouth, and to have another Bordet-Wassermann test, and further advice at the end of three to six months.

One of the difficulties experienced by the clinic has been that of ensuring the attendance of soldiers discharged as out-patients for the remainder of their hospital treatment. Many of them are from units stationed in camps at a distance from the hospital, and the necessary transport was not available in sufficient quantity. To overcome this a system has been arranged whereby an officer and sub-staff with their equipment, which is carried in a small box, visit the two outlying camps on one half-day, in each, a week. Out-patients are paraded in one of the huts to receive treatment.

The largest number treated in one half-day so far is 100, but with a better system of organizing parades beforehand this number could easily be increased. Where any large number of cases are reporting for treatment in this manner another officer familiar with the disease should be in attendance for the purpose of examining certain of the

men prior to their receiving treatment. Urine tests when required should be carried out beforehand.

Some such system of peripatetic clinics might well be utilized by the public health authorities when they deal with the control of syphilis among the civilian population, although in this country there are probably few places not within reach of one of the larger towns, where it is presumed treatment clinics already exist.

REFERENCE.

¹ *Syphilis and the Army*. London, 1917. University of London Press. (6s. net.)

ON THE AGGLUTINATIVE AND OPSONIC ACTION

OF CERTAIN CHEMICAL SUBSTANCES ON THE RED BLOOD CORPUSCLES, THE RELATION BETWEEN THIS ARTIFICIAL AGGLUTINATION AND AGGLUTINATION BY SERUM, AND THE BEARING OF THESE OBSERVATIONS ON THE AGGLUTINATION AND PHAGOCYTOSIS OF PATHOGENIC ORGANISMS.

BY

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IN the BRITISH MEDICAL JOURNAL of December 8th, 1917, I drew attention to the association that exists between the haemagglutinative and the opsonic actions of a foreign serum on washed red blood cells in animals and in the human subject. Although the agglutination of the individual red cells, *inter se*, seems frequently to be a preliminary step in the ingestion of these cells by leucocytes, a mutual adhesiveness between red cells and leucocytes is also necessary before actual ingestion can occur. The process of haemagglutination is thus one phase in a larger erythro-leucocyte reaction by which the phagocytosis of red blood cells is brought about.

Not only does the opsonization (or preparation of red cells for ingestion by leucocytes) depend on preliminary action by a serum agglutinative to the particular red cells to be ingested, not only does the number of red cells ingested vary quantitatively with the haemagglutinative capacity of the serum used, but actual ingestion does not occur unless a mutual adhesiveness between phagocytes and red cells is also present.

A careful analysis of this process of so-called haemagglutination under controlled conditions will probably throw further light on an allied problem—namely, the conditions under which pathogenic organisms are prepared for ingestion by phagocytes, and to what extent, if any, previous agglutination by humoral agency is a necessary step in the phagocytosis of bacteria and other organisms. It is on these grounds that the haemagglutinin reaction becomes so important.

The Leucotoxicity of Certain Serums.

In the BRITISH MEDICAL JOURNAL of December 8th, 1917, I referred to the fact that a serum may be haemagglutinative to the red cells and yet be toxic to the leucocytes in any given specimen of blood. Under these conditions ingestion does not occur.

This leucotoxic action can be demonstrated by incubating a drop of the whole blood in a closed cell with the foreign serum. If the serum be toxic the leucocytes do not emigrate from the clot on to the slide, or any cells that do leave the clot fail to adhere to the slide and undergo cytotoxicity. No ingestion of red cells takes place. Thus, in order to obtain successful phagocytosis of red cells the erythro-leucocyte-serum combination must be favourable.

The mechanism by which the successful phagocytosis of bacteria is brought about very probably depends on a right combination of analogous factors.

The Erythro-leucocyte-serum Reaction is not Wholly a Specific Reaction.

Having thus seen that the phagocytosis of red cells by leucocytes depends on a delicately balanced humoro-cellular reaction which affects serum, red cells, and leucocytes, we now proceed to inquire whether this erythro-leucocyte-serum reaction is specific—that is to say,

whether, in order to bring about the ingestion of the red cells in any given case, the serum which induces the preliminary haemagglutination must be native to the leucocytes, or whether any foreign serum which agglutinates red cells will have an equal opsonic effect. In other words, to what extent can we vary the different factors concerned in the reaction?

While undoubtedly the best result is obtained by employing a native sero-leucocyte combination acting on foreign red cells, experiment shows that it is not absolutely necessary for ingestion that the serum and the leucocytes should be provided by the same individual. In some cases a serum may produce agglutination of the red cells, but fail to bring about ingestion by foreign leucocytes.

The three factors concerned in erythro-phagocytosis may be present but not in right combination or in right proportion. In other cases the very marked specific nature of the reaction suggests that the haemagglutinins have actually been shed into the serum by the leucocytes.

Provided that the foreign serum is not toxic to the leucocytes, then any serum which agglutinates the red cells may prepare them for ingestion up to a certain point, but for complete ingestion on a rapid and large scale, in which almost every leucocyte contains a number of red cells, a further stage of the erythro-leucocyte reaction, or an agglutination of the red cells to the leucocytes, must also be present. This is shown by the following experiments:

1. C. J. B. washed red cells previously agglutinated by a foreign serum, and subsequently washed free of that serum in normal saline, were then incubated with C. J. B. whole blood. Under these conditions slight ingestion of the red cells so treated by C. J. B. native leucocytes occasionally took place.

2. Sheep's washed red cells which had undergone a preliminary agglutination by a non-toxic foreign serum were ingested by C. J. B. leucocytes in larger numbers than sheep's red cells not so previously agglutinated.

The Condition of the Red Cells Influences Ingestion: The Leucotoxicity of Broken up Red Cells.

While the sero-leucocyte combination has a great influence on the phagocytosis of red cells, the condition of the red cells themselves is also very important. Erythrocytes seem to be more resistant to the phagocytic action of their own native leucocytes than to leucocytes from another individual.

The leucocytes of some individuals seem to have a greater capacity for ingesting sheep's washed red cells than the leucocytes of other persons. Certain animal erythrocytes—for instance, sheep's red cells—are more easily and rapidly ingested by human leucocytes than foreign human erythrocytes from another individual.

The relative capacity of resistance to ingestion by the red cells of different human individuals also varies under different conditions. Thus my own (C. J. B.) red cells, previously washed with normal saline, were ground up in a mortar, a suspension of these disintegrated red cells was made in normal saline. The centrifuged sediment was found to consist of broken up portions of red cells which still retained their haemoglobin constituent. This corpuscular debris formed a yellowish-grey deposit when centrifuged, and on this bottom layer an upper layer of still intact red cells rested if the titration had not been too complete.

A drop of this suspension of red cell debris in saline was then incubated in a closed cell with two drops of whole C. J. B. blood. The following striking effect was observed. After incubation the floor of the cell was found coated with the red cell debris. This adhered very closely to the glass and was not removed by a gentle stream of saline. This red cell debris also had a marked toxic effect on the leucocytes. Very little emigration of leucocytes from the clot took place in the areas occupied by the debris, while in other free areas a few leucocytes which did emigrate and adhere to the slide showed disintegration changes and gave no iodophil reaction. Thus while whole red cells are not toxic to native leucocytes, broken up red cells are highly toxic to those cells.

But if, instead of employing native red cells, broken up foreign red cells from another individual are incubated with the same C. J. B. whole blood, then the toxic effect on the leucocytes is much less and considerable emigration may occur. This is the case even if the blood serum of the individual supplying the red cells is agglutinative to the red cells of the person supplying the leucocytes.

Again, broken up sheep's red cells incubated with C. J. B. leucocytes are less toxic than broken up foreign human red cells.

What is the meaning of the leucotoxic effect of disintegrated red cells on native leucocytes when the same red cells in the unbroken condition are quite innocuous?

We shall see later, when dealing with the artificial agglutination of red cells by chemical reagents, that it is possible to reduce this toxicity of the disintegrated cells by treating the red cell debris with certain reagents such as liquid paraffin or gum solution before incubation. It would seem, therefore, that while the intact living red cell has no injurious effect on the leucocytes, it still contains a substance or substances which may be poisonous to these cells if ingested in sufficient quantity. Experiment further shows that this substance is not haemoglobin. It may be that the haemagglutinative process acting on the stroma of the red corpuscle brings about a leakage of this endocorporeal poison. If this is present in the plasma in moderate amount it stimulates an adhesive reaction on the part of the leucocyte, and promotes phagocytosis, but if it is liberated in larger amounts, as in the case of the broken up red cells, it then poisons the leucocytes.

We have now seen that the mechanism by which the red cells are prepared for ingestion by leucocytes consists in its most effective form of an agglutinative serum in combination with native leucocytes acting on foreign red cells—that is, red cells which contain the agglutinin necessary to react with the haemagglutinin in the foreign serum. We also found that we can replace the native serum by a foreign agglutinating serum (provided this be non-toxic to the leucocytes), and still obtain a certain amount of phagocytosis of the foreign red cells, and even under certain conditions the ingestion of native red cells by their own leucocytes if these red cells have been previously agglutinated.

The Agglutination of Red Cells by Chemical Reagents.

The question now arises whether it is possible to do away with the agglutinating serum altogether, substituting for it some chemical reagent, and still obtain the ingestion of the red cells. I have tested a considerable number of substances in order to clear up this point. The reagents which have so far given the best results have been liquid paraffin and a 5 per cent. solution of gum acacia in normal saline.

We must first describe the effect of these reagents on the leucocytes when incubated with whole blood. The floor and sides of a closed cell are painted over with a thin layer of liquid paraffin. Two or more drops of blood are then allowed to fall directly from the finger into the cell. After incubation the clot is washed away in a gentle stream of saline and a film of living leucocytes obtained on the slide. These show pseudopodial activity, and, when tested with 1 per cent. iodine solution (see BRITISH MEDICAL JOURNAL, February 3rd, 1917), give a very marked iodophil reaction, in which also the mauve-coloured drop of iodophil substance remains attached to the cell, and seems less prone to exude into the surrounding medium than in leucocytes incubated without paraffin. Some of the cells also contain droplets of the paraffin in the cell protoplasm. Thus the coating of paraffin seems to protect the phagocytes from disintegration and stimulates them to increased activity. The well known fact that coating with paraffin the walls of a vessel into which blood has been drawn delays coagulation may thus depend, not only on the smooth surface, but also on the influence of the paraffin in preventing the rapid exudation of ferments from the leucocytes into the surrounding plasma. The fact that the iodophil substance tends to be retained in the cell in the presence of liquid paraffin is of interest in this connexion; 5 per cent. gum solution in normal saline also has the same effect on leucocytes when incubated with them.

Liquid paraffin when used as a dressing for wounds seems to favour phagocytosis and to promote the separation of necrotic tissue. An examination of the pus cells recovered from gauze soaked in 5 per cent. gum solution when used as a dressing for wounds also shows a high percentage of living phagocytes. The test of vitality is the retention by the cells of an irregular instead of a circular outline, a capacity to elaborate iodophil substances as shown by the iodine test, and power to ingest pigment

particles, or under appropriate conditions red blood cells on incubation.

The Agglutinating Action of Gum Solution and Liquid Paraffin on the Red Cells.

If to a large drop of 5 per cent. gum acacia solution in normal saline a smaller drop of a suspension of washed human red cells in normal saline be added on a slide and the two mixed together, the red cells will agglutinate in a few minutes. It is impossible to distinguish under the microscope this artificial agglutination from the clumping produced by an agglutinating serum.

When washed red cells are thoroughly mixed in liquid paraffin, on the other hand, although discrete little masses of cells are formed, this effect seems to be due to the mechanical action of the reagent in enclosing and isolating groups of cells, rather than to the production of an increased mutual stickiness in the cells themselves.

When sheep's washed red cells are mixed with liquid paraffin the cell masses are smaller than in the case of human red cells, and this causes an even greater resemblance to true haemagglutination. Many other chemical substances, of course, when added in certain proportions to a suspension of washed red cells in saline, bring about a clumping which cannot be distinguished under the microscope from the agglutination produced by serum. Among antiseptic reagents, acriflavine, 1 per 1,000 solution in normal saline, gives this result in a striking manner. In the case of most antiseptic substances, however, the cells undergo rapid injury and eventual disintegration. This does not occur with gum solution and liquid paraffin.

The Opsonic Action of Liquid Paraffin and Gum Solution on the Red Cells.

The question now arises whether red cells which have undergone artificial agglutination by gum or paraffin are also opsonized, or prepared for ingestion by leucocytes, in the same way that red cells are prepared when acted on by an agglutinating serum. The evidence suggests that this may be the case under certain conditions.

(a) The effect of agglutination on broken up red cells. If a drop of the red cell debris in normal saline previously described be added to a drop of any agglutinating serum on a slide a true agglutination takes place of the fragments of red cells. The colour of the agglutinated mass is yellowish-grey instead of brick red, and the reaction is slower and less complete than in the case of whole red cells treated in the same manner. Fragmented red cells are thus capable of agglutination like whole cells. If now, instead of using an agglutinating serum to clump the disintegrated cells, we use gum solution and add a drop of the agglutinated and sedimented debris to a drop of blood from the same individual and incubate in a closed cell, we find that the toxic effect previously shown by the unagglutinated red cell debris on the leucocytes is absent. The leucocytes emigrate freely from the clot, and some may ingest the red cell debris. If instead of gum solution the red cell debris is rubbed up in a mortar with liquid paraffin before incubation with the whole blood, the inhibition of the leucotoxic effect is even more marked.

(b) The effect of artificial agglutination on whole red cells. Apart from its action on disintegrated cells, previous agglutination by paraffin or gum solution also opsonizes whole red cells under certain conditions. We have already seen that washed sheep's red cells when present in considerable quantity are more toxic to the leucocytes of certain individuals than to those of others. If, however, these washed sheep's red cells have been previously shaken up with gum solution or liquid paraffin before incubation the leucotoxic effect is largely prevented. A mutual adhesion occurs between the red cells and the phagocytes and a number of red cells are ingested. Thus preliminary treatment by certain chemical reagents brings about a change in red cells (whole and disintegrated) which not only produces agglutination of the cells and the cell fragments *inter se*, but also reduces their leucotoxic influence and prepares them for ingestion. The appearances suggest that these effects are brought about by some change in the stroma of the cell. This change prevents the endotoxin from diffusing rapidly into the surrounding medium and thus poisoning the leucocytes, at the same time it renders the red cells mutually adhesive and also adhesive to the leucocytes with which they come in contact.

The Relationship between Haemagglutination and Opsonic Action.

It does not, however, follow that reagents which agglutinate the red cells always prepare them for ingestion. This latter effect depends on a mutual reaction between the red cells and the phagocytes by which the two become mutually adhesive.

Some reagents, like mercury perchloride, which in dilute solution agglutinate red cells are themselves toxic to the leucocytes. Others, like acriflavine, which in dilute solution are not markedly leucotoxic, do not seem to promote the ingestion of the red cells. It is a suggestive fact that those reagents which do promote the ingestion of red cells by leucocytes—for example, liquid paraffin and dilute gum solution—are mostly inert substances; they both, in different degrees, protect the shed leucocytes from rapid divitalization. They both stimulate the elaboration of iodophil substances by the leucocytes, and they check the rapid diffusion of this substance from the cells into the surrounding medium. They both affect the density of the serum and alter the surface tension of the cell bodies which they envelop. They are not erythrocidal or haemolytic in character. Thus a 5 per cent. gum solution in normal saline agglutinates washed red cells, but cells so agglutinated are not disintegrated, they can be washed free of the agglutinin in normal saline, and can then be reagglutinated by the gum solution. Reagents, on the other hand, which haemolyze and destroy the red cells prevent ingestion, possibly because they bring about a rapid diffusion of the liberated endotoxin in sufficient volume to poison the leucocytes.

Factors Concerned in the Haemagglutination and Phagocytosis of Red Blood Corpuscles.

The foregoing observations suggest that the phenomena of haemagglutination as it affects the cellular elements of the blood should be described in terms of both red and white cells. Three factors are probably involved in the process:

1. An erythrocytic agglutination in which the red cells agglutinate *inter se*. This process does not necessarily bring about ingestion, but in some cases seems to favour it.
2. A leucocytic agglutination in which the leucocytes themselves clump together irrespective of any action on the red cells. This is seen when leucocytes are acted on by certain animal blood serums and will be described in a subsequent paper.
3. An erythro-leucocytic agglutination in which the red cells and the leucocytes become mutually adhesive. This occurs when opsonic blood serums prepare the red cells for ingestion.

General Conclusions.

It may be that in our search for chemical reagents with which to sterilize wounds we have relied too much on bactericidal capacity and have not sufficiently considered the influence exerted by these substances on the natural defensive mechanism in its humoral and cellular aspects. We should probably do well to regard antiseptics (when effective) as co-operating with the physiological defence in bringing about an agglutination and opsonization of the invading organisms and thus rendering them vulnerable to phagocytic attack.

I am not without hope that the foregoing observations on the artificial agglutination and opsonization of red blood cells by chemical means may throw some light on an allied problem—namely, the mechanism by which the agglutination and opsonization of pathogenic organisms is brought about naturally, and the possibility of aiding this process by chemical means. It would, for example, be of considerable advantage to know what chemical reagents, if any, are capable of agglutinating bacteria and cocci, and whether organisms so artificially agglutinated are also opsonized and rendered easier of ingestion and digestion by phagocytes. The mechanism by which organisms and phagocytes are rendered mutually adhesive, before phagocytosis can take place, is also one of great importance.

ADMIRAL WILLIAM C. BRAINERD, Surgeon-General of the United States Navy, reports that the naval casualties of the war, exclusive of the Marine Corps and of deaths from disease, amounted to 1,233. Practically all the deaths were due to submarine attacks.

CANCER OF THE TONGUE.

ABSTRACT OF THE BRADSHAW LECTURE DELIVERED
BEFORE THE ROYAL COLLEGE OF SURGEONS
OF ENGLAND.*

BY

D'ARCY POWER, M.B. OXON., F.R.C.S. ENG.,

SURGEON TO AND LECTURER ON SURGERY AT ST. BARTHOLOMEW'S HOSPITAL.

CANCER of the tongue is remarkable in the fact that it is almost entirely a human disease; it is always of one type; it is unknown in children; it is common in men, rare in women; it is not associated with any inherited predisposition to carcinoma.

Cancer of the tongue did not become important surgically until the seventeenth century. The Greek, Latin, and Arabian writers on surgery hardly mention it, and, so far as can be ascertained at present, it was unknown to the Anglo-Saxons.

The first definite notice of cancer of the tongue is the case of Ralph Freeman, who died on March 16th, 1634, whilst serving the office of Lord Mayor of London. He suffered from secondary haemorrhage, and it was the opinion of the physicians and surgeons who were in attendance upon him that a mercurial course might have been of use at an earlier period of the disease. The second recorded case occurred in Germany and was looked upon as a miraculous punishment for cursing the clergy. The story runs that "lately a certain baron spoke abusively to all and sundry, but kept his most venomous shafts for the clergy and for those who devoted themselves to God's service. One day a holy brother of good repute, whom he had just lashed, said: 'Your foul tongue has overlong deserved that punishment from an offended God which it will shortly receive.' The baron rode off undismayed, but a few days later a small swelling began to grow at the side of his tongue. Little by little it increased in size until it became an inoperable cancer, and the baron, penitent and confessed, died miserably afflicted." From the middle of the seventeenth century onwards cancer of the tongue became so frequent that it was no longer necessary to invoke a miracle to account for its production.

The zoological distribution of lingual carcinoma was considered in the light of the experience of Sir John McFadyen, principal of the Royal Veterinary College, of Dr. J. A. Murray, Director of the Imperial Cancer Research Fund, and of Dr. Anton Sticker. At the present time cancer of the tongue is known to have occurred in one horse, three cats, and one dog. All these animals were aged, and in each the cancer was of the squamous-celled variety.

It appears fair to assume, therefore, that lingual carcinoma has always occurred in men and domesticated animals; that originally in man it was no more frequent than it now is in animals, but that from the seventeenth century onwards it has increased out of all proportion in man whilst the incidence has remained stationary in animals.

The rate at which cancer of the tongue has increased in man is well shown in the returns of the Registrar-General. Dr. Stevenson, superintendent of statistics, wrote in 1909: "The increase amongst males of deaths from cancer of the jaw, and especially of the tongue, is remarkable, and can scarcely be explained by improved diagnosis. Although cancer of the tongue presents little difficulty of diagnosis in its later stages, the recorded mortality has increased amongst males by no less than 228 per cent. in forty-one years. The increase, moreover, is entirely confined to the male sex."

The possible factors causing this increase in cancer of the tongue were considered. Irritation has long been looked upon as an important factor in causing cancer, and the state of the teeth was therefore passed in review to determine whether pyorrhoea and caries have lately become more common. The virulence, but not the amount, of pyorrhoea seemed to have increased, whilst caries does not appear to be more frequent now than it was in some parts of England during the prehistoric period. It was noted, too, that the Roman skulls found in England had nearly as many carious teeth as there are in the skulls

* The text of the lecture is published in the *British Journal of Surgery* for January, 1919.

of Londoners who died within the last two hundred years. If cancer of the tongue were the direct result of carious teeth the disease should have been as well known to the surgeons at Rome as it now is to us. But neither in Celsus nor in the Latin satirical poets is there any allusion to it.

An examination of the records of St. Bartholomew's Hospital showed that 169 persons were admitted with cancer of the tongue during the years 1909-1916. Nine of the patients were women, the rest were men. The proportion of men to women admitted into the hospital during this period, therefore, was eighteen to one; the true proportion, as shown by the returns of the Registrar-General, being one woman to eight men. Of the women seven were married, one was unmarried, and the social state of the other is not mentioned. Of the seven married women one gave a history of syphilis, two showed signs of syphilis, and one was a widow who had only one child alive out of five; the note adds, "she looks as if she drank." One woman had leucoplakia of the tongue at the age of 17, and stated that her father had suffered from an "abscess of the brain" which was cured by medicine. This was probably a gummatous meningitis. There was no history of syphilis, either acquired or inherited, in the other two married women. The unmarried woman—a nurse—said that her father died of aneurysm, and that she herself had suffered from an abducent paralysis, which came on suddenly and was cured by medicine. None of the women smoked, but all had bad teeth.

In the case of the men 93 out of the 160 were syphilitic, 62 of these gave a history of syphilis, and the remaining 31 showed signs of the disease. The syphilis was invariably of long standing, and taking a few cases in the series without selection the primary infection was said to have been 26 years, 30 years, 29 years, 40 years, 28 years, 23 years, and 43 years previously. Twenty-six patients stated definitely that they had never had syphilis, but one of these had suffered from gonorrhoea, and two had a positive Wassermann test. Many of the patients had drunk to excess, but did not as a rule acknowledge that they had taken spirits freely. A Wassermann test had only been performed 26 times, with the result that it was negative in twelve and positive in six cases; in five it was doubtfully negative, and in three doubtfully positive. These results were compared with those obtained by Captain Arnold Renshaw, R.A.M.C., of the Manchester University Medical School, and Captain Archibald Leitch, R.A.M.C.(T.), of the Cancer Hospital, Brompton. The evidence brought forward pointed to a close association between syphilis and cancer of the tongue. The syphilis may be active, it is more often quiescent or even extinct, and the conclusion arrived at was that, as in some cases of tuberculosis, "syphilis makes the bed upon which cancer is born." It appeared further that an increase in the number of deaths from lingual carcinoma has occurred after periods when mercury has temporarily fallen into disuse in the treatment of syphilis. Such insufficient treatment was the rule in the later years of Queen Elizabeth's reign, when guaiacum, sarsaparilla and the "vegetable" cures displaced the original mercurial methods; during the Regency period when some of the army medical officers nearly succeeded in abolishing the use of mercury; and again in the early Victorian era, when the value of potassium iodide was unduly exploited. It is interesting to notice that many of the patients whose cases are recorded at St. Bartholomew's Hospital stated voluntarily that they had only been treated with mercury for a fortnight or three weeks, after which they considered themselves cured.

Syphilis cannot be considered as more than a predisposing cause of cancer of the tongue, because lingual carcinoma occurs in animals. An exciting cause, therefore, must be looked for, and that cause must have become more prevalent during the last fifty years if the increase in cancer of the tongue is to be attributed to it. The cause must also be one which acts in men more than in women. The increased consumption of tobacco seems to fulfil these conditions. Cancer of the tongue did not become frequent until some years after the introduction of smoking in the last quarter of the sixteenth century. The habit spread slowly during the seventeenth, eighteenth, and nineteenth centuries, until cigars could be smoked openly in the streets by the upper and middle classes, though pipes were taboo in public. Cigarettes

were introduced about 1877, and from that time onwards the smoking of tobacco has steadily increased, until it is now an almost universal habit with both sexes from adolescence onwards. Smoking acts in two ways as an irritant to the tongue, partly through the nicotine and partly by the increased heat in the mouth, which is measurable by the thermometer. In the latter respect it may bear the same relation to cancer that heat does in kangri cancer, where the thermal irritation appears to be a definite factor in the production of epithelioma. Although the predisposing and the exciting causes of cancer may be known, the actual cause has yet to be discovered; but if two factors are recognized, it ought not to be impossible to discover the third.

In conclusion the lecturer thought that it was theoretically possible to reduce cancer of the tongue to the subordinate position it occupied in man before the seventeenth century, and which it still holds in the domestic animals. This could be effected by a thorough treatment of syphilis in its initial stages. Persons who were being treated for syphilis should be told never to smoke, not to drink to excess, and to pay regular visits to the dentist. Such advice should be given whilst the patient was still under treatment, and should not be deferred until the tongue had become sore. Failure to follow this advice or a continuance of the treatment of syphilis on ineffective lines would be followed in all probability by a very large increase in the number of patients with cancer of the tongue. This increase should begin about 1950, and should affect women as well as men, for syphilis is now more widely spread amongst the younger generation than it has been for many years past, and both sexes smoke much larger quantities of tobacco than ever before.

A NOTE ON A CASE OF ACUTE FEBRILE POLYNEURITIS.

BY

R. W. DALE HEWSON AND R. M. STEWART.

(From the Neurological Department, British Salonica Force.)

UNDER the title "Acute febrile polyneuritis" Gordon Holmes has described a type of polyneuritis presenting a characteristic combination of symptoms which had not previously been described. This series of cases, some twelve in number, occurred among men from all parts of the territory occupied by the British armies in France, and other observers, French and German, have since reported similar cases appearing on the Western front. The case which we describe below appears to belong to this type, and, so far as we are aware, is the first which has occurred in the British Salonica Force, and therefore, we think, worthy of record.

History of Case.

Lieut.-Cpl. N. M.G.C., came to Macedonia from France in November, 1915, and with the exception of one trivial attack of diarrhoea, remained free from malaria or dysentery, and in good health until the onset of his illness on March 4th, 1918. He awoke feeling quite well, but in the course of the forenoon developed severe pain in the back of his neck. In the evening this was present in both lower limbs, and he had considerable difficulty in walking, his gait resembling that of a drunken man. He felt slightly feverish, but had no shivering, vomiting, or sweating. For the first two days of his illness he had no control over his bowels.

On admission to hospital, on March 6th, both lower limbs were weak, but slight pain was now only present in the small of the back and legs. Two days later he complained of being unable to open his mouth sufficiently wide to eat solid food. Articulation was altered, and some weakness of the upper part of the face noted.

On admission to a general hospital on March 10th his condition was as follows: Higher mental functions normal. Paresis of the left external rectus, and complete paralysis of all muscles supplied by the facial nerves; face expressionless, and drooping of both lower eyelids. Articulation difficult and slightly indistinct. Difficulty in swallowing, especially solids; other cranial nerves normal.

Sensory Functions.—Slowness of perception to rough tests (finger and pin) for tactile and painful stimuli over both lower limbs.

Motor Functions.—Trunk and abdominal muscles normal. Paralysis of diaphragm. Hand grasps weak. Both lower limbs can be lifted a few inches from the bed. Movement at ankles good; flexion of knee and extension of limb against resistance very weak. Gait staggering and greatly enfeebled. No definite inco-ordination of limbs. Sense of posture good.

Reflexes.—Abdominal and plantar reflexes absent. Supinator and biceps jerks equal and active; triceps not elicited. Knee and ankle jerks absent. Organic reflexes: Passes urine naturally, no retention. Anal sphincters intact.

Cerebro-spinal fluid clear under normal pressure. No increase in cells or globulins. Pulse regular, 87, good strength, vessel slightly thickened. Blood pressure 144 to 78 mm. Tongue clean, rather flabby. Abdomen, no tenderness. Liver and spleen not enlarged.

Four days later the facial paralysis had become less profound, the patient being able to half close his eyes.

On admission to the neurological department on March 22nd further improvement was found to have occurred. No disturbance of cutaneous sensibility could be detected save for the appreciation of simultaneously applied compass points on the limbs. Accessible nerve trunks were tender to pressure. The diaphragm contracted normally. The upper and lower limbs were still paretic. The abdominal reflexes were now present; triceps jerks could be elicited. The left plantar reflex was present. Electrical examination showed marked diminution to faradism in the facial muscles, especially those of the right side, and diminution in those of the lower limbs. On March 25th the patient had a typical malarial attack. Benign tertian parasites were present in his blood.

On March 29th (twenty-five days after onset of illness) considerable improvement was noted. Some degree of voluntary motor power had returned in the muscles of the face, and both lower limbs were much stronger. When examined a week later the patient could wrinkle his forehead, partially close his eyes, smile, and show his teeth. His knee-jerks were both present.

Slow but continued progress was made from this date onwards. When examined prior to evacuation, fourteen weeks after the commencement of his illness, his condition was as follows: He complains of difficulty in chewing, swallowing, in closing his eyes, and of excessive secretion of tears; also of occasional double vision. Mental functions normal. Fine tremor of outstretched limbs, and fibrillary tremor of right lower facial muscles. Articulation indistinct, especially labiodentals. Vision normal. Pupils react normally to light and on accommodation. Ocular axes parallel—no nystagmus. The facial lines of expression are almost entirely absent except those of the forehead. There is a falling in of cheeks, and widening of palpebral apertures. He is able to wrinkle his brow, to purse his lips, to expose his teeth, and to retract the angles of his mouth to a limited extent. He is able partially to close his eyes, the left more than the right. Emotional movements are present, but more marked on the left side. He is unable to blow out his cheeks or to whistle. Percussion of supraorbital nerves produces slight elevation of eyebrows. Palate moves normally on phonation; tongue protrudes evenly. Other cranial nerves normal. Sensory functions normal. Motor functions normal. Gait normal. Reflexes: Epigastric and abdominal reflexes present and equal. Plantar reflexes normal. Supinator jerks present and equal; biceps and triceps jerks brisk and equal; knee and ankle jerks normal. Organic reflexes normal. Electrical reactions: To faradism, diminution in all facial muscles, but most markedly in those of the right lower face.

For the establishment of a diagnosis of acute febrile polyneuritis certain clinical features form a trustworthy guide, and their importance is emphasized by Gordon Holmes. These are:

Rapidly developing and widespread flaccid motor paralysis which involves to an exceptional degree the facial muscles, those concerned in deglutition, occasionally the ocular muscles and the sphincters. Sensory disturbances, on the other hand, are relatively insignificant, and the amount of pain and paresthesia is slight in relation to the severity of the motor affection. The early date at which improvement sets in is another striking feature.

The symptoms exhibited by this patient conformed so closely to those described by Holmes that we consider ourselves justified in regarding the case as one of acute febrile polyneuritis. The sudden onset of the illness in a healthy man with a feeling of malaise and slight fever (but with no shivering, vomiting, sweating, or other symptoms characteristic of malaria), the rapidly developing flaccid motor paralysis, the implication of certain cranial nerves, the early loss of sphincter control, and the relatively insignificant sensory changes, are all in accordance with the usual clinical features.

In brief, the lower limbs showed a marked degree of paralysis, but no individual movement was impossible, nor were the distal segments of the limbs more paretic than the proximal. Muscular atrophy occurred to a very slight degree. The muscles of the upper limbs were much less severely affected. No affection of the intercostal or abdominal muscles was noted. Complete paralysis of all muscles innervated by the seventh cranial nerves was observed on the third day of the patient's illness, and formed a striking feature of the clinical picture. Articulation was slurred and indistinct. Neither the tongue nor the palate was involved, but the patient experienced difficulty in swallowing. There was no involvement of the

muscles of mastication, and phonation was unaffected. The reactions of the pupils were normal, but paresis of the left external rectus was noted, and the patient complained of occasional double vision. Cutaneous sensory disturbance was very slight. At first slowness of perception of tactile and painful stimuli was noted, and at a later date a raised threshold for the appreciation of simultaneously applied compass points. Joint sense and vibration "sense" were apparently normal. The abdominal and plantar reflexes were absent; also the deep reflexes (except the triceps jerks). Incontinence of faeces existed for two days. There was no disorder of mental functions. Definite improvement was noted twelve days after the onset of the symptoms. Examination of blood, the cerebro-spinal fluid, and the urine yielded negative results. It remains to be noted that in one or two particulars the patient did not conform to the usual clinical features. While sphincter trouble was very transient, the difficulty in swallowing persisted up to the time of the patient's evacuation from Macedonia. Paralysis of the diaphragm, not hitherto recorded, was present in this case. The proprioceptive forms of sensation, which are said to be frequently involved, were unaffected.

Etiology.

Finally, reference must be made to the problem of the actual cause of the condition. The possibility that the patient's symptoms were determined by the action of malaria toxins requires consideration, for, as noted in the clinical history, a typical malarial attack occurred on the twenty-first day of his illness, the parasite of benign tertian fever being demonstrated in his blood. The widespread prevalence of malaria in the Salonica Force has led to a great many clinical conditions being labelled "post-malarial" on very slender grounds, for it is undoubtedly the case that many of them occur just as frequently in other areas where malaria is unknown. The presence in the blood of a patient of the malaria parasite therefore gives no conclusive proof that some new disorder, developed perhaps weeks or months after the paroxysm, is conditioned by the malaria toxin. In the case recorded above there was no history suggestive of malaria, nor was the parasite found until the patient had been three weeks in hospital. It is of course possible that the patient may have had a latent infection or that he contracted the infection in hospital, although the season of the year does not favour the latter suggestion. Moreover, in many patients who have suffered from malaria, examination of the blood shows an increased proportion of lymphocytes. A differential blood count in our patient gave normal results.

But our chief grounds for believing that the nervous condition could not be considered a malarial sequela are clinical. In the cases of post-malarial multiple neuritis which we have had the opportunity of studying the clinical features have been very different from those described above. We have always obtained a history of a typical malarial paroxysm, preceding the onset of the nervous symptoms by a period of several days, and although the development of symptoms may be considered rapid it is certainly less acute than in febrile polyneuritis. Sensory symptoms are always marked, and affect cutaneous sensibility to a greater extent than the other proprioceptive forms of sensation. We have never observed involvement of the sphincters. On the other hand, the cerebro-spinal fluid is seldom normal, and may contain a markedly increased albumin content. The recent occurrence of a variety of polioencephalitis in epidemic form in the British Isles suggests the presence of some pathological basis in the case described, but the complete integrity of the mental functions in our patient, and clinical course of the symptoms, renders such an etiology extremely unlikely.

We are indebted to Lieut.-Colonel N. J. C. Rutherford, D.S.O., R.A.M.C., for permission to publish this case.

COSTA and TROISIER have found (Société de Biologie) that the cerebro-spinal fluid in cases of spirochaetosis interohaemorrhagica is more virulent to guinea-pigs than the blood.

THE Paris Academy of Medicine has awarded the Saintour prize to Dr. Augustin Cabanès for his recently published work entitled *Chirurgiens et blessés à travers l'histoire: origines de la Croix Rouge*.

STREPTOCOCCAL INVASION OF THE CEREBRO-SPINAL FLUID.

BY

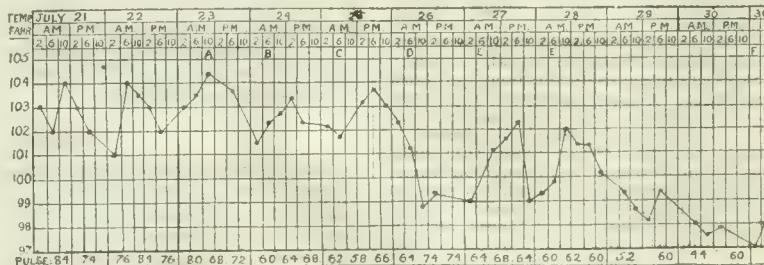
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The fatality of streptococcal invasions of the cerebro-spinal fluid from septic bone foci is so very great, and treatment is usually so unavailing, that it is worth while to record an instance of proved invasion in which treatment was able to effect a speedy cure.

Pte. C. was transferred to a surgical ward under my care at the — General Hospital, Salonica, on July 23rd, 1917. The following history was obtained: Six weeks previously there had been an abscess near the anus, clearing up in about three weeks, when the patient began to have pain and stiffness in the neck. These symptoms had steadily increased to the time of examination. There was no antecedent trauma, and no account of personal or family tuberculosis. The temperature and pulse are shown on the chart. The left posterior cervical region was swollen, tense, and hot. Fluctuation could not be made out. The greatest tenderness was just to the left of the ligamentum nuchae in its lower part. The perineum revealed the scar of a boil. Rectal examination showed no induration to suggest tuberculosis. No active focus of infection was found (oral, urinary, nasal, etc.).

Operation.—A muscle-splitting approach was adopted. Beneath the deepest layer was found an abscess under great tension; some 25 c.cm. of thick creamy pus escaped, and at the bottom of the cavity was felt the bare roughened lamina of the fourth cervical vertebra; a probe cautiously introduced was felt to pass completely around it. The release of tension caused considerable oozing. This was arrested by light packing, and the next day Carrel-Dakin treatment was established. (The bone lesion was sterilized in fourteen days and gave no further trouble; slight and temporary stiffness of the neck resulted.) The pus gave on culture streptococci and staphylococci; no tubercle bacilli.

Slightly before and noticeably after operation there was vomiting and retching; the pulse-rate was low for the pyrexia present. The knee-jerks were increased; Kernig's sign was present. The optic discs were normal. On the day following operation (July 24th) urotropin, gr. x, four-hourly, was begun. Lumbar puncture was performed and the fluid shot out at great tension; but it did not appear abnormal to the naked eye. Short streptococci were demonstrated on centrifugalization and grew on culture. Only a few polymorph cells were present. On July 25th puncture was again performed, and 7.5 c.cm. of multivalent antistreptococcal serum were injected after the withdrawal of 15 c.cm. of slightly turbid fluid (in which streptococci were present, but did not grow on culture). Retching persisted and the pulse was still lower. Discs normal. On July 26th, puncture, serum injected; streptococci present. On July 27th, puncture and serum injected. No organisms were seen or grown. A few polymorphs were present to the extent usual after intrathecal serum injections. On the 28th, puncture and serum injected. Fluid sterile. On July 31st the urotropin was discontinued. Discs normal. On August 1st the retching ceased. The pulse rate was 50 to 60 for another seven days. Convalescence was uneventful.



A. Operation. B. Urotropin; lumbar puncture (15 c.cm.; streptococci grown). C. Lumbar puncture; 7.5 c.cm. serum injected (streptococci present). D. Lumbar puncture; 10 c.cm. serum injected (streptococci present). E. Lumbar puncture; 10 c.cm. serum injected (sterile).

COMMENTS.

1. In the absence of other discoverable focus, the presumption is that the anal boil was responsible for the metastasis.
2. The invasion was at a very early stage. As the organisms had ceased to grow *before* the injection of serum, no claim can be said to be

established by this factor in the treatment, although the effect of the urotropin cannot be disregarded. The case seems to indicate that it takes time and continued invasion to establish firmly an infection (apart from overwhelming virulence), and that there is an infecting period during which surgical treatment of the focus should be of avail, particularly where the spread is, as here, via the lymphatics.

3. Lumbar puncture is the obvious means of determining when this invasion has occurred, and is an invaluable auxiliary in the treatment of the case, as well as an index of its progress.

My thanks are due to Major Colt for permission to publish this case, and to Captain Richards for the examination of the specimens.

INFLUENZA EPIDEMIC IN Q.M.A.A.C. HOSTEL, EDINBURGH.

BY

A. MERCER WATSON, L.R.C.P., L.R.C.S.E.,
L.R.C.P. AND S.GLASG.,
MEDICAL OFFICER IN CHARGE.

The total number of beds in the hostel is 500, and, as it is a receiving dépôt hostel, the women in it are of various categories, including (1) the permanent staff, numbering about 40; (2) recruits just drafted in for uniform and training purposes; (3) workers of all categories transferred from camps to be drafted out as required. There is, consequently, an ever-changing population, so that the risks of infection being brought in are the greatest possible.

During the recent outbreak of influenza there have been 115 cases; roughly speaking, 23 per cent. of the inmates have been infected. The first definite case of influenza was reported on September 30th, after which there was a lull of nine days, the second case being reported on October 9th. After this the cases followed in rapid succession.

The most frequent complaints on admission to the sick bay were—cough in 41 cases, sore throat in 21, and headache in 22. In 24 cases there was nothing definite reported except a feeling of general unfitness, but in every case the temperature was above normal—in one case 105°, in two 104°, and in one 103.6° on admission.

The length of the stay in the sick bay varied from three to thirteen days, with an average of five to six. One case

developed slight pneumonia, and was removed to the City Hospital, but her whole stay in sick bay and City Hospital inclusive was only sixteen days.

The temperatures rose in 3 cases to 105°, in 8 to between 104° and 105°, in 21 to between 103° and 104°. In no case, however, was there any delirium or even mental confusion, though there was considerable sleeplessness in several cases. No hypnotics, however, were required.

In studying the temperature charts, two types are distinctly seen: (1) Temperatures which fall steadily to normal, usually on the second, third, or fourth day, and remain normal or subnormal (89, or 78 per cent. of total). (2) Temperatures which fall to normal after a similar interval, and then show a secondary rise and a final fall after three to nine days to normal or subnormal (25, or 22 per cent. of total). The height of the second rise, speaking generally, was not as great as that of the primary, but there were 5 cases between 103° and 104°. The majority rose to between 99° and 100°, but the second rise was of short duration. At the time of the first fall to normal the patients declared themselves perfectly well and were anxious to get out of bed; so much so that, without consideration of the temperature charts, it would have been impossible to say that there was anything wrong. It seems evident that in many private cases patients are allowed out of bed too soon, and that the second rise of temperature, which seems to be almost pathognomonic of the disease, is the time when the serious pneumonic complications have arisen. In every case where the second rise did not fall to normal within thirty-six hours a slight degree of catarrh at one or both lung bases was

found. With the marked temperatures the foulness of the mouth was remarkable—more than is usually found, even in such cases.

Climatic Conditions.

In this epidemic, as in others reported, climatic conditions seem to have had no influence on the disease. According to the Registrar-General's monthly report for October for Edinburgh, the difference from the average air temperature for the month was -3.6° . The percentage humidity was 82 and the rainfall was 2.57 in. in excess, the winds being generally from west or south-west. The average death-rate in Edinburgh for the month was 18.3, and from influenza alone 4.8.

Housing has also apparently no influence, as the influenza mortality in Aberdeen was 8.3, and in Dundee, whose housing conditions are much inferior, it was 3.9.

Treatment.

On admission with fever, 10 grains of quinine sulphate were given within the first twelve hours, and, unless the temperature had begun to fall, the dose was repeated within the next twelve hours. During the fall of temperature 6 to 8 grains of quinine were given daily and 4 grains daily during the whole period in sick bay and for three days after discharge. When there was any complaint of pain 10 grains of aspirin were given three times in twenty-four hours. With the onset of cough an expectorant mixture was given thrice daily, or every four hours, as required; when there were catarrhal signs at the bases, hot poultices with mustard relieved the symptoms. For sore throat, gargles with permanganate of potash or swabbing with 2 per cent. iodine were satisfactory, but the foul mouth required to be cleansed by a nurse.

Windows were kept open night and day, and in many cases the beds were close to them. No special efforts were made to warm the rooms, and no difference was found between the cases nursed in rooms with fires and those in rooms without heating. Efforts were made to change the body linen as frequently as possible. Few or no restrictions were made in diet, as each was allowed to have what she asked for, plenty of milk being given to those who were thirsty, and in most cases light diet was preferred to the ordinary rations.

VACCINE TREATMENT OF INFLUENZA.

BY

R. E. TOTTENHAM, M.D., M.R.C.P.I.,
TEMPORARY SURGEON LIEUTENANT, R.N.

At the wish and suggestion of Surgeon Commander Rees, we have in these sick quarters adopted the routine administration of influenza vaccine prepared at the Royal Naval College, Greenwich (consisting of *B. influenzae* 60 million, streptococci 80 million, pneumococci 200 million per cubic centimetre), as a curative treatment in all cases of influenza.

Our routine has been that the patient, on admission, is given 0.112 c.cm. of the vaccine; forty-eight hours later this dose is repeated, and afterwards as often as necessary at intervals of forty-eight hours. After the first dose the quantity of the vaccine may be increased, but this depends on the reaction to the previous dose.

The treatment has been attended with such success that it may be of interest to quote one or two cases:

Case 1.—E. F., admitted on the first day of his illness; temperature 103° . Given 0.112 c.cm. vaccine. Temperature on the second day not above 100° . On the third day a second dose of vaccine given; temperature 99.6° . On the fourth day the temperature was normal, and patient convalescent.

Case 2.—J. K., admitted November 9th; temperature 105° . Was treated with usual medical routine treatment. The temperature fell to normal on November 16th, but on November 17th he had a relapse. The temperature on November 18th was 102° , and subsequently oscillated between 101° and 99° ; abundant mucopurulent sputum and moist râles in the chest pointed to purulent bronchopneumonia of a severe type. On November 23rd 0.112 c.cm. of the vaccine was given, and subsequently at intervals of forty-eight hours. Marked and continuous improvement in the chest symptoms was soon noted. The negative phases in this case were very marked from a subjective point of view; the patient complained of severe pains in the back and chest, sweating, and temporary increase in the cough; on this account the dose was not increased. He is now quite convalescent.

Case 3.—H. B., admitted November 10th; temperature 103° . On November 14th he developed pneumonia of a septic type (respirations 64) associated with delirium. On November 20th very little hope was entertained of his recovery, but 0.112 c.cm. of the vaccine was given. This was followed by a rise of temperature of 0.8° , but in twenty-four hours' time the delirium was less, and in forty-eight hours he was quite rational. The subsequent three doses of 0.112 c.cm. were associated with rises of temperature of 1.4° , 1.4° , and 0.8° . As the symptoms of the negative phase decreased, the dose of vaccine was gradually increased. Since the first inoculation the patient has shown a steady and progressive improvement, particularly as regards respiration, decrease of cough, and sputum. On December 7th he was allowed to get up.

Case 4.—A. D. D., Lieutenant R.N.R., was admitted on November 23rd with a history of having been ill since November 18th, suffering from symptoms of influenza, for which disease twelve of his crew had been left at his last port of call. On admission he was semi-delirious (temperature 104°) and presented definite signs of early pneumonia. On November 24th he was still cyanosed and semi-delirious, respirations 32. Vaccine 0.112 c.cm. given. On the same evening the temperature was 102.4° and respirations 44. On November 25th respirations 40, mentally much clearer; temperature 100.2° . By November 26th, in the evening, the respirations had fallen to 24 and the temperature was normal. The vaccine was repeated. He was discharged to sick leave quite convalescent on December 1st. The prognosis in this case on admission and on the day subsequent was extremely bad, as judged by the embarrassment of respiration, cyanosis, and delirium.

In conclusion I may state that since November 23rd, when the use of the vaccine was introduced in these sick quarters as the routine treatment, we have admitted 13 cases of influenza with not a single complication resulting; the cases have all shown influenza of a mild type. It is, of course, possible that this happy result is due to the type of the disease becoming milder as the epidemic dies away, but what is certain is that the injection of the vaccine does not cause any symptom in any way prejudicial to the patient's chance of recovery. I have been very favourably impressed by the great improvement in the patients' moral after the injection; they seem to feel that they are on the high road to recovery.

MYOLOGICAL PRINCIPLES: A NEW ULNAR SPLINT.

By STUART A. MOORE, B.A., M.D., M.R.C.P.,
CAPTAIN N.Z.M.C.

In the treatment of peripheral nerve lesions splints should be applied in such a way that, while they prevent over-stretching or fatigue of weakened or paralysed muscles, they interfere as little as possible with the other motor functions of the limb. Further, splints should be so devised and adjusted that as recovery occurs the weak muscles are free to perform, even when in the splint, those functions of which they are capable.

The above statement is surely a truism, but in practice its truth is commonly ignored, and there are but few who realize the importance of consistent application of these simple rules in the after-treatment of injuries to limbs. I venture to suggest, however, that such application of these principles in our practice would be a factor of some financial interest to the State. Their importance is like that which belonged to the discovery of the sharp-pointed screw, and is proportional, not to the simplicity of the ideas, but to their wide and easy application.

To any one who grasps the idea, many instances where these principles are commonly transgressed will occur, but in illustration of their application I will describe a splint which I have found useful in dealing with ulnar nerve lesions.

The splinting is for a typical recovering ulnar nerve lesion, weak adduction of thumb, and some ulnar claw in the fourth and fifth digits. The splint used is made of vulcanized wood fibre and needs no padding. The size and shape are indicated in Fig. 1, its manner of application in

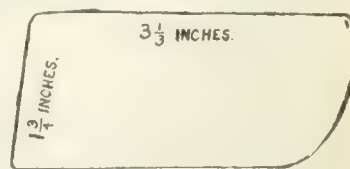


Fig. 1.

Figs. 2 and 3. The splint is first secured to the palmar aspect of the fingers by a narrow band of adhesive plaster which passes over the back of the proximal phalanges only. It is often advisable to protect the back of these

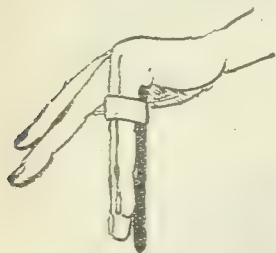


FIG. 2.



FIG. 3.

phalanges by a layer of lint. During this application the metacarpo-phalangeal joints are kept flexed, so that the splint is prevented from rising too far up the palm. A second band of strapping is fixed, over the first, on the back of the phalanges, the two ends cross in the palm and wind round the side of the hand, so that extension of the metacarpo-phalangeal joints is impossible.

Previous to the application of the splint it is necessary to put on the band of strapping advocated by Colin Mackenzie to prevent abduction of the thumb. This is not shown in the figure. The effect of this splint is to give correct position, to prevent extension of the proximal phalanges or flexion of the mid and distal ones, that is, the deformity that occurs. The movements lost—flexion of the proximal and extension of the two distal phalanges—are free to occur as the muscles recover. No muscle is entirely prevented from functioning, as there is some little play allowed, but no harmful movement can occur.

In a high ulnar nerve case, with involvement of the flexor carpi ulnaris, an additional splint is needed. This consists of a Jones's cock-up splint, but it is applied not, as is usual, to the anterior, but to the posterior aspect of the forearm and hand, and acts therefore as a cock-down splint, keeping the wrist in some degree of flexion. It is secured to the limb by two bands only, one passing just above the wrist and one higher up the arm. The hand is free to flex fully but not to extend.

The associated physical treatment advocated is based on Colin Mackenzie's work, and has this advantage, that the treatment requires little apparatus and can be given little and often, for, except at the outset, when the patients are learning the exercises, they can be treated in classes three or more times daily.

The patient is instructed what not to do. "Never dorsiflex the wrist. Never fully abduct the thumb. Never fully extend the proximal, and never flex the mid and distal phalanges."

In treatment the cock-down splint is unbuckled and removed with the arm pronated and the wrist flexed. The wrist is alternately actively flexed and partly extended. The dosage of exercise is determined by the behaviour of the flexor carpi ulnaris and stops short of fatigue. The progression of exercise is secured by allowing increased range of movement, increasing the number of movements made, and by increasing the work done by the muscle against gravity. This last effect is obtained by gradually changing the position of the forearm in which the exercise is performed. Full supination is the position from which the final exercise of wrist flexion is made in each treatment, provided of course that the muscle is fit for this. Each day, however, the first movements are made from the position of pronation.

The band that holds the thumb in adduction is then removed, the forearm supinated, and without allowing any real abduction of the thumb, the patient adducts as strongly as he can and then relaxes merely. Progression is secured as before, by allowing increased range and number of movements and by working round to the position of full pronation. As the case progresses the band is applied more and more loosely, but is removed only when complete recovery has occurred.

The strapping that limits the movement of the metacarpo-phalangeal joints is removed, and a band of webbing is buckled round the hand to prevent any inadvertent abduction of the thumb. The forearm is pronated, the wrist held straight. Flexion of the fingers at these joints is

then practised, first with the forearm pronated. Progression of position is to full supination.

In order to exercise the power of extension of the middle and distal phalanges, the exercise is at first done in the splint and the splint removed only for purposes of cleaning and readjustment, and perhaps in order to make sure that no neuritic stiffening of the fingers is occurring. Later, however, the splint is removed, and the proximal phalanges held by the patient, while the two others are actively extended and more or less flexed. The progression of position is from full supination to full pronation of the forearm. Adduction and abduction of the fingers is then practised.

The bands and splint are then reapplied. The patient is instructed to perform the exercises while his hand is in the splints as occasion offers. The use of this apparatus, which involves a minimum of interference with the functions of the limb, should be continued until nearly complete recovery occurs. This method of treatment gives the quickest results, and is the most correct I know psychologically and myologically. In its practice is based on accepted principles. Every one agrees that voluntary movement of a muscle is of greater therapeutic value than is electrical stimulation, but commonly in practice the latter is used as if it were more important than the former.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

VACCINES AND SERUMS SUPPLIED TO THE ROYAL NAVY FROM THE R.N. MEDICAL SCHOOL, R.N. COLLEGE, GREENWICH.

PREVIOUS to 1916 the greater part of the vaccines required were received from the inoculation department of St. Mary's Hospital, through the courtesy of Sir Almroth Wright; since then the undernoted quantities have been prepared in the laboratories of the medical school by the naval staff, assisted by a civil bacteriologist who joined for the war from Armstrong College, Newcastle.

Typhoid vaccine	5,400 c.cm.
Paratyphoid vaccine	21,500 c.cm.
Triple typhoid vaccine (Naval formula)	247,700 c.cm.

The triple vaccine is a mixture of *S. typhosus*, *B. paratyphosus* A, and *B. paratyphosus* B, heated to 55° C. for half an hour, and 0.5 per cent. phenol then added.

Cholera vaccine	8,600 c.cm.
Prepared from several strains of Balkan origin.	

Antisepsis vaccine	48,400 c.cm.
A mixed polyvalent vaccine containing streptococci and staphylococci.	

Influenza vaccine	144,000 c.cm.
A mixed polyvalent vaccine containing <i>B. influenzae</i> , streptococci and pneumococci.	

Melitensis vaccine	1,380 c.cm.
Staphylococcal vaccine	910 c.cm.

All antitoxins and serums prepared elsewhere were issued to the various divisions, dépôts, and ships from the school:

Tetanus antitoxin	14,800 doses.
Diphtheria antitoxin	2,400 "
Antidysentery serum	2,800 "
Antistreptococcal serum	1,250 "
Antimeningococcal serum	5,000 "

And others in smaller quantities.

During 1917 and 1918, 30,900 c.cm. of triple typhoid vaccine was prepared at the R.N. Hospital, Malta, and distributed locally to the fleet in the Mediterranean.

P. W. BASSETT-SMITH, C.B., C.M.G.,
Surgeon Captain R.N.

THE TREATMENT OF THE WAR PSYCHO- NEUROSES.

DR. MIDDLEMISS (December 21st, 1918, p. 700) in commenting on the paragraph under the above heading (BRITISH MEDICAL JOURNAL, December 7th, 1918, p. 634) asks: "Do we as a matter of fact find that the patients are unable to recall the emotional disturbance which has led up to the present disorder?" and answers: "Unwilling they may be, but not, I contend, as a rule unable."

It is impossible to answer this question without analysing a large number of cases and finding out how many patients have actually forgotten important emotional experiences, and it is plain that Dr. Middlemiss has not followed this procedure. I would agree that in most cases the patients are able, though unwilling, to recall what they think is the whole of their emotional experience, but my own results have convinced me that forgotten experiences are the rule in psychoneurotic patients, the man himself being ignorant that he has forgotten anything, as exemplified by the following cases:

Case 1.—A. B. states that he was blown up by a shell, lost consciousness, and found himself at a casualty clearing station. In the hypnoidal state he remembered being blown into a shell hole, becoming dazed, then going over the top again, fighting all day, returning to camp at night, reporting sick and going on to the casualty clearing station.

Case 2.—B. C., amongst other symptoms, complained of having repeated terrifying dreams for the last two years, of "something heavy lying on top of him." In the waking state he was unable to connect this with any experience, but in a hypnoidal state he recalled being under shell fire for five hours with his dead horse lying on top of him. After this revival the dream did not recur.

Case 3.—C. D., whenever standing in a queue, "came all over faint, with palpitation of the heart and a fear of impending death," and had to fall out. He could not trace this feeling back to any context, but in the hypnoidal state he recalled being in single file when his chums in front and behind were both killed, and he had to go on through the barrage; after this revival he could stand in a queue without emotion.

These cases are not curiosities but commonplaces; those who have not looked for a thing have no right to deny its presence.

E. PRIDEAUX,
Captain R.A.M.C.

Ewell War Hospital.

Reports of Societies.

TROPICAL DISEASES IN THE BALKANIC WAR ZONE.

At a meeting of the Royal Microscopical Society on December 18th, 1918, Mr. J. E. BARNARD, President, in the chair, Lieut.-Colonel ALDO CASTELLANI, M.D., M.R.C.P. (Italian army), read a paper in which he said that tropical diseases were quite common in the Balkanic zone. The most important and the commonest was often of a very malignant type, and might simulate many other diseases. Next to malaria the amoebic and bacillary dysenteries were the most common affections. Cholera and paracholera were rare, but attention was called to a peculiar choleraic type of bacterial dysentery, and to a type of diarrhoea, closely resembling the famine diarrhoea observed in India, seen in Serbian soldiers who had suffered terribly from starvation during the Albanian retreat.

Of camp jaundice, which was common, two varieties could be distinguished: (1) A very severe type, haemorrhagic, with high fever lasting ten to twelve days, showing occasionally a relapse—true icterus castrensis gravis—rare. (2) A mild type, icterus castrensis levis, often afebrile, very common. The severe type was of spirochaetal origin, and it was probable that many cases of the mild type were also spirochaetal. Fevers of the enteric group were fairly frequent, but did not assume an epidemic type. Paratyphoid and similar fevers due to intermediate germs were not rare. Mixed infections, such as "typhoid-paratyphoid A," or "typhoid-paratyphoid B," or "paratyphoid A-paratyphoid B," were of somewhat frequent occurrence, and Colonel Castellani had observed two cases of triple infection—"typhoid-paratyphoid A-paratyphoid B." The diagnosis was based on haemocultures. As a prophylactic the Serbian army had officially adopted Colonel Castellani's tetravaccine, typhoid-paratyphoid A-paratyphoid B-cholera. Malta fever was rare in Macedonia and the interior of the Balkanic zone, but was more frequently met with on the coast and in the islands.

Kala-azar did not occur in adults, but many cases of the infantile type were seen in certain islands of the Adriatic and Aegean Seas.

Relapsing fever was quite common; the best results were obtained by using a combined salvarsan-tartar emetic treatment.

A terrible epidemic of typhus fever raged in 1914-15, but was now rare. Trench fever was occasionally met with.

Pappataci fever was extremely common in certain parts of the Balkans, especially in the late summer and early autumn. Broncho mycosis and broncho-spirochaetosis were far from rare. Pellagra was quite common in several districts of Macedonia. Certain tropical skin diseases were frequently met with. The following caused great discomfort in summer and were often wrongly diagnosed: Dermatitis interdigitalis epidermophytica or "mango toe," tinea cruris or "dhoti itch," prickly heat, and various types of tropical pyosis. Among Macedonia peasants in 1915 cases were seen of ulcer tropicum, oriental sore, ulcer infantum, blastomycosis, sporotrichosis, and numerous cases of trichomycosis, and of intertrigo saccharomycetica and various other hyphomycetic affections. Two cases of madura foot were reported, two of keratoma plantare salcatum, and one typical of ainlum.

Reviews.

THE EARLY TREATMENT OF WAR WOUNDS.

This book on *The Early Treatment of War Wounds*, by Colonel H. M. W. GRAY of Aberdeen, will be read with great appreciation by those medical officers who have been fortunate enough to work in forward areas, and with great interest and profit by those whose duty has kept them at the base or in England. No one who has not spent some time at the front can realize the amount of forethought that has been given to ensure that the recently wounded man is conveyed with all possible dispatch to the casualty clearing station, nor the details of the preliminary treatment in the aid posts, advanced dressing stations, and ambulances to maintain warmth and to prevent pain and shock, so that the patient may arrive in the best possible condition.

It is now acknowledged, although full recognition of the fact was slow in coming, that early and complete excision of the lacerated tissues in a gunshot wound is the surest preventive of acute infection and gas gangrene; to Colonel Gray and his co-workers in the Third Army should be given the credit of this early treatment. Taking this proposition as his main basis—that operation must be performed in the pre-inflammatory stage of the wound and that the removal of all lacerated tissue must be radical, Colonel Gray evolves definite principles by which this can be carried out in individual cases, and lays down indications which his vast experience in the treatment of wounds permits him to state in decided terms. Whilst the difficulties in treatment in battle periods, when large numbers of wounded come down as compared with "peace times," are fully appreciated, a high ideal of treatment is aimed at, so that the general standard of work shall remain good. The author rightly insists that the future of a limb, or even a life, depends largely upon the efficiency of the treatment commenced in advanced units to ensure that the patient may arrive at the casualty clearing station in such a condition that operation is not delayed. Perhaps the most striking example of this is seen in the early treatment of fractured femur. Whereas in the earlier part of the war the mortality of cases of fractured femur was 50 per cent. in the casualty clearing stations, it dropped during the severe fighting in the spring of 1917 to 15.6 per cent.; previous to this battle the method of application of the Thomas splint was widely demonstrated so that it could be applied in forward areas, with the result that pain and shock were enormously diminished. Could anything bear greater testimony to the forethought of the consultant surgeons to the armies and the value of the advice they gave? No small share of it was due to Colonel Gray.

The earlier chapters are devoted to the treatment of cases at the regimental aid posts and advanced dressing stations, and contain a wealth of detail and instructions as to the maintenance of warmth and rest and the prevention of pain and shock. Herein are described the general arrangements and the working of a typical casualty clearing station. The author fully appreciates the necessity

¹ *The Early Treatment of War Wounds*. By Colonel H. M. W. Gray, C.B., C.M.G. London: Henry Frowde, and Hodder and Stoughton, 1919. (Post 8vo, pp. xv + 299; 25 figures, 10s. net.)

for the early treatment of the lightly wounded man from the military point of view as of the more severely wounded from the humanitarian; in the working of his ideal casualty clearing station he separates the two classes into light and heavy operation theatres, so that treatment of both can proceed without delay, and he insists upon the importance of the presence in the dressing-room of a highly experienced surgical officer who can form a rapid judgement of the severity of each case.

An important chapter is that dealing with the treatment of shock. The factors influencing it and the means to combat it are fully discussed. Infusions of saline and gum solutions are declared to have been disappointing, whereas the infusion of whole, citrated, or stored blood, both before and after operations, yielded remarkable and often dramatic results. Due stress is laid upon this, and acknowledgement made of the work of Captain O. H. Robinson in the Third Army. Colonel Gray considers that the best indication for transfusion is that the blood pressure is diminished below 85 mm. of mercury rather than the red blood cell count of Govaerts. The administration of alkalis to counteract acidosis is also discussed, but the opinion expressed, that acidosis is the cause and not an accompanying feature of shock, will not meet with general acceptance; the recent report of the Investigation Committee, analysed in our issue of December 14th, 1918, p. 662, shows that the evidence on the other side is strong. The treatment of shock has been of such importance that special "shock teams" were deputed for this duty in the resuscitation wards.

In Chapter IV the vexed question of the use of antiseptics in a wound is discussed. As a strong advocate of early and complete excision of lacerated tissue to remove the strongholds of infecting organisms, the author would dispense with antiseptics, stating that "it cannot be emphasized too strongly that the use of antiseptics will not make up for inadequate operative treatment." As, however, operation may be delayed and wounds cannot always be closed, he uses antiseptics to prevent the growth of organisms in the fluids exuded from wound surfaces—such as flavine 1 in 1,000 or iodoform 1 in 100, preferably in a paraffin medium, applied with light gauze packs, which require infrequent changing. The Carrel-Dakin treatment is summarily dismissed, "as it requires additional paraphernalia and frequent attention." Yet it must be acknowledged to have a distinct use in those cases in which excision of a wound is impossible from anatomical reasons or in which sepsis has occurred in spite of it.

The technique of excision of wounds is described, and definite rules, the result of direct observation, are laid down. Colonel Gray does not consider it sufficient to remove lacerated muscle until contraction of the fibres is seen; he holds that excision should stop only when actual bleeding points are visible. He emphasizes the value of a sharp scalpel as opposed to scissors, advocates removal *en bloc* and not piecemeal, and condemns the use of rigid drainage tubes, advising gauze impregnated with a paraffin antiseptic or folded rubber dams, which should pass "down to but not into" any cavity.

The remaining chapters deal with wounds of special areas. In injuries of the brain and its coverings early operation is advised to prevent sepsis, treating the mechanical effects of the traumatism rather than paying too much attention to clinical symptoms. The work of Harvey Cushing is considered, especially with regard to the removal of foreign bodies and fragments of bone from the brain, but we have found no reference to their localization by means of stereoscopic radiography.

The surgical treatment of injuries of the thorax forms one of the most interesting chapters of the book. The various forms of injury are discussed, but particular stress is laid upon the treatment of open or sucking wounds of the parietes. The author lays down definite indications for operation, and insists on the necessity of combating sepsis by removal of the lacerated tissues, of blood clot, and of foreign bodies, together with repair of the lung and diaphragm and closure of the wound, the latter quickly relieving the distress of the patient. It is shown that fully 70 per cent. of such cases are now sent to the base after early operation, whereas in the earlier part of the war few survived. "The decision as to the proper time for operation should result from the close collaboration of a skilled surgeon, a shock specialist, and, when possible, a level-headed, enterprising physician." Tables

of cases are given from the work of Major J. Anderson, and reference made to that of Colonel Gask, Colonel Nixon, and Major Lockwood on this subject.

In dealing with injuries of the spinal cord operation is advised when the paralysis below the lesion is incomplete, when the x rays show displaced fragments of bone or a piece of metal in or near the cord, or when the paralysis has developed some time after the infliction of the injury. Possibly earlier operation might relieve a proportion of these cases or recovery might be quickened in less severe injuries.

The treatment of compound fractures of the femur is discussed fully and the application of Thomas's splint described. The indications are given for immediate amputation, with attempts to form flaps; but not by the guillotine method, which "is practically never necessary or justifiable." No mention is made of any attempt to maintain the flaps in apposition over the stump of bone by extension applied to the soft tissues where suture is not deemed advisable, an omission which should be corrected, for excessive retraction from the stump is still seen too frequently in the later stages of the case.

The treatment of penetrating wounds of the knee-joint occupies a large part of the last chapter. The advance made in the early treatment of these cases is perhaps greater than in any other special injury, and has resulted in the saving of many limbs which would previously have been sacrificed, not to say lives which were formerly lost from acute sepsis. Early operation, with excision of the infected tract, irrigation of the joint with flavine or saline, and immediate suture of the synovial membrane and of the wound has yielded many excellent functional results, but, as the author points out, the operation must be most thoroughly performed. The injection of ether or formalin-glycerin into a joint is condemned. Where sepsis has occurred in the knee-joint, Colonel Gray favours resection, or, after free division of the lateral and cruciate ligaments, full flexion of the knee and packing of the surface; the results obtained from the latter method have little to commend it. Particular stress is laid upon the importance of good radiographic localization before undertaking any operation upon the knee-joint for the removal of a foreign body. For injuries of the shoulder-joint the importance of abduction of the arm is rightly insisted upon, and in severe injuries of the elbow-joint primary excision is advised, provided the movements of the hand are preserved. In this statement we cordially agree, but it would seem necessary to give some indication of the limits to which bone should be resected in order to obtain a useful limb, for many flail limbs have undoubtedly resulted from the excessive removal of bone. For severe injuries of the ankle and tarsal joints amputation might be more frequently performed, as the preservation of the foot with fixed ankle or tarsal joints frequently leaves the limb so crippled that the weight cannot be borne on it, whilst sepsis in the tarsal bones may be very difficult to clear up.

Gunshot injuries of the abdomen are not dealt with in this book—a somewhat curious omission, when Major-General Cuthbert Wallace and Colonel Owen Richards have shown how many lives can be saved by early operation in abdominal wounds, whilst the pre-operative care of these cases may often turn the balance and give the patient the chance that surgery affords. Abdominal wounds are so varied that it may be hoped Colonel Gray will detail his experience of these cases in a future edition, and give the indications for and against operation.

The book is forcibly written, and contains many points of great interest. It gives a real picture of the difficulties experienced in the work at the front and the manner in which they are to be overcome. It lays down definite principles for treatment, the underlying basis of which is free and thorough removal of all lacerated tissue, whilst not forgetting to treat the patient in addition to the specific injury, and with a view to the future functional use of the limb. We may express the natural regret that the book was not published earlier, for, although most of its recommendations have stood the test of actual practice, the end of the war will diminish the great use it would otherwise have had. At the same time, it remains as a lasting memorial of the work that has been accomplished at the front; of the efforts of surgeon, physician, and bacteriologist alike; and of the great advantage to the wounded man of the continuous treatment from the aid post to the

base. Much of it will be utilized in the accidents of civil life, for many of the principles evolved for military service are applicable to the injuries of peace.

LETHARGIC ENCEPHALITIS.

THE epidemic nervous disorder to which the term lethargic encephalitis was applied by Von Economo in Austria and Netter in France has now, as was stated last week, been made notifiable under that name in England and Wales. The first case noted in England occurred on February 11th, 1918, in Bermondsey, and the largest number of cases in one week was eighteen, in the last week of April. The number of cases declined thereafter, and the epidemic, which never attained large proportions, came, at least temporarily, to an end in June.

The suggestion made when the earliest cases were observed in this country that they were examples of botulism, a condition produced by the consumption of food contaminated by the *Bacillus botulinus*, described by van Ermengem in 1895, was plausible, since a case of botulism may present ophthalmoplegia, bulbar paralysis, and weakness of the limbs. Bacteriological inquiry soon showed that *B. botulinus* was not present, and in May the Local Government Board issued a memorandum (published in our columns on May 18th) stating that the investigations in progress afforded no bacteriological evidence of botulism, and gave no support to the association of the outbreak with infection from food.

The Local Government Board, with the assistance of the Medical Research Committee, instituted clinical and pathological investigations early last year, and the results are now published in a report* in which the whole ground is fairly well covered. The disease is now recognized to be an acute affection due to a specific virus, which probably finds entrance through the nasopharynx, like that of acute anterior poliomyelitis, and which, like it, has a special affinity for the nervous system, though for different areas and elements.

Pathology.

It is a fortunate circumstance that the histological examination of the brains from three cases, a most important link in the investigation, could be undertaken in this country by Professor Marinesco of Bucharest, who more than ten years ago had studied and described the changes observed in botulism. The same regions of the brain are attacked in both, but the lesions in botulism are not inflammatory, whereas Marinesco has no hesitation in stating that "encephalitis lethargica belongs histologically to the class of polioencephalitic diseases which are inflammatory in nature." As Marinesco observes, they present a striking resemblance to those of sleeping sickness described by Mott in 1899. We have, therefore, trains of symptoms presenting considerable resemblance, owing to the fact that the distribution of the lesions is the same, but caused by agents as different as the *Trypanosoma gambiense* of sleeping sickness, the virus, whatever it may be, of lethargic encephalitis, and the toxin of botulism. The bacteriological investigations did not yield any positive results.

Symptoms.

The report contains a valuable clinical essay by Dr. A. S. MacNalty, in which he defines lethargic encephalitis as "a general infectious disease, characterized by manifestations originating in the central nervous system, of which the most frequent and characteristic are progressive lethargy or stupor and a lesion in or about the nuclei of the third pair of cranial nerves." Although a rise of temperature was not observed in all the 164 cases of the disease of which notes were obtained, there seems to be little doubt that there is always a certain amount of fever in an early stage, although occasionally it may not be observed for several days after the onset of symptoms. The common range is between 101° F. and 102° F., but temperatures up to 104° F. are not very uncommon, and in a few cases a temperature between 104° F. and 105° F. has been reached. The pyrexia usually lasts from two to

five days, but may continue for ten or even fourteen. It may fall suddenly or gradually with oscillations. A period of subnormal temperature not infrequently follows.

In the majority of cases a prodromal period may be recognized, but it is not very well defined, the symptoms being the early stage of those of the developed disease. Usually the first symptom is simple catarrhal conjunctivitis; and in a smaller number of cases tonsillitis, simple sore throat, and bronchial catarrhs were observed, but the salient symptom observed in 80 per cent. of the cases at this stage was progressive lethargy. It might be ushered in suddenly by a fainting attack or fit, but the onset was more often gradual. The patient became dazed or stupid, slept a great deal, and was drowsy by day. In marked cases the lethargy was accompanied by heaviness of the eyelids, pain in the eyes, blurred vision and photophobia, and, in a well marked case, gradually passed into stupor. Headache was common, and giddiness was a highly characteristic early symptom, and in some cases was accompanied by diplopia. Mental hebetude was often associated with a highly emotional state, and the patient might exhibit, without apparent cause, symptoms which might be labelled hysterical. In other instances the mental depression was so great that melancholia was suspected. In a few cases only was the patient restless and irritable. The patient may be indisposed to speak, sometimes has distinct difficulty in articulation. The most frequent and characteristic signs in the prodromal period may be summed up as lethargy, asthenia, vertigo, headache, diplopia, and some alteration in the mental state.

After this prodromal period, if it occurs, the symptoms of a general infectious disease become manifest; the febrile reaction has already been mentioned. The patient lies in bed on the back, often unable to make any voluntary movement on account of great muscular weakness; the face is quite expressionless and mask-like, and there may be definite double facial paralysis. The severest cases lie like a log in bed, resembling a waxen image in the lack of expression and mobility, and this may be accompanied by catalepsy. The patient is in a condition of stupor although true sleep is often not obtained. Delirium, usually nocturnal, is not uncommon, and in addition to the muscular trouble there is distinct rigidity in a considerable proportion of cases. The voice becomes nasal and monotonous, sentences are uttered very slowly and words slurred into one another. Occasionally, however, once started to speak the patient chatters sentences with so great rapidity that he is often unintelligible. Irregular non-rhythmic spontaneous movements of the face, trunk, and limbs, resembling those seen in chorea or thalamic infections, are not infrequent. Cases occur which present the general symptoms of the disease—pyrexia, lethargy, asthenia—without localizing signs, and as a rule can only be diagnosed from the general surrounding circumstances. The commonest localizing sign is ophthalmoplegia, recognized in 75 per cent. of the cases examined. Ptosis is the commonest form of third nerve paralysis, and is usually at some stage bilateral. Finally paralysis is usually bilateral, or becomes so, but is almost invariably more intense on one side than the other.

Dr. MacNalty recognizes seven types of cases—(a) a clinical affection of the third pair of nerves; (b) affections of the brain-stem and bulb; (c) affections of the long tracts; (d) the ataxic type; (e) affections of the cerebral cortex; (f) cases with evidence of spinal cord involvement; and (g) the polynuritic type in which affection of the peripheral nerves is suspected. The prognosis is better than the alarming state of the patient in the fully developed stage would suggest. Among 168 cases 37 deaths were recorded. The duration of the stupor is very variable; occasionally it lasts two to three days, more often two to five weeks, and in one case, which eventually recovered, it continued for eight weeks. It is too soon to speak positively of after-effects, but certain manifestations have persisted after the expiration of three months from the date of onset: these are an alteration in the mental condition, persistent cranial nerve palsy, the appearance of paralysis (apparently of spinal cord origin), and athetosis. The diagnosis may be very difficult, the lethargy and the progressive character of the cranial nerve paralysis are the most characteristic signs. The frequency of ptosis, paralysis of the ocular muscles, diplopia, facial paralysis and ocular inco-ordination are

*Report on an Inquiry into an Obscure Disease, Encephalitis Lethargica. L.G.B. Reports on Public Health and Medical Subjects (N. S. 121). London: H.M. Stationery Office; through booksellers, 2s. 6d. net.

the cranial nerve signs; optic neuritis does not occur, save in very occasional cases.

Diagnosis.

The most common error in diagnosis is to attribute the condition to tuberculous meningitis; in many cases a differential diagnosis from cerebro-spinal meningitis cannot be made without an examination of the cerebro-spinal fluid, which is little if at all altered in the majority of cases of lethargic encephalitis.

Some of the other difficulties encountered have already been mentioned, but the essential difficulty is to separate lethargic encephalitis from the rare cases of the cerebral form of infantile paralysis. The resemblance is very close, and it seems probable that some of the cases reported in the past as cerebro-spinal poliomyelitis may have been examples of the disease now newly recognized in this country. Dr. MacNalty has arranged the chief criteria for diagnosis in a table which is too long and detailed for reproduction here. The main points to be noted seem to be that, though the chief symptoms of lethargic encephalitis have been described in cases reported as cerebral poliomyelitis, they are slight, of much briefer duration, and not so constant; lethargic encephalitis, on the other hand, has a very definite clinical syndrome, characterized by progressive stupor or coma, alternating delirium, headache, giddiness, asthenia, mental and emotional changes, and, in the majority of cases, by paralysis of the third pair of cranial nerves. Paralysis, when present in lethargic encephalitis, is usually bilateral and restricted to cranial nerves, but has commonly cleared completely or is less in degree two months after recovery. In these respects it presents a marked contrast to acute poliomyelitis.

There are clinical indications that in the present outbreak both poliomyelitis and lethargic encephalitis have occurred, but not in association with each other.

Dr. MacNalty considers that the question of the identity or non-identity of the two diseases is still open, but suggests that the relation between them may perhaps be comparable to that known to exist between typhoid and paratyphoid fever.

Treatment.

With regard to treatment, no specific method has been devised, and the best that can be done is to put the patient to bed and provide him with good nursing; cold sponging is often beneficial during the pyrexial period and tends to diminish the delirium. In many instances transient or permanent relief, with diminution of stupor, followed the withdrawal of cerebro-spinal fluid by lumbar puncture, especially when the fluid was under pressure. For the pain, numbness, and tingling of the limbs warmth is the best remedy, and the bedclothes should be raised on frames. Constipation is obstinate and often difficult to overcome, except by enemata, followed by such drugs as liquid paraffin or phenolphthalein. No hypnotics and no morphine or other preparation of opium should be given, and Dr. MacNalty deprecates the administration of hexamine in large and repeated doses; if it is prescribed the urine should be carefully watched for albumin. Daily cleansing of the mouth and antiseptic treatment of the nose and mouth should be carried out, and respiratory complications systematically looked for. Finally, the patient should be given to understand that his convalescence will last for at least six months after the beginning of the illness.

SMALL HOUSE CONSTRUCTION.

THE Royal Sanitary Institute some time ago appointed a committee to consider any simplification of construction and sanitary arrangements of rural houses which would tend to reduce cost without foregoing essential sanitary principles. The chairman was Sir Henry Tanner, C.B., late principal architect to the Office of Works, and the members were Professor Bostock Hill, county medical officer of health for Warwickshire, Mr. H. Percy Boulnois, late engineering inspector to the Local Government Board, and two architects—Mr. Searles-Wood and Mr. Osborne Smith.

The committee, finding that much of its report would

apply equally to urban housing, extended its observations to cover such buildings. It notes, in the first place, that to secure good housing it is important that the number of houses to the acre should be limited, but does not discuss the conditions upon which this number should be determined. It points out, however, that in laying out a building estate for houses of the character under consideration the arrangement of roads and footpaths has a considerable bearing on the cost of the houses. The committee considers that a 40 ft. space between fences, with a 12 ft. metalled road in the centre, and 5 ft. paths of gravel or tar paving, separated from the roads by grass borders, would be sufficient. This may be the case in rural districts, but it may be doubted whether 40 ft. is enough in suburban estates which, by the growth of the town, may presently become urban. The opinion is expressed that economy is chiefly to be sought in the selection of the type of houses and in the form of construction, though it is recognized that the cost may to some extent be affected by local by-laws requiring the employment of unnecessarily expensive materials and involving excessive labour. The Local Government Board has drawn the attention of local authorities to the need of amending by-laws, and it is understood that those now in force are to be annulled and new issued.

The report then discusses the general principles by which construction should be governed, and points out that the short supply of timber and its excessive cost will necessitate economy in its use and the adoption of substitutes, including cement and concrete and steel. Standardization both in design and materials will reduce cost, but must be kept within reasonable limits; for instance, the same plan can be adopted for a large number of houses with slight modification, to prevent monotony in the external design and to provide for degrees of accommodation. Bricks, tiles, slates, piping, taps, baths, and sinks are already standardized, and the principle could be extended to concrete steps or thresholds, window sills, door frames, windows, and ranges and fireplaces. The important point is noted that a 9 in. brick wall cannot be depended upon to resist driving rain, and must, therefore, in nearly all cases be rendered outside or rough cast with cement and sand. Outside walls, it is said, should be built in cement in the proportion of one of cement to six of sand, and the less exposed surfaces may be left uncovered. The ground floor, of concrete not less than 4 in. thick, should be laid on 6 in. of hard dry core of some kind, such as dry rubble or brick rubbish, or chalk. For the finish of the floor of the living room in urban houses some form of covering laid on a waterproof mixture and composed of sawdust, cement, asbestos and magnesite, is recommended, but for rural housing, tiles laid on 2 in. of well rolled tar paving in place of the concrete is suggested. For the floors of an upper story the committee is unable to suggest any alternative to wood which would effect economy even at the present price of timber. It is stated, however, that the adoption of one-story houses, avoiding wooden floors and staircases, would lead to an economy of some 12½ per cent., and that such buildings would, without reducing the area of the rooms, cover so small an additional area of ground as to make practically no difference when the proposed number of houses to the acre is limited. Relatively large windows are advised, the glass area being not less than one-sixth of that of the floor in living rooms and not less than one-eighth in bedrooms, and it is pointed out that double hung sashes have some advantage over casements in respect of ventilation.

The provision of a bathroom is advised as close as possible to the source of hot-water supply, and preferably on the ground floor, in order to save piping and to avoid the use of pressure boilers involving periodical expense for cleaning and repairs. It is truly said that a bath 5 ft. long is quite sufficient, and the economy in cost of floor space and hot water is considerable. Various methods of supplying hot water are considered, but preference is given to a range with a washing copper attached. With regard to the disposal of excreta, it is stated that where sewers are available manholes and traps can be largely dispensed with under skilful advice. Where sewers are not available, where there is no public scavenging and no system of water supply, earth closets should be installed and the contents dug into the land. Where there is a water supply

cesspools may be installed if arrangements can be made for emptying and cleansing them. Excreta from single or double cottages, or in large quantities, as from groups of cottages having a plentiful supply of water, could be biologically treated and the effluent passed into or upon the land, or into a ditch, or temporarily retained in tanks upon allotments for use in dry weather.

Finally, it is said that for the present it will be necessary to undertake the repair of old houses, especially in manufacturing areas, where at the present time there is often scarcely a habitable house of any size unoccupied. The shortage is so great that under any practical scheme the number of houses completed in each of the three following years will only make up the shortage and not leave a house vacant. Further, in order to supply the ordinary give and take of people requiring to move from one district to another there ought always to be 5 or 10 per cent. of houses unoccupied. This means that it must be five or six years before it will be safe to demolish any of the existing houses in most urban districts. It is said that every house ought to be repaired and kept in as good condition as possible during the next ten years, because it will be impossible to build except at a high price, and materials will be difficult to obtain. Houses should only be condemned when the surrounding conditions make it impossible to keep them fit for occupation.

SANATORIUM TREATMENT FOR TUBERCULOUS EX-OFFICERS AND MEN.

IN modification of previous Army Council Instructions a new Instruction has been issued regarding the admission to sanatoriums of officers and nurses who retire from the army on account of tuberculosis. If the disease is decided by the Ministry of Pensions to be attributable to or aggravated by military service, officers and nurses will be eligible for treatment, whether they are insured or not under the National Insurance Acts. In such cases the Ministry of Pensions will arrange for admission to a sanatorium, and will defray the cost of treatment, less a deduction from the allowance payable to the officer or nurse.

A memorandum (233 A/I.C.) has been issued to Insurance Committees by the English Insurance Commissioners, with reference to new arrangements for the provision of residential treatment for tuberculous discharged soldiers, etc. Under these arrangements, which came into operation on January 1st, 1919, the whole cost of treatment provided in accordance therewith, so far as it is not made out of insurance funds, will be defrayed by the Exchequer. For the purpose of arrangements between an Insurance Committee and a local authority undertaking a scheme for the area, the Commissioners and the Local Government Board have prepared a model agreement under which it is contemplated that the Committee's payment should be made on the basis of a weekly payment per patient, the rate being subject to the approval of the Commissioners and the Board. The cost of all residential treatment provided for discharged persons will be defrayed from a special fund entitled "The Discharged Soldiers' Sanatorium Fund."

It will be observed that the Army Council Instruction deals only with the case of tuberculous military officers and nursing sisters, while the Insurance Commissioners' memorandum refers to discharged soldiers, sailors, and women of the auxiliary services. It is worthy of note that twelve months ago a conference of representatives of the City Corporation and metropolitan borough councils unanimously expressed the opinion that the time had arrived when the unsatisfactory overlapping system existing with regard to the treatment of tuberculous persons in London should be abolished by the formation of one central authority to be responsible for the administrative control of all matters concerning tuberculous persons, whether insured or uninsured.

IN a communication to the Paris Société de Biologie Bruntz and Spillmann suggested that trench foot is due to an insufficient amount of vitamins in the diet.

THE *Journal of the American Medical Association* of December 7th states that in a communication made to the Editor last March, Mr. George E. Vincent, president of the Rockefeller Foundation, suggested the publication of a Spanish edition, so that the journal might be available to medical readers in Central and South America. The Board of Trustees has approved the proposal. The first number is to appear in January.

NEW YEAR HONOURS.

THE following is a continuation of awards and promotions for valuable services rendered in connexion with the war:

K.C.B.

Lieut.-General Thomas Herbert John C. Goodwin, C.B., C.M.G., D.S.O., K.H.S., A.M.S.
Major-General George J. H. Evatt, C.B., M.D.

K.C.M.G.

Major-General William Watson Pike, C.M.G., D.S.O., A.M.S.
Temporary Colonel John Atkins, C.M.G., A.M.S.

K.B.E.

Colonel (temporary Major-General) Samuel Hickson, C.B., A.M.S.

Colonel Harry Edwin Bruce Bruce-Porter, C.M.G., A.M.S. (T.F.).

Colonel William Hale White, R.A.M.C., chairman and consultant, Queen Mary's Royal Naval Hospital, Southend.

Temporary Colonel Sir Ahmroth E. Wright, C.B., F.R.S., A.M.S.

Temporary honorary Colonel John Lynn Thomas, C.B., C.M.G.

Dr. Edward Napier Burnett, chairman of the Economic Committee of the Army Medical Department, War Office.

Dr. George Archdall Reid.

C.B.

Temporary Colonel Arthur George Phear.

Temporary Lieut.-Colonel Herbert Lightfoot Eason, C.M.G., R.A.M.C.

Captain and Brevet Major (temporary Colonel) Robert Ernest Kelly, R.A.M.C. (T.F.).

C.M.G.

Colonel Hugh A. Chisholm, C.A.M.C.

Colonel Eugene J. O'Neill, D.S.O., N.Z.M.C.

Temporary Colonel (honorary Surgeon-General) Charles Snodgrass Ryan, A.A.M.C.

Lieut.-Colonel (temporary Colonel) Samuel Arthur Archer, R.A.M.C.

Lieut.-Colonel (temporary Colonel) Evelyn Pierce Sewell, D.S.O., R.A.M.C.

Lieut.-Colonel (acting Colonel) Harry Arthur Leonard Howell, R.A.M.C.

Lieut.-Colonel Charles Hilton Furnivall, R.A.M.C.

Lieut.-Colonel Frank Marshall, A.A.M.C.

Lieut.-Colonel Claude Buist Martin, R.A.M.C.

Lieut.-Colonel John Weir West, R.A.M.C.

D.S.O.

Major (acting Lieut.-Colonel) John Evans, R.A.M.C. (T.F.).

Major Ernest Edward Austen, 28th (C. of L.) Battalion London Regiment, attached R.A.M.C.

Major Leonard Avery Avery, R.A.M.C. (T.F.), attached 1/1st Royal Bucks Hussars (Yeomanry).

Captain (acting Lieut.-Colonel) Ralph Alexander Broderick, M.C., 1/2nd Battalion South Midland Brigade Field Ambulance, R.A.M.C. (T.F.).

Temporary Captain William Mackenzie, R.A.M.C., 9th Battalion South Staffordshire Regiment.

C.B.E.

Colonels: Thomas H. M. Clarke, C.M.G., D.S.O., A.M.S., George Dansey-Browning, A.M.S., George Devey Farmer, C.A.M.C., Richard Jennings, K.H.S., late A.M.S., Henry Carr Maudsley, C.M.G., A.A.M.C., and John Stewart, C.A.M.C.

Temporary Colonel Charles Coley Choyce, R.A.M.C.

Lieut.-Colonels (temporary Colonels) Cathcart Garner, R.P., late R.A.M.C., Graham Patrick Dixon, A.A.M.C., and Murray McWhae, C.M.G., A.A.M.C.

Lieut.-Colonels: Charles W. Cathcart, R.A.M.C. (T.F.), Sir Joseph Fayer, Bt., R.A.M.C. (T.F.), and Henry John McLean, N.Z.M.C.

Temporary Lieut.-Colonel Edward Newbury Thornton, O.B.E., S.A.M.C.

Acting Lieut.-Colonel Francis Frederick Muecke, R.A.F.

Major (temporary Lieut.-Colonel) Wm. Marshall Macdonald, N.Z.M.C.

Major (honorary Lieut.-Colonel) Martin William Flaek, R.A.F.

Major Henry John Neilson, late R.A.M.C.

Temporary honorary Major Henry S. Souttar, R.A.M.C.

O.B.E.

Colonel William Henry Bull, V.D., A.M.S., T.F. Res.

Brevet Colonel Charles John W. Tatham (ret. pay), late R.A.M.C.

Lieut.-Colonels (temporary Colonels): Harold Percy Waller Barrow, C.M.G., D.S.O., R.A.M.C., Robert Fowler, A.A.M.C., and Alfred Bertram Soltan, C.M.G., R.A.M.C. (T.F.).

Lieut.-Colonels: John Patrick Adye-Curran, R.A.M.C., Charles Bickerton Blackburn, A.A.M.C., Michael Boyle, R.A.M.C., Percy Gordon Brown, C.A.M.C., Edward Oliver B. Carbery, R.A.F., J. E. Hodgson, R.A.M.C., John Robert Mallins, late R.A.M.C., Peter Mitchell, R.A.M.C. (T.F.), Hugh Edwin Munroe, C.A.M.C., Richard Raikes, C.A.M.C., George Elliot Frank Stammers, R.A.M.C., John Colin Storey, A.A.M.C., Bertram Milne Sutherland, A.A.M.C., William

George Dismore Upjohn, A.A.M.C., Frederick Edward Apthorpe Webb, R.A.M.C.(T.F.), and Charleton Yeatman, A.A.M.C.

Majors (temporary Lieut.-Colonels): John Gray, R.A.M.C.(T.F.), Frank Alexander McCammon, M.C., R.A.M.C., Alfred Fay Maclure, A.A.M.C., H. William Greenwood Sutcliffe, R.A.M.C.(T.F.).

Majors (acting Lieut.-Colonels): Wm. Francis Ellis, R.A.M.C., John William Mackenzie, R.A.M.C.(T.F.), Thomas Barton Unwin, R.A.M.C.

Majors: Francis Teulon Beamish, A.A.M.C., Henry d'Arnim Blumberg, T.D., R.A.M.C.(T.F.), Andrew Seymour Brewis, N.Z.M.C., William Bruce, N.Z.M.C., John Frederick Burgess, C.A.M.C., Joshua John Cox, R.A.M.C.(T.F.Res.), William Dyson, R.A.M.C.(T.F.), David Moore Embelton, A.A.M.C., Niel Hamilton Fairley, A.A.M.C., Charles Napier Finn, A.A.M.C., William Rickards Galwey, M.C., R.A.M.C., Farquhar Gracie, R.A.M.C.(T.F.), Robert James McEwan, C.A.M.C., Brefuey Rolph O'Reilly, M.D., R.A.F. (Canadian Local Force), Harold Orr, C.A.M.C., Frank Harold Stephens, R.A.F., Gerald Charles Taylor, R.A.M.C.(T.F.), Frederick Beaumont Treves, R.A.M.C.(T.F.), George Charles Willcocks, M.C., A.A.M.C.

Temporary Major (acting Lieut.-Colonel) George Douglas Gray, R.A.M.C.

Temporary Majors: William Stewart Dickie, R.A.M.C., Thomas Martin Frood, R.A.M.C., and Maurice Grey Pearson, S.A.M.C.

Brevet Major George William Ellis, R.A.M.C.(T.F.).

Temporary honorary Major Thomas Houston, R.A.M.C.

Captain (temporary Lieut.-Colonel) Philip Sefton Vicker-man, R.A.M.C.(S.R.).

Captains (acting Lieut.-Colonels): Francis Ley Augustus Groaves, R.A.M.C.(T.F.), Thomas Blakeway Wolstenholme, R.A.M.C.(T.F.), and Frank Worthington, D.S.O., R.A.M.C.

Captain (temporary Major) Harold Cotterell Adams, R.A.M.C.(T.F.).

Captains (acting Majors): Thomas Yuille Barkley, R.A.M.C.(S.R.), Charles Botterill Baxter, R.A.M.C.(T.F.), Harold Burrows, R.A.M.C.(T.F.), Sydney James Clegg, R.A.M.C.(T.F.), William Henderson Davison, R.A.M.C.(T.F.), Walter Barham Foley, R.A.M.C.(S.R.), James Roberts Goodall, C.A.M.C., Thomas Watson Hancock, R.A.M.C.(T.F.), Thomas Douglas Inch, M.C., R.A.M.C., Lachlan Martin Victor Mitchell, R.A.M.C.(T.F.), Julian Taylor, R.A.M.C.(T.F.), William Warwick Wagstaffe, R.A.M.C.(S.R.), Alexander Pirie Watson, R.A.M.C.(T.F.), and Joseph Douglas Wells, R.A.M.C.(T.F.).

Captains: Rupert Briercliffe, R.A.M.C.(T.F.), Armando Dumas Child, R.A.M.C.(S.R.), David Livingstone Graham, I.M.S., John Inglis, R.A.M.C.(T.F.), Raymond Johnson, R.A.M.C.(T.F.), Arthur Ernest Jury, R.A.M.C.(T.F.), Thomas Fuller Kennedy, R.A.M.C., Hugh Ernest McColl, R.A.M.C.(S.R.), John Campin Newman, R.A.M.C.(T.F.), Benjamin Alexander Odlum, R.A.M.C., Andrew Picken, R.A.M.C.(S.R.), Jeffrey Ramsay, R.A.M.C.(T.F.), and John Sinclair White, R.A.M.C.(S.R.).

Temporary Captains (acting Majors): John Stanley Arkle, R.A.M.C., George Victor Bakewell, R.A.M.C., Richard Charles, R.A.M.C., John Harry Hebb, R.A.M.C., Wilfred George Mumford, R.A.M.C., Thomas Clark Ritchie, R.A.M.C., and Humphrey Bowstead Wilson, R.A.M.C.

Temporary Captains: James Connor M. Bailey, R.A.M.C., Amos Hubert Coleman, R.A.M.C., Noel Anthony Coward, R.A.M.C., James Anthony Delmege, R.A.M.C., Frank Holt Diggle, R.A.M.C., Robert Richard Elworthy, R.A.M.C., William Wood Forbes, R.A.M.C., Norman Stephen Gilchrist, R.A.M.C., attached R.A.F., Arthur Hyde Greg, R.A.M.C., Robert Douglas Laurie, R.A.M.C., Lancelot Raoul Lempriere, R.A.M.C., James Walter McLeod, R.A.M.C., Edward Irving Pownel Pellew, R.A.M.C., Charles W. Smith, R.A.M.C., and Kenneth Macfarlane Walker, R.A.M.C.

Temporary Lieutenant (acting Lieut.-Colonel) James Leatham Birley, R.A.M.C.

Temporary Lieutenant Kaikobad Rustonyf Madan, I.M.S.

Quartermaster and Major Aquila Claphaw, R.A.M.C. (ret. pay).

Quartermaster and Captain (temporary Major) Joseph T. Packard, R.A.M.C.

Quartermaster and Captain John Damian Chapman, R.A.M.C. (T.F.).

Temporary Captains and Quartermasters: Harry Lancelot Etherington-Smith, R.A.M.C., and James Varley, R.A.M.C.

M.B.E.

Captain Joseph Green, R.A.M.C.(T.F.).

Temporary Captain John Newton Martin, R.A.M.C.

Lieutenant (temporary Captain—acting Major) Reginald Anson Mansell, R.A.M.C.

Temporary Lieutenant John Ramsbottom, R.A.M.C.

Quartermasters and Captains: John Willfield Willsheer, R.A.M.C., and Richard C. Staples-Brown, N.Z.M.C.

Temporary Quartermasters and Captains: George Robert Spring, R.A.M.C., and Laurence Whittaker, R.A.M.C.

Temporary Quartermasters and Lieutenants: Walter James Baldwin, R.A.M.C., Frederick Wm. Cudmore, R.A.M.C., and Arthur Wm. Shreeve, R.A.M.C.

El Yuzbashi Halim Effendi Sulman Shoucair, Medical Corps, Egyptian Army.

Second Bar to Military Cross.

Captain Hugh Kingsley Ward, M.C., R.A.M.C.(S.R.), attached 2nd Battalion K.R.R.C., M.C. gazetted October 20th, 1916.

Bar to Military Cross.

Temporary Captain (acting Major) James Biggam, M.C., R.A.M.C. Captain Edwin John Bradley, M.C., R.A.M.C.(S.R.), attached 1/3rd (North Midland) Field Ambulance.

Military Cross.

Captain (acting Lieut.-Colonel) David Henderson Weir, R.A.M.C.(T.F.), attached 12th Field Ambulance.

Captain (temporary Major) Leslie Price Harris, R.A.M.C. (T.F.).

Captains (acting Majors): John Herd Beverland, R.A.M.C.(S.R.), attached 165th Ind. Combined Field Ambulance; William Roy Blore, R.A.M.C.(S.R.), attached 35th Field Ambulance; William Blacker Cathcart, R.A.M.C.(S.R.), attached 72nd Field Ambulance; Guy Oldham Chambers, R.A.M.C., attached Head Quarters Cavalry Corps; Leonard Milton, 24th (London) Field Ambulance, R.A.M.C.; Clarke Nicholson, R.A.M.C.(S.R.), attached 49th Field Ambulance; Arthur Patrick O'Connor, 11th Field Ambulance R.A.M.C.; Henry Edward Sutherland Richards, 2/1st West Lancashire Field Ambulance, R.A.M.C. (T.F.); Frederick Ernest W. Rogers, 23rd (Home Counties) Field Ambulance, R.A.M.C.(T.F.); Alfred Bernard Pavey Smith, 2/6th Battalion London Field Ambulance R.A.M.C.

Captains: Colin Anderson, 4th Australian L.H. Field Ambulance; Roderick Duncan Cameron, R.A.M.C.(S.R.); Mervyn Clement Cooper, R.A.M.C.(S.R.); Norman Harrison Dempster, N.Z.M.C., attached 3rd Battalion New Zealand Rifle Brigade; Ernest McMurtrie Dunlop, R.A.M.C.(T.F.), attached 14th Battalion Worcester Regiment; Geoffrey Bede Egerton, R.A.M.C.(S.R.); Francis Henry Guppy, R.A.M.C.(S.R.), attached 8th M.A.C.; William Francis Theodore Haultain, R.A.M.C.(S.R.), attached 29th Lancers, I.A.; Norman John MacKay, A.A.M.C., attached 55th Battalion Australian Infantry; George Leslie Matthews, 1st (London) Sanitary Company, R.A.M.C.; Leonard James Sheil, R.A.M.C.(S.R.); Herbert Watt Torrance, R.A.M.C.(S.R.); Alexander Duncan Shanks Whyte, N.Z.M.C., attached 2nd Brigade Head Quarters, New Zealand Field Artillery; Leonard Henry Wootton, R.A.M.C.(T.F.).

Temporary Captains (acting Majors): John Gibson, 98th Field Ambulance, R.A.M.C.; Ernest Leon Maunsell Hackett, 8th Field Ambulance, R.A.M.C.; George Beddingfield Holroyde, R.A.M.C.

Temporary Captains: Richard John Aherne, R.A.M.C., attached 9th Battalion North Staffordshire Regiment; Angus Buchanan, 49th Field Ambulance, R.A.M.C.; Charles Francis Drew, No. 9 Field Ambulance, R.A.M.C.; Gordon John C. Fernier, R.A.M.C., attached 129th Ind. Combined Field Ambulance; Alexander Hepburn Macklin, R.A.M.C., attached 11th Battalion, West Yorkshire Regiment; Harry James Rae, R.A.M.C., Charles Reginald Reckitt, R.A.M.C., attached 26th Brigade, Royal Field Artillery; Francis Charles Robbs, R.A.M.C., attached 1st Battalion, Royal Irish Regiment; Stanley Parke Stoker, R.A.M.C., attached 1/6th Battalion, West Riding Regiment (T.F.); John Wylie, R.A.M.C., attached 6th Battalion, East Yorkshire Regiment.

Temporary Lieutenant Burjorji H. Kamakaka, I.M.S., attached 1st Battalion, 123rd Outram's Rifles, I.A.

Quartermasters and Captains: Thomas Barclay, 15th Canadian Field Ambulance, C.A.M.C.; Thomas Barradell, 1st North Midland Field Ambulance, attached 1/1st Northumbrian Field Ambulance, R.A.M.C.(T.F.); William Goodly, 136th Field Ambulance, R.A.M.C.

Temporary Quartermaster and Lieutenant James Moore, 16th Field Ambulance, R.A.M.C.

Kaisar-i-Hind Medal.

John Dodds Price, officiating Civil Surgeon, Nowgong, Assam.

Royal British Red Cross.

The Order of the Royal British Red Cross has been conferred upon a large number of the various nursing staffs for valuable services rendered.

PROMOTIONS.

To be Major-General: Colonel (temporary Major-General) J. Thomson, C.B., A.M.S.

To be Brevet Colonels: Lieut.-Colonels (temporary Colonels) R. S. H. Fuhr, C.M.G., D.S.O., R.A.M.C.; E. E. Powell, D.S.O., R.A.M.C.; A. G. Thompson, C.M.G., D.S.O., R.A.M.C. Lieut.-Colonels P. S. O'Reilly, C.M.G., R.A.M.C.; Sir J. G. Rogers, K.C.M.G., D.S.O., ret. pay (late A.M.S.).

To be Honorary Colonel: Lieut.-Colonel W. H. W. Elliot, D.S.O., ret. I.M.S.

To be Brevet Lieut.-Colonels: Major (temporary Colonel) D. Rorie, D.S.O., R.A.M.C.(T.F.). Majors (temporary Lieut.-Colonels) J. A. Anderson, R.A.M.C.; J. G. Bell, D.S.O., R.A.M.C.; R. A. Bryden, D.S.O., R.A.M.C.; P. J. Hanafin, D.S.O., R.A.M.C.; H. S. Peeke, R. of O., late R.A.M.C. Major (acting Lieut.-Colonel) A. W. Gibson, R.A.M.C. Majors W. H. G. H. Best, R.A.M.C.(S.R.), and G. F. Sheehan, D.S.O., R.A.M.C. Temporary Majors F. S. Brereton, ret. (late R.A.M.C.); G. P. Humphrey, R.A.M.C.

To be Brevet Majors: Captain (acting Colonel) W. G. Wright, D.S.O., R.A.M.C. Captains (temporary Majors) R. E. Barnsley, M.C., R.A.M.C., A. A. Jubb, R.A.M.C.(T.F.), and M. J. Williamson, M.C., R.A.M.C. Captains (acting Majors): W. F. Christie, R.A.M.C., A. T. J. McCreery, M.C., R.A.M.C., L. W. O. Taylor, R.A.M.C.(S.R.), and W. L. Webster, R.A.M.C. Temporary Captains: P. H. Bahr, D.S.O., R.A.M.C., R. Bruce-Low, R.A.M.C., S. P. Hodgkinson, R.A.M.C., W. J. Tulloch, R.A.M.C.

British Medical Journal.

SATURDAY, JANUARY 11TH, 1919.

LETHARGIC ENCEPHALITIS.

WE publish elsewhere (p. 45) an account, necessarily rather long, of the clinical characters of the disease which, under the name "lethargic encephalitis," has now been made notifiable in England and Wales. It is founded on a very comprehensive essay by Dr. A. S. MacNalty, in a report just published by the Local Government Board. The clinical features, and the pathological conditions, of which also we give a short account, strongly support the opinion that the disease, though bearing a considerable resemblance to acute poliomyelitis, which it is believed occasionally attacks the basal ganglia, is a distinct disease due to some different virus. Dr. MacNalty, indeed, suggests that the relation between the two may be comparable to that known to exist between typhoid and paratyphoid fevers. The results of an epidemiological inquiry recorded by Dr. S. P. James in the report lend support to the opinion that the two diseases are distinct.

To elucidate the disease from the epidemiological aspect, Dr. James adopted the following method: From the data available up to the end of June, 1918, comprising 338 reports, those relating to some unquestionably distinct disease (for example, tuberculous meningitis) and instances of classical acute poliomyelitis were excluded. From the remainder, 126 were chosen as presenting the symptom-complex of encephalitis lethargica, while the residue, 137 cases, were labelled "poliomyelitis." A comparison was then instituted between the statistical groups so formed, the assumption being that, since one of the groups might be presumed to contain a large proportion and the other but a small proportion of the "new disease," should any significant difference emerge as between these groups, then an *a fortiori* case in favour of the separation of encephalitis lethargica and acute poliomyelitis would be established.

The most striking difference made out was that of age incidence; only 20.6 per cent. of the 126 test cases were in persons under 10 years of age, as contrasted with 57.1 per cent. in the control "poliomyelitis" series; this difference is many times the size of its "probable error." The general fatality figures (20 and 15.8 per cent.) did not diverge appreciably, but the fatality rates at ages deviated enough to accentuate the contrasting age distributions already noticed. Thus only 8 per cent. of the total deaths in the test series were of persons under 10, and another 8 per cent. fell to the age group 10-19; the corresponding percentages in the control series were 52.6 and 31.6.

The seasonal distributions of the test and control cases were similar in form, but the maxima of the former distribution were much higher, so that a much greater proportion of the cases was concentrated on each side of April 20th. Were it justifiable to assume that reported cases afford a fair index of seasonal prevalence—a proposition which Dr. James is rather disposed to question—a further point of distinction is suggested, since the "poliomyelitis" series might well be the tail of a distribution normally attaining its maximum later in the season, while the test series does not suggest this. The regional distribution of

lethargic encephalitis is compared with that of acute poliomyelitis. Of the 51 sanitary districts from which cases of the "new syndrome" were reported there were 26 in which a case of acute poliomyelitis also occurred between January and June, 1918; in the remaining 25 this evidence was not forthcoming. We concur with Dr. James in thinking that the evidence just epitomized is consistent with the hypothesis that lethargic encephalitis and acute poliomyelitis are epidemiologically distinct, although the data relating both to seasonal prevalence and local distribution (evidently important links in the chain of inference) seem to us hardly strong enough to bind opinion at present.

The general conclusion, from all the evidence available, that the disease is not a form of acute poliomyelitis, agrees with the view expressed by Professor A. Netter at the Paris Académie de Médecine on May 7th, as noted in our columns on June 15th, p. 677. The Local Government Board report does not contain any historical discussion, but it appears to imply that the syndrome is new. This, however, is more than doubtful. Netter quoted some evidence in support of the view that the disease occurred at the end of the seventeenth and beginning of the eighteenth century in Germany, and more definite evidence that it occurred in Upper Italy and Hungary in 1890, when the pandemic of influenza of that epoch was declining; very suggestive cases occurred in nearly all the countries of Europe, and in the United States, in the spring of 1895. However this may be, there seems no doubt that the disease occurred in Vienna in the winter of 1916-17. A discussion upon it took place at the Viennese society of psychiatry in April, 1917; it was at this meeting that Von Economo gave his description of the cases, and the discussion revealed the fact that the total number was very considerable. The microscopical examinations made in Paris seem to agree closely with those made by Professor Marinesco in this country and recorded in the report.

The disease is a general infection, characterized by manifestations, originating in the central nervous system, of which the most frequent and characteristic are progressive lethargy and paralysis, usually bilateral but unequal, of cranial nerves, especially the third pair. The symptoms are due to inflammatory lesions occurring at the base of the brain, but also involving grey matter and accompanied by changes in the Purkinje cells of the cerebellum, which appear to be primary, not inflammatory.

MEDICAL RESEARCH AND THE LAY PRESS.

A FEW weeks ago we called attention to the danger of raising in the public mind expectations of a speedy triumph over disease which facts do not warrant, and the Medical Correspondent of *The Times* has recently provided abundant evidence that our fears were not unreasonable. The readers of that newspaper were informed on December 24th that our knowledge of the epidemiology of influenza and the zymotic fevers was very defective, and this unfortunate circumstance was confidently attributed to a taboo on the study of fevers "in the so-called highest medical circles in this country." All that was necessary, we were told, was to set groups of workers to attack each disease, aiming at "certainty with regard to the germ causing the epidemic and at the discovery of a real cure." That kind of research, "properly equipped and paid, would probably rid us of measles, scarlet fever, and even tuberculosis, in two decades, always provided

that administrative action followed the acquisition of new knowledge. It is simply a question of public action." In fact, "if the public is determined enough it can be rid of disease."

Lest it might appear that the laches of "the highest medical circles" in the matter of zymotics was not a sufficient explanation of our present failure to make an end of disease in general, the whole secret was revealed upon January 6th under the headline, "The New Medicine: Disease as a Process." Medical thought in the past, it was asserted, had formulated a theory of disease in terms of *post-mortem* findings, had attempted to base the "facts of life" upon the "facts of death," and was thus led to "the vision of trees and not of forests." The "New Medicine" conceives "disease as a long process, possibly a life-long process, with, as the end, phenomena of the process, the 'fibrous changes.'"

Upon this last sentence we may comment by quoting a passage from Sydenham: "By this ladder and by this scaffold, did Hippocrates ascend his lofty sphere—the Romulus of medicine, whose heaven was the empyrean of his art. He it is whom we can never duly praise. He it was who then laid the solid and immovable foundation for the whole superstructure of medicine, when he taught that *our natures are the physicians of our diseases*. . . . Herein consisted the theory of that divine old man. It exhibited the legitimate operations of Nature, put forth in the diseases of humanity. Now, as the said theory was neither more nor less than an exquisite picture of Nature, it was natural that the practice should coincide with it. This aimed at one point only—it strove to help Nature in her struggles as best it could. With this view, it limited the province of medical art to the support of Nature when she was enfeebled, and to the coercion of her when she was outrageous. . . . The great sagacity of this man had discovered that Nature by herself determines diseases and is of herself sufficient in all things against all of them."¹ The "New Medicine" then is not garishly new after all, and indeed Sydenham did not rate morbid anatomy much higher than does *The Times*.

Nor have the efforts of the "highest medical circles" checked advances in the science of epidemiology so completely as we are asked to believe. It exercised the best intellects of our profession in all ages. In England, thanks to Sydenham and Huxham in the remoter past; to Murchison, Graves, and Farr in the days of our fathers; and to such investigators as Buchanan, Creighton, Ross, and Brownlee in our own time, the subject has slowly developed into a branch of exact science, and it is becoming possible to hope that the laws of epidemic succession will eventually be formulated with the precision attained in physical and chemical science. This end will not be reached speedily, but, like all ends worth attaining, only through the gradual accumulation of knowledge and by its analysis. The task can be accomplished only by the co-operation of minds differently endowed and variously trained. Some important methods of research are not yet familiar to the generation of investigators upon whom we can at present draw. What connexion is there in the apprehension of most young medical men between, say, Fourier's theorem and measles? Yet the most important epidemiological work upon that zymotic of the last few years has been Brownlee's determination of its periodicities by the method of harmonic analysis.

We owe some apology to our readers for dilating upon these well known considerations, and we take

no pleasure in commenting on the insufficient acquaintance with ancient and modern medical history displayed by the writer to whom we have referred. But we conceive that the dissemination of such doctrine by a great newspaper is a grave evil. The way to promote research is to identify it in the public mind with disinterested intellectual curiosity, not to take its name in vain, using it as a guarantee of promises, some of which may never be fulfilled, none of which can be fulfilled at short notice. Medical research is not a new thing, but one of the oldest things in the world, and we are not now suddenly emerging from the dark ages into a flood of light. We wish to see removed from the path of our young investigators obstacles over which the feet of their not less gifted predecessors stumbled; this cannot be done by falsifying medical history and talking of research as if it were a nostrum.

MEDICAL DEMOBILIZATION.

We are asked by Lieut.-General Sir Thomas Goodwin, Director-General A.M.S., to publish the following communication: The Director-General, Army Medical Service, much regrets that owing to the very urgent requests of the National Service Ministry, the civil hospitals, and the Insurance Commissioners, it has been found necessary to demobilize a large number of R.A.M.C. officers at short notice to meet the pressing needs of the civil population. The Director-General greatly regrets that he has not found it possible to see or write personally to all officers on demobilization, but he would like to assure them of his sincere gratitude for their valuable services, and of his warm recognition of the very heavy personal sacrifices made by many of them in their desire to serve their country, and to render assistance to the sick and wounded of the army.

NEW YEAR HONOURS.

FURTHER new year honours have been published in later Supplements to the *London Gazette*, and the list is not yet complete. The distinction of K.C.B. (Military Division) is conferred upon Lieut.-General T. H. Goodwin and Major-General George Evatt. Sir Thomas Goodwin, who has been Director-General of the Army Medical Service since March 1st, 1918, is the son of an officer of the Army Medical Service. He received his medical education at St. Mary's Hospital, London, and entered the Army Medical Service in 1893; he served on the North-West Frontier of India in 1897, receiving the D.S.O. He was with the British Expeditionary Force at Mons, the Marne, and Ypres, and was awarded the C.M.G. in 1915, in which year he became officer in command of No. 14 General Hospital, Wimereux. Afterwards he became Assistant Director of Medical Service to the British Recruiting Mission in America, and was brought home from that appointment to occupy that which he now holds. He has already won golden opinions as an administrator, and his success in this respect is, we conceive, in no small measure due to the fact that until quite recently he was actively engaged in the practice of medicine and surgery. Sir George Evatt is one of the veterans of the Army Medical Service, whose share in bringing about its present satisfactory status was as large as that of any man. He entered the service in 1865, and became surgeon-general in 1899; he served in the Perak expedition in 1876, in the Afghan war, 1878-80, the Suakin expedition 1885, and in the Zhoob Valley, 1890, and earned official recognition on each occasion. He became surgeon-general to the Second Army Corps in 1902, and received the C.B. on relinquishing that appointment. He has been a voluminous and effective writer on many military and medical subjects, and published a valuable report on the medico-military topography of the Persian Gulf and the Euphrates and

¹ Preface to the third edition of Syd
Latham's translation, p. 26.

Medical Observations.

Tigris valleys, the result of a journey made in 1873. Colonel John Atkins, who receives the K.C.M.G., had already seen service with the Imperial Yeomanry Forces in the South African war before he became a member of the personal staff of Viscount French in France. After he returned to this country he became Deputy Director of Medical Service, Home Forces. He was educated at Guy's Hospital, and before the war was engaged in practice in London. The same honour is conferred upon Major-General William W. Pike, A.M.S., who has been D.M.S. (First Army) in France and in British East Africa. In addition to the announcements made last week the K.B.E. (Military Division) is conferred upon Colonel J. Lynn Thomas, C.B., C.M.G., and Colonel H. E. Bruce Porter, C.M.G., for valuable services rendered in connexion with the war. Sir John Lynn Thomas, a surgeon of cosmopolitan reputation, a member of the surgical staff of King Edward VII Hospital, Cardiff, and a member of the Council of the Royal College of Surgeons of England, received the C.B. in recognition of his services with the Welsh Hospital in South Africa. He is at present consulting surgeon to the Western Command and deputy inspector of military orthopaedics. To his initiative is due the establishment of the Prince of Wales's Hospital for Limbless Soldiers and Sailors at Cardiff. Sir Harry Bruce Porter is a Territorial medical officer, who has been in command of the 3rd London General Hospital since the beginning of the war, but was for a time in charge of a British general hospital in Mesopotamia. The honour of K.B.E. (Civil Division) has been conferred upon Dr. Edward Napier Burnett, chairman of the Economic Committee of the Army Medical Department, War Office; on Dr. G. Archdall Reid, whose philosophic writings on heredity and cognate subjects have made his name well known; and on Colonel William Hale White, physician to Guy's Hospital, and chairman and consultant, Queen Mary's Royal Naval Hospital, Southend. We publish elsewhere the first part of the complete list of the New Year honours so far announced, and will only here note that the C.B.E. has been conferred on two officers of the Canadian A.M.C., on three officers of the Australian A.M.C.—Colonels Henry Maudsley, C.M.G., Physician to the Melbourne Hospital, G. P. Dixon, and M. McWhae—on two officers of the New Zealand A.M.C., and on Lieut.-Colonel E. Newbury Thornton, of the South African Medical Corps, a member of the central Council of the British Medical Association. The same distinction has been conferred on Dr. H. H. Dale, F.R.S., who has done much valuable work for the Medical Research Committee, on Dr. A. Eichholz, senior assistant medical officer to the Board of Education, and on Dr. Samuel Lyle, Commissioner of Medical Services in the Ministry of National Service.

POST-GRADUATE WORK IN LONDON.

In our last issue for 1918 we published a report of a meeting at which an organization called the Inter-Allied Fellowship of Medicine was established. Its object is to draw together the members of the medical profession in all the inter-allied countries with a view to promoting intercourse and co-operation for the advancement of medical science and public health. Sir Arbuthnot Lane is the Treasurer of the Fellowship, and Sir StClair Thomson, Mr. Douglas Harmer, and Mr. J. Y. W. MacAlister are the honorary secretaries. The Royal Society of Medicine has invited medical officers of the Dominions, of the United States, and all the Allies, to use its house and library (1, Wimpole Street); notices of arrangements at the various hospitals are posted there. Inquiries addressed to the principal hospitals in London have met with a cordial response, and invitations have been extended to overseas visitors to visit the hospitals, attend lectures, and witness operations. These offers have been appreciated, but it is felt that something more should be done and done quickly in view of the fact that the

heads of the Dominion and American Army Medical Corps are granting leave for two, three or four months, according to length of service, to enable the medical officers to attend definite post-graduate courses in this country. Owing to the want of such courses in London some of the medical officers are taking advantage of the post-graduate courses already established in Paris. Further communications have now been addressed to the eleven London teaching hospitals suggesting that as the medical schools could not individually provide post-graduate courses they might combine and provide a joint course. The suggestion has been favourably received, and meetings of the school councils and of the deans are being held this week with a view to formulating a scheme which can be promptly put into force.

REOPENING OF MUSEUMS.

SIR SIDNEY LEE's spirited protest against "our bureaucrats' short-sighted indifference to the beneficent influence of history and art on public sentiment" reminds us that science also has suffered by the closure of museums. The protest was timed by the approaching departure of men of the Overseas forces who before they go away are getting or will shortly get leave in England. It reminds us also of the fact that the Museum of the Royal College of Surgeons of England, the finest collection of anatomical and pathological specimens in the country, and one of the finest in the world, has been closed for several years. The closure was not due to bureaucratic indifference, but to a prudent anxiety to put the specimens in a place where they would be safe from air raids. The wisdom of this policy was proved in the most convincing way by the damage certain big bombs did within a very short distance of the museum. This danger is now past, and we hope that we may soon be able to announce that the collections have been restored to their places. We have no doubt that by none is early restoration more ardently desired than by the Conservator, Professor Keith, and the Pathological Curator, Professor Shattock, and we have equally little doubt that the Council will do everything in its power to push the work on. It has been reported on several occasions that, owing to the loss of skilled assistants due to military demands, the preparation and display of war specimens has been delayed. It is possible, therefore, that the restoration of the general collections may be retarded for the same reason. This is a case for special consideration by the authorities responsible for demobilization, all the more that it is urgent not only that the museum should be got into order as early as possible at a time when many officers of the overseas medical corps are anxious to undertake graduate study in London, but also because no time should be lost in preparing and displaying the war specimens, only a certain proportion of which are yet available for study. The museum seemed pretty full before the war and whether it will be possible to display all the new specimens in the present rooms we do not know. Should an extension prove necessary Government ought to be willing to meet the cost.

CANADIAN WAR PAINTINGS.

A VERY interesting collection of pictures, giving a complete artistic record of Canada's share in the war, is now on view in the Royal Academy Galleries at Burlington House. It forms the first part of the Canadian War Memorials, which will eventually be housed in a building designed for the purpose at Ottawa. The present exhibition comprises nearly 400 paintings by some seventy British and Canadian artists. Almost every phase of military activity, from troopship and training camp to hospital, is recorded by artists on the spot, each working according to his own ideas and methods. Besides the immense mural decorations by famous painters like Lavery, Augustus John, Charles Sims, and Laura Knight, and the fine battle-pieces by Richard Jack, there are many smaller paintings, drawings, and engravings of war subjects, together with

portraits of Canadian generals and V.C.'s. The artistic merit of the works varies greatly, but the exhibition as a whole does credit to the enterprise and catholic spirit of the committee. The group of three large decorative panels by Gerald Moira, entitled "No. 3 Canadian Stationary Hospital, France," is noteworthy for its charm of colour and poetic treatment. Nevinston's four panels "The Roads of France" are remarkably effective in conveying the impressions made upon an original and sensitive mind by the endless file of motor transport along a poplar-lined road, an infantry column on its way to the trenches, and the wrecked landscape of the front line. Among the smaller works the six Brangwyn etchings—in particular the fantasy named "Dixmude"—should be studied by admirers of that master and deserve to be shown in a better light. Lastly may be mentioned the lifelike paintings of the Canadian Cavalry Brigade by A. J. Munnings; lovers of horses will find much interest in comparing these with the admirable sketches in oils made last year by Algernon Talmage when working with a Canadian mobile veterinary unit. The collection was opened by the Canadian Premier, Sir Robert Borden, on January 4th in the large gallery where Augustus John's vast unfinished cartoon, "The Pageant of War," takes up the whole of one wall.

HOSPITALS OF THE FUTURE.

MR. WILLIAM GRAY, chairman of the governors of the Victoria Infirmary, Glasgow, in addressing a meeting on New Year's Day, said that if the plans of the Government for the establishment of a Ministry of Health materialized, it was evident that one of the first requirements would be a great increase of accommodation in the hospitals. It was quite impossible to give adequate treatment in the homes of the people for many of the cases which had hitherto been so treated. Speaking of the epidemic of influenza which had prevailed in Glasgow during the last three months, he said that many lives might have been saved had adequate hospital treatment been available. Greatly increased accommodation in hospitals was desirable and necessary; he believed that it was not unreasonable to think that the form this would take in the future would be by a very large increase in the number of hospitals of simple construction, capable of economical management. If such hospitals were built they might be used for the treatment of simple cases. The present large hospitals could be used for serious cases and those requiring apparatus of an elaborate nature, and in their research work, the study of therapeutics, the teaching of medical students, and the training of nurses could be carried on. Such large hospitals as he had described would, he imagined, either be State-aided or wholly financed in some such way as were the fever hospitals at present by the rates; but he thought it would be a misfortune for the general hospitals as they now existed if the cost were placed on the State. Nor did he think it necessary that the State should interfere with their management, or with the cost of their upkeep in any way.

THE CONDITIONS OF SERVICE OF HOSPITAL NURSES.

THE long hours of work of hospital nurses, the low remuneration they received, and the absence of any comprehensive organization to provide them with means of subsistence when they have ceased to be able to work, was something of a scandal before the war. Their services during the war with the military hospitals, not only abroad but at home, have increased the esteem in which they are held, and the decline in the purchasing power of money has, by an irony of fate, rendered their pecuniary position still more unsatisfactory. We are glad to notice various indications that the question is being seriously considered by hospital managers. The chairman of the Victoria Infirmary, Glasgow, speaking at the annual meeting last week, said that it had been decided to increase the salaries

of the nurses—a thing, he said, which should have been done long ago—and to reduce the weekly hours on duty from sixty-five to fifty-six. He had to add, however, that the increase of the nursing staff, made necessary by the reduction of the number of hours on duty, implied the provision of additional accommodation, but this he hoped would be done within the next few weeks. At the annual meeting of the Royal Infirmary, Edinburgh, the chairman mentioned that arrangements were in progress to provide accommodation for the larger number of nurses which would be needed in order to carry out the proposed improvement in the conditions as to the hours of service of the nursing staff. We have received notice also that the committee of management of the Great Northern Central Hospital has revised the scale of remuneration to sisters. Night and theatre sisters will receive £50 a year, increasing to £60; ward and casualty sisters £42, rising to £55. All sisters with six years' service will receive an additional £10 per annum. Staff nurses will be paid £40 a year. The salaries of nurses were increased some time ago, the rates now being: First year nurses £16 a year, second year £18, third year £20, and fourth year £28.

PHAGOCYTOSIS BY THE ALVEOLAR CELLS OF THE LUNGS.

THE character of the cells lining the alveoli of the lungs, and the part they play in the removal of minute foreign bodies or the products of inflammation, have been much discussed. In the adult human being, and among experimental animals, particularly in the guinea-pig, phagocytosis of foreign particles in the alveoli is readily demonstrated. But the origin of the phagocytic cells here has long been in dispute. Three possibilities present themselves. These cells may be wandering macrophages from the blood stream, or cells desquamated from the general epithelial lining of the alveoli, or a special variety of alveolar lining cell. A posthumous paper¹ by the late Major W. T. Sewell, late lecturer in pathology, School of Medicine, Newcastle-upon-Tyne, does something to clear up this disputed matter. Guinea-pigs and rabbits were used as experimental animals, and Chinese ink, carmine, pigeon's blood, staphylococci, tubercle bacilli, the spores of *Oidium albicans*, trypan blue, and colargol were employed to test the phagocytic capabilities of the cells after intratracheal injection. The intravenous injection of carmine was found to produce no deposit of carmine particles in the epithelium of the bronchi or alveoli, or in the lumen of the alveolar vessels of the rabbit. Major Sewell's extensive experiments led him to conclude that the alveolar phagocytes or macrophages are actually derived from cells forming part of the alveolar lining. They are to be distinguished from the wandering macrophages or large mononuclear phagocytic cells of the blood by their failure to take up carmine when that dye is injected during life into the blood stream. This failure he explained as possibly due to the exceptional anatomical relations of the alveolar cells to the fluids of the body, for they are really surface cells in contact with the outer air. If the carmine particles reach the air cells by way of the bronchi and bronchioles they are taken up by the alveolar epithelial phagocytes. There are other points of similarity between these cells and the large mononuclears of the blood; thus their behaviour under the action of a stimulus is similar. The alveolar epithelium is believed to be derived from the bronchial epithelium; it is pointed out that the power of phagocytosis is lost when the bronchial epithelium specializes by producing cilia. There is nothing to show whether the alveolar phagocytes are to be regarded as a specialized form of alveolar epithelial cell or not.

M. LAVERAN, the discoverer of the malarial parasite, has been elected president of the French Académie de Médecine for 1919.

¹ *Journ. Path. and Bact.*, Cambridge, 1918, xxii, 40.

THE WAR.

THE LAST PHASE.

THE outstanding feature of the dispatch, dated December 21st, 1918, of Field-Marshal Sir Douglas Haig (published in the Supplement to the *London Gazette* of January 7th) is the great series of victories won by the British forces between August 8th and November 11th. The general effect cannot be better expressed than by quoting the Field-Marshal's own words:

The Work of the Troops.

In three months of epic fighting the British armies in France have brought to a sudden and dramatic end the great wearing-out battle of the past four years.

In our admiration for this outstanding achievement the long years of patient and heroic struggle by which the strength and spirit of the enemy were gradually broken down cannot be forgotten. The strain of those years was never-ceasing, the demands they made upon the best of the empire's manhood are now known. Yet throughout all those years, and the hopes and disappointments they brought with them, the confidence of our troops in final victory never wavered. Their courage and resolution rose superior to every test, their cheerfulness never failing however terrible the conditions in which they lived and fought. By the long road they trod with so much faith and with such devoted and self-sacrificing bravery we have arrived at victory, and to-day they have their reward.

The work begun and persevered in so steadfastly by those brave men has been completed during the present year with a thoroughness to which the event bears witness, and with a gallantry which will live for all time in the history of our country. The annals of war hold record of no more wonderful recovery than that which, three months after the tremendous blows showered upon them on the Somme and on the Lys, saw the undefeated British armies advancing from victory to victory, driving their erstwhile triumphant enemy back to and far beyond the line from which he started, and finally forcing him to acknowledge unconditional defeat.

In the decisive contests of this period, the strongest and most vital parts of the enemy's front were attacked by the British, his lateral communications were cut and his best divisions fought to a standstill. On the different battle fronts 187,000 prisoners and 2,850 guns were captured by us, bringing the total of our prisoners for the present year to over 201,000. Immense numbers of machine guns and trench mortars were taken also, the figures of those actually counted exceeding 29,000 machine guns and some 3,000 trench mortars. These results were achieved by 59 fighting British divisions, which in the course of three months of battle engaged and defeated 99 separate German divisions.

Yet, as has been seen, when the tide of battle turned and the British armies advanced to the attack, throughout practically the whole of the long succession of battles which ended in the complete destruction of the German powers of resistance, the attacking British troops were numerically inferior to the German forces they defeated. It would be impossible to devise a more eloquent testimony to the unequalled spirit and determination of the British soldier, of all ranks and services. We have been accustomed to be proud of the great and noble traditions handed down to us by the soldiers of bygone days. The men who form the armies of the empire to-day have created new traditions which are a challenge to the highest records of the past, and will be an inspiration to the generations who come after us.

The rapid advance of the British forces throw a great strain upon the transport services. The strain was also very great upon the medical services, and the admirable manner in which it was met is recognized by Field-Marshal Haig in the following paragraph:

Medical Services.

During the period under review the Medical Services under the direction of Lieut.-General C. H. Burtchall, deserve special commendation, for the initiative, energy, and success which have characterized all branches of their work. The rapid advance of the troops and the extended front on which operations were carried out during the final stages of the offensive created problems in connexion with the collection, evacuation, and treatment of wounded which had not been met with in the earlier

phases of the war. These difficulties were met with the most admirable promptness and efficiency.

My thanks are due to the consulting surgeons and physicians for the invaluable assistance given by them in the application of new methods to the treatment of wounds and disease; to the R.A.M.C. officers and permanent staffs of the convalescent depôts for work which enabled many thousands of men to be restored to the fighting ranks; to the untiring and devoted work of the British Red Cross Society, the Order of St. John, and all members of the nursing services, whose unremitting kindness and constancy has done much to alleviate the sufferings of the sick and wounded; and, finally, for the very valuable services rendered by the base hospital units and by individual officers of the Medical Corps of the United States of America attached to the British army.

THE PALESTINE DISPATCH.

THE dispatch from General Sir Edmund Allenby, G.C.B., Commanding-in-Chief, Expeditionary Force in Palestine, covers the period from September 19th to October 26th. It records a most complete victory, and stamps General Allenby as one of the great soldiers of the time.

The total defeat of the Seventh and Eighth Turkish Armies and the retreat of the Fourth on September 25th rendered it possible to advance on Damascus, and the city was entered on the morning of October 1st by cavalry forces which had broken up the Fourth Turkish Army and captured 20,000 prisoners.

During the period covered by the dispatch 75,000 prisoners were captured; of these, 200 officers and 3,500 other ranks were Germans or Austrians. In addition, 360 guns were taken, together with the transport and equipment of three Turkish armies, as well as 800 machine guns, 210 motor lorries, 3,500 animals, 89 railway engines, and 468 carriages and trucks. The advance was so rapid that before the movement to Damascus over 2,600 square miles had been overrun. One consequence of the rapidity of the operations was that the administrative services and departments had to carry a heavy burden both in front of and behind railhead. The dispatch refers to the difficulties of the medical service in the following terms: "The rapid advance has rendered difficult the task of evacuating the sick and wounded. The difficulty was increased by the large number of prisoners who, after marching for days with little food or water, surrendered in a state of extreme weakness, unable to march another day. The care and evacuation of these men has heavily taxed the medical services, who have worked untiringly."

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

LIEUT.-COLONEL W. T. FREEMAN, R.A.M.C.(T.F.).

Lieut.-Colonel William Thomas Freeman, R.A.M.C. (T.F.), died suddenly from heart failure on December 23rd, 1918, at Reading, where he was officer in charge of the Redlands War Hospital. He was educated at St. Bartholomew's Hospital, and took the M.R.C.S. and L.R.C.P. diplomas in 1879; in 1890 he obtained the F.R.C.S., and in 1899 the M.D. degree of Durham University. After holding several house appointments, he went into practice at Pangbourne, where he was medical officer of Bradfield College. For the last twenty-nine years he practised in Reading, where he became medical officer to H.M. prison, and physician and head of the skin department of the Royal Berkshire Hospital. Since 1908 he held a commission as lieut.-colonel R.A.M.C.(T.F.) in the 3rd Southern General Hospital, and served as such at Oxford at the beginning of the war. On the opening of the No. 1 War Hospital at Reading he became officer in charge of the medical division there, and took command of the Redlands War Hospital; he was also for a considerable time president of officers' medical boards at the Reading War Hospitals. Colonel Freeman was a keen sportsman, and wrote several papers on shooting and fishing, as well as a number of contributions on medical subjects. He was president of the Oxford and Reading Branch of the British Medical Association in 1898-99, and again in 1912-13. During the past four years he had felt the strain of hard work at the war hospitals, but he never relaxed his efforts, and died, as he wished, in

the midst of his work. He leaves a widow, a daughter, and one son, at present in the Royal Air Force.

CAPTAIN A. J. MILNE, S.A.M.C.

Captain Arthur John Milne, South African Medical Corps, was returned as having died on service, in the casualty list published on December 30th, 1918. He was educated at Aberdeen, where he graduated M.B. and Ch.B. in 1901, also taking the D.P.H. in 1903, and subsequently the certificate of the London School of Tropical Medicine. He had served for some time as medical officer of health in Mauritius, and held the post of assistant medical officer of health at Johannesburg, in the Transvaal, when he joined the South African forces.

Wounded.

Lieutenant M. S. Ullah, I.M.S. (temporary).

Repatriated.

Major F. G. Lescher, M.C., R.A.M.C. (S.R.).

Captain J. B. Ball, R.A.M.C. (temporary).

Captain F. T. H. Davies, R.A.M.C. (temporary).

Captain E. Underhill, R.A.M.C. (temporary).

DEATHS AMONG SONS OF MEDICAL MEN.

Beaman, Edgar Robert Hulme, Captain Royal Air Force, son of the late Surgeon-General A. H. Beaman, I.M.S., killed in an aeroplane accident, December 17th, aged 26. He was originally in the Royal Engineers (T.F.), in which he became lieutenant on June 1st, 1916, and subsequently transferred to the R.A.F., and was recently promoted to captain.

Hawke, E. A. F., Lieutenant Royal Field Artillery, son of Dr. E. D. H. Hawke of Shortlands, Kent, died at Woolwich, December 27th. His commission as lieutenant was dated July 19th, 1917.

Macdonald, Charles, Second Lieutenant London Scottish and Machine Gun Corps, son of Dr. D. G. G. Macdonald of Bayswater, died of influenza and pneumonia at Grantham Military Hospital on November 28th. At the beginning of the war he enlisted in the 14th (County of London) Battalion of the London Regiment, the London Scottish, with which he had served in France since 1914, and had received the 1914 Star. He got his commission on August 1st, 1917, and subsequently transferred to the Machine Gun Corps.

Mann, Horace, Lieutenant 3rd Battalion Dorsetshire Regiment, attached King's African Rifles, younger son of Dr. W. S. Mann of Birmingham, died of enteric fever at Zomba, British Central Africa, on December 25th. His commission as lieutenant was dated July 1st, 1917.

[We shall be indebted to relatives of those who were killed in action or died in the war for information which will enable us to make these notes as complete and accurate as possible.]

HONOURS.

THE following medical officers of the Royal Air Force have been mentioned in dispatches for distinguished service in war areas: Fleet Surgeon R.N., Charles Edward Cortis Stanford, D.S.O. (Adriatic); Surgeon R.N., William A. S. Duck (Adriatic), and temporary Surgeons R.N., Robert Sydney Overton (Mediterranean) and Arthur Leslie Dykes (Adriatic).

Supplements to the *London Gazette*, dated December 30th and December 31st, contain lists of names of officers of the A.M.S. and R.A.M.C. (Regulars, Special Reserve, and Territorial) and of the colonial and American medical services submitted by Sir Douglas Haig in his dispatch dated December 8th, 1918, as deserving of special mention.

A Supplement to the *London Gazette* of January 6th contains a list of names of persons mentioned by the Earl of Cavan, Commander-in-Chief of the British Force in Italy, for distinguished service and devotion to duty. It includes 58 officers, non-commissioned officers, and men of the medical services, and 12 members of the nursing services.

England and Wales.

THE MIDWIVES ACT, 1918.

THE Midwives Act, 1918, which came into force on January 1st of this year, contains certain provisions of which the medical profession should be aware. Under Section 8 the Central Midwives Board, if it decides to remove a midwife's name from the roll, may in addition prohibit her from attending women in childbirth in any other capacity, subject to a fine not exceeding £10, unless

she proves that she acted in a case of emergency. Section 14 requires a midwife in any emergency to call in a registered medical practitioner, and requires the supervising authority in such case to pay the practitioner's fee according to a scale fixed by the Local Government Board, which is as follows:

	£	s.	d.
(1) Attendance at confinement requiring operative assistance and subsequent necessary visits during the first ten days ...	2	2	0
(2) Attendance at confinement without operative assistance and subsequent necessary visits during the first ten days ...	1	1	0
(3) Assistance for the administration of an anaesthetic ...	1	1	0
(4) Any visit not covered by (1), (2), and (3), including any necessary prescription: Day (8 a.m. to 8 p.m.) ...	0	3	6
Night (8 p.m. to 8 a.m.) ...	0	7	6
with the addition of the mileage fee usual in the district.			

Under the same section the medical practitioner called in is required as a condition of payment of his fee to state in his claim to the local supervising authority the nature of the emergency; and the midwife must report forthwith to the local supervising authority each case of emergency in which she has called in a medical practitioner, stating the nature of the emergency and the name of the practitioner. Many local authorities who are not supervising authorities under the Midwives Act, 1902, are already, with the Board's sanction, paying the fees of doctors called at the instance of midwives to patients in their districts. As from January 1st, 1919, this obligation passes to the local supervising authority, which is empowered under the new Act to recover the fee from the patient, or her husband, or other person liable to maintain her, unless it is satisfied that they are unable by reason of poverty to pay such fee. The Act gives the Central Midwives Board power to suspend a midwife from practice in cases where it does not consider it necessary to strike her name off the roll.

ANTIRABIC TREATMENT AT PLYMOUTH.

THE Local Government Board has lately issued a revised memorandum on the procedure recommended to be followed when persons are bitten by dogs suspected of being rabid. It is advised that the wound should be treated as soon as possible with undiluted carbolic acid or with undiluted izal or similar disinfectant, which should come in contact with all parts of the wound, and then be washed out with water or dilute disinfectant. When no disinfectant of the kind is at hand, the wound should be thoroughly washed and irrigated with hot or cold water. If the dog is pronounced on competent veterinary authority to have had rabies, the person should be urged to secure specific antirabic treatment as soon as possible. This can now be given at Plymouth by Dr. W. L. Pethybridge, pathologist of the South Devon and East Cornwall Hospital, with material specially supplied from Paris through the courteous co-operation of Professor Roux, Director of the Pasteur Institute. The country is very much indebted to Professor Roux for the assistance so generously given by the Pasteur Institute in Paris. The preparation of the material not only calls for the highest skill and accuracy, but is necessarily tedious. A series of rabbits' cords have to be prepared, of varying virulence, and, under the system originally devised by Pasteur himself, inoculations with twelve cords were necessary before the treatment was completed. Arrangements have been made with the Board of Agriculture for informing the medical officer of health of any person in his district bitten by a dog suspected of being rabid, and the subsequent procedure is defined in the memorandum. Where a person who needs antirabic treatment cannot stay at Plymouth at his own expense for the two or three weeks necessary for the course, the medical officer of health is instructed to represent the matter to the district council in order that funds may be provided, and the Local Government Board will sanction reasonable expenditure incurred for this purpose. The *London Gazette* of January 7th gave a return under the Diseases of Animals Acts showing the distribution of new cases of rabies in England. During the week ending January 4th the diagnosis of rabies was confirmed in

ten cases of animals in England; eight of these were dogs, and two were other animals. Seven of the dogs were in Devonshire, the other dog and the two other animals were in Cornwall.

Scotland.

EDINBURGH ROYAL INFIRMARY.

DURING the year ended October 1st, 1918, the total number of patients treated in the Edinburgh Royal Infirmary was 12,481, a number greater by 459 than in the previous year. The average time each patient was under treatment was 27.55 days, against 26.7 days last year. The number of out-patients treated in the medical and surgical departments and in the special departments was 38,064. The total ordinary income was £64,255, an increase of over £12,000, due as to more than half to an increase in subscriptions. The ordinary expenditure, however, had increased to over £87,000. Considerable outlay would be necessary this year for upkeep work which had been been put off owing to the war. The medical staff had represented to the managers that an extension of the arrangements for dental work for patients in the hospital had become necessary, and that they desired a fully equipped department for massage and physical therapeutics. The managers had been compelled, owing to circumstances arising out of the war, to postpone the establishment of these departments, and they had had to close the department of medical baths. They were aware that the accommodation provided for electrical and x-ray work was too restricted, and they realized that a new nurses' home, suitable for the increased nursing staff, was urgently required. The hope was expressed that the public would shortly provide funds for these purposes. The infirmary has continued to provide three large wards, containing 116 beds, for the treatment of sailors and soldiers; 21 of the former and 646 of the latter were admitted during the year.

CARE OF THE BLIND IN SCOTLAND.

At the annual meeting of the Royal Blind Asylum and School, Edinburgh, when the Lord Provost was in the chair, the Rev. Dr. Burns, chairman of the directors, said that the allowance to the blinded men had been increased by 10s. a week at the beginning of the year, an addition of 6s. being made later on. To meet these calls an appeal to the citizens of Edinburgh for £10,000 had been made, and £7,300 had been received. Newington House for Scottish blinded soldiers and sailors had been nearly full all along. Men had been sent out equipped to carry on work in their own localities, and inspectors visited them regularly to encourage their establishment in business. For carrying on the after-care work of blinded soldiers and sailors a sum of upwards of £42,000 had been subscribed in the home country, in the colonies, and from Scots in the United States of America. Professor Darroch, speaking of the educational department, said that the age of compulsory school attendance for the blind had been extended from 16 to 18; this would render it possible to carry out a scheme of higher education for the blind if the public gave the necessary support. Such a scheme had been largely successful at West Craigmillar; some of the pupils were doing good work in teaching, in music, and as organists. The Carnegie Trust had made a grant of £5,000, and promised double this if a similar sum could be raised before June.

Ireland.

MIDWIVES (IRELAND) ACT.

THE Local Government Board for Ireland has, with regard to the administration of the Midwives (Ireland) Act, 1918, amended the Dispensary Rules, so that after January 1st, 1919, Article 15 (ii) of these rules shall be read and have effect as if the following proviso were added thereto, namely:

Provided that a medical officer of a dispensary district shall not be obliged in compliance with the directions of such ticket to attend in a case of midwifery with a midwife who is not

certified under the Midwives (Ireland) Act, 1918, if he is satisfied that the dispensary midwife is available and can be placed in charge of the case without any risk to the patient.

THE DUBLIN MILK SUPPLY.

In a report of a bacteriological investigation of the city of Dublin milk supply Mr. D. Houston, Lecturer on Agricultural Bacteriology in the Royal College of Science of Ireland, lays before the inhabitants of the city the present condition of their milk supply and shows what experience has proved to be the best practical lines of reform. The report, which is based on a series of analyses made from May to November, 1917, will be found to furnish information valuable to all who take an interest in the production of clean wholesome milk. In a comparative table is shown the wide difference in the bacterial content of different types of Dublin milk, and yet, it is pointed out, these types are all sold at the same price. The report would seem eminently calculated to educate public opinion on a question of the greatest civic and national importance.

Correspondence.

ENDURANCE IN AORTIC INSUFFICIENCY.

SIR,—Colonel Rudolf's case (BRITISH MEDICAL JOURNAL, January 4th, 1919, p. 7) is a timely and much-needed lesson to the large group of cardiac pessimists. After puberty the endocarditic variety of aortic insufficiency is consistent with good heart health for years, because the valve changes are not necessarily progressive, the aortic root is not involved, and the coronary arteries—orifices and stems—are free. On the other hand, the degenerative form, usually syphilitic (and the war has taught us how common is this variety), is always serious, because the sclerosis is progressive, the root of the aorta is involved, and the coronary arteries, orifices and branches, one or other or both, are attacked. These vessels control the prognosis; if involved, as they may be, at the sinuses of Valsalva alone, the heart muscle cannot be healthy.

But my chief object in writing is to put on record the case of a medical man, aged 70, seen on June 12th, 1912, who had cycled twenty-two miles to Oxford and returned the same way. He had had aortic insufficiency for twenty-five years, following arthritis and iritis; the diagnosis confirmed by Broadbent and others. The previous week he had cycled to Bath in one day, more than sixty miles. He was a spare, red, muscular man, with very sclerotic arteries, moderate hypertrophy of the heart and a loud diastolic murmur, collapsing pulse, etc. He said there was nothing the matter, but in arranging for an annuity he wished some idea of his expectation of life. I asked him to return for examination June 12th, 1922, but he died, I heard, suddenly, two years ago. He stated that he had used more than 14 lb. of morphine, and had taken at least 100,000 injections! The skin was everywhere scarred from the hypodermic needle. Perhaps the case illustrates the truth of the clinical axiom of my friend Dr. Ellis of Elkton, Md.—"Hippocraticus rusticus," Weir Mitchell used to call him—Opium alone retards the progress of a chronic disease.—I am, etc.,

Oxford, Jan. 5th.

WILLIAM OSLER.

THE ADMINISTRATION OF ANAESTHETICS TO SOLDIERS.

SIR,—Although Mr. Hilliard is not in agreement with my opinion (BRITISH MEDICAL JOURNAL, September 28th, 1918, p. 343) that chloroform or its mixtures should never be used to induce anaesthesia in the case of the young, hard, athletic type of patient, I am pleased to note that his own practice falls in with it. He states that upon the first sign of excitement or struggling a change should be made to ether. I have no objection to giving chloroform up to the stage of excitement, but it would appear to be an unnecessary waste of time. I am sure, too, that Mr. Hilliard will agree with me that in the case of young soldiers the stage of excitement is frequently reached before the coughing reflex has been destroyed.

I quite agree with Dr. Barton that my method is attended by an even more satisfactory result in a more delicate type of patient, and I have used it in many such

cases. In my paper, however, I was dealing with the difficult athletic type so frequently met with amongst soldiers. By using the method I have described I largely overcome these difficulties. If Dr. Barton would use a method whereby the administration may be begun by the inhalation of a dilute vapour which can be gradually and deliberately strengthened, and whereby deep anaesthesia can be produced without cyanosis, he will not encounter so many cases of spasmodic respiratory complications. I have noticed no deterioration in the quality of ethyl chloride.

I combine $\frac{1}{100}$ gr. atropine with the $\frac{1}{2}$ gr. morphine, and find this suitable for hypodermic injection in routine hospital cases. Contrary to Dr. Samways's impression, this quantity of morphine affects the average adult's pupil under anaesthesia to a very slight degree. This statement is based upon my experience of many hundreds of cases. I do not find that $\frac{1}{2}$ gr. morphine interferes in any way with the safe and satisfactory administration of chloroform; but, unlike Dr. Samways, I find an excellent guide not only in the pupil, but in the state of the corneal reflex. "Prodding the cornea" is, however, not my method of eliciting this delicate reflex. My contribution was not addressed particularly to the novice in anaesthetics, and I do not see that an apology is required on that account. I am familiar with Mr. Silk's mixture of chloroform 1 part and ether 15 parts, and regard it as a useful and comparatively safe anaesthetic to put into the hands of the inexperienced administrator. Doubtless it is in this respect that Mr. Silk recommends it. It is, however, in minor degree subject to the defects of all chloroform-ether mixtures, as pointed out in my paper, and is quite useless to combat the difficulties of the induction period. If Dr. Samways desires me to suggest an anaesthetic and method of administration that are "fool proof," I regret I am unable to do so.—I am, etc.,

ARTHUR MILLS, M.D.,
Lecturer in Anaesthetics,
University of St. Andrews.

THE TRIANGULAR SPLINT IN THE TREATMENT OF FRACTURES OF THE HUMERUS.

SIR,—As the number of gunshot fractures under treatment during the last few years has been so great it is not surprising that surgeons should have constructed and published descriptions of splints almost exactly the same as those constructed before by other surgeons. For instance, in a paper by Captains Johnston and Buchanan (*Lancet*, January 26th, 1918, p. 136), a splint for gunshot fracture of the leg is described (Fig. 9) almost identical with one I described in the *BRITISH MEDICAL JOURNAL* in 1915 (vol. ii, p. 321); but Major Turner, in the *JOURNAL* of December 28th, 1918 (p. 711), describes a splint for fractures of the humerus which is so nearly the same as one I described in the *Lancet* on July 20th, 1918 (p. 77), in an article following one of his own on fractures of the femur, that I feel obliged to call attention to the similarity. Indeed, the picture of the splint, as shown in Fig. 1 of his paper, might very well have been drawn from my own splint, as I originally constructed it without the posterior support. When I published a description of this splint I referred to all other splints of the same type of which I could find published descriptions (except Middeldorpf's splint, which I had referred to at some length earlier in the paper, but the reference had to be omitted in order to shorten it), and pointed out in what way my own splint differed from them, and I think Major Turner might have done the same with regard to a splint almost identical with his own, a description of which was published in the same number of the *Lancet* as one of his own papers last summer.

The advantage of the secure fixation of the splint to the chest wall by plaster bandages seems to me very great, and I strongly advocated this in my paper. I fail to see why cases in which the "displacement is serious," or "there is much comminution," or where there is "severe septic infection," should not be at once placed on the splint; indeed, for such cases the splint is, I believe, much better than Jones's abduction splint (the one like a Thomas leg splint), and I have several times, with great advantage, removed from such splints limbs with fractures in very bad position, and placed them on my triangular splint, and allowed the patient to get about. I have now under my

care a patient with a gap of several inches in his humerus and my triangular splint, with the addition of a support for the elbow, and fixed to the chest with plaster bandages, makes the best possible support for the flail-like arm, and it leaves the extensor aspect of the forearm quite free for massage and electrical treatment of the extensor muscles, paralysed from injury of the musculo-spiral nerve at the seat of fracture.

I think the splint can be used even in cases in which wounds are present on the inside of the arm, in the axilla, and on the chest wall, but it would have to be constructed with gaps for wounds of the inner part of the arm or the chest wall, and without an apex for wounds in the axilla. But in the great majority of gunshot fractures of the humerus wounds are not present in these positions.

I am very glad Major Turner emphasizes the importance of not bringing the forearm across the chest in treating a fractured humerus, though, for reasons stated in my paper, I do not think the forearm should project directly forwards, but forwards and very slightly inwards.—I am, etc.,

Bristol, Dec. 29th, 1918.

CHARLES A. MORTON.

INFLUENZA.

SIR,—To those medical practitioners who are old enough to remember the epidemic of 1889 and succeeding years, Mr. Nash's note in your issue of December 21st, 1918, is interesting. He points out the remarkable difference in the age mortality of the earlier epidemics compared to our recent experience.

In the earlier year old age was the factor which determined life or death in the bronchopneumonic complications of influenza, but in the recent epidemic the reverse was the case. It was the young and healthy who were carried away. My personal experience has necessarily been very limited, but it makes for thought.

In one family the first to take the disease was a girl aged 22. Severe bronchopneumonia developed, from which, after a severe struggle, she recovered. Her brother, aged 20, took the disease, accompanied by similar symptoms, and died. The father, a man over 50 years of age, kept quite well, and his wife, rather younger than himself, had what one might call ordinary bronchial influenza. No others were attacked.

In another family the first to take the disease was a maid, aged 25, who struggled against the early symptoms, developed bronchitis, passing on to bronchopneumonia, and died. While she was ill the owner of the house became infected, and purulent bronchitis supervened, but he recovered. He is a man past middle age. The next to catch the infection was a step-sister of the maid, aged 31, who had come from a distance to nurse her. She fell ill exactly like her step-sister, and died. The lady of the house, past middle age, fell ill with ordinary bronchial influenza and recovered. An elderly trained nurse developed a severe cold.

At the time I was attending these cases I had a well marked case of febrile influenza, with slight catarrhal symptoms, in a lady 92 years of age, who made a good recovery.

No doubt, when statistics are available, this age mortality incidence will be fully brought out, and we must look to the bacteriologists to explain it. Perhaps it is due to a difference in the relative proportions of the micro-organisms, or in the amount of the filtrable virus. It is certainly remarkable that many of the larger epidemics since 1889 have had features which distinguished them from their predecessors. In one epidemic nasal catarrh has been the prominent feature; in another the fauces and larynx were principally involved. In some, gastro-intestinal symptoms have been common; in others the nervous system has been attacked. It is to be hoped that further research will explain these differences and work out more successful remedies than those we at present possess.—I am, etc.,

JAMES S. BLONFIELD, M.A., M.D.

Sevenoaks, Dec. 23rd, 1918.

TEMPORARY PEG LEGS.

SIR,—In his letter in the *BRITISH MEDICAL JOURNAL* (December 14th, 1918, p. 669) Dr. G. D. Freer expresses the opinion of an artificial limb maker that

"In leg stumps, as well as thigh stumps, the main point of support should be at the tuber ischii. . . ." Also he declared

that "in leg stumps the part of the leg below the knee is simply of use as a lever for bending the knee-joint. He had never seen a successful artificial leg where the bucket was around the leg instead of around the thigh, even when hinged to a corset around the thigh."

This is quite contrary to the opinion we have formed consequent on our experience with the peg leg made and used at Alder Hey, and described in the *BRITISH MEDICAL JOURNAL* of April 20th, 1918.

We have made and fitted 570 peg legs, more than 50 per cent. of which have been for below knee amputations. In none of the latter has recourse been had to an ischial bracing with one exception. The stump is simply fitted into an accurately fitting bucket and connected by a hinge with a thigh band. The exception is the case of Pte. H., and the surgeon in charge of his ward recommended the fitting of an ischial support. This was made and used for a few days, but the patient begged to have his previous peg leg substituted; it had simply had a band (1½ in.) immediately above the patella as a thigh support. In twelve cases of double below knee amputations two peg legs have been fitted and successful results obtained. A few days ago I saw one of these patients with two peg legs actually running along a corridor at a surprising speed, and without a stick or other aid.

Two of the double amputation cases have had specially designed artificial feet adapted to the peg legs and are becoming adepts in their use. I regret that Dr. Freer is at such a distance from Liverpool, as I feel sure we should be able to convince him of the utility and the practical advantages of a hinged peg leg without an ischial bracing if he would honour us with a visit.—I am, etc.,

W. H. BROAD, Major,

Physical Treatment Department, Alder Hey Military
Orthopaedic Hospital, Liverpool.

January 6th.

TUBERCULOSIS COLONIES.

SIR,—It seems to me to be necessary to define the usefulness of such schemes as the admirable Papworth Hall Colony mentioned in your article on the care of the consumptive soldier (December 21st, p. 693). As an extension of the sanatorium idea, as a place where the patient can go for education in the routine of living and for arrest of the disease, such places are badly needed. If the patient is enabled to learn a more suitable occupation so much the better, but there the use of a colony for a person in whom the disease has been arrested should end. Such a person will desire intensely to mix with his fellows, if possible to carry out his particular trade, and to cease to be a marked man in a "colony." This is also desirable from a therapeutic, social, and economic point of view. The healthiest thing for him, by which he can best keep his disease under control, is to mix with ordinary sound men under healthy and stimulating conditions of home and work. The really great task to which we are now called, and which will alone adequately grapple with the huge problem of tuberculosis, is to provide those conditions. In my opinion, wherever in this country there is a shortage of 2,000 houses at the present time, a serious attempt should be made to get out of the old methods and to start new towns in healthy surroundings, where men can work in hygienic factories, and at the same time live near the work in decent homes.—I am, etc.,

Letchworth, Dec. 21st, 1918.

NORMAN MACFADYEN.

THE PAST AND FUTURE OF THE CRUSADE AGAINST TUBERCULOSIS.

SIR,—In reply to the kind letter and comment of Dr. Camac Wilkinson (December 14th, 1918, p. 670) I should like to ask if there is any evidence to show that a tuberculin reaction, however slight, is never obtainable in the newly born? The source of my suggestion is an article by Dr. E. W. Goodall in the *Medical Annual*, 1911, from which the following extract is taken:

Anaphylaxis can be induced by the injection into the body of any foreign protein, and can be transmitted by the mother, or acquired. The reactions produced by the inoculation of tuberculin and mallein in tuberculosis and glanders are examples of anaphylaxis.

If this be true may one not expect that a state of sensitization to the tubercle bacillus can be transmitted by the mother? In which case the father, I suggest, may

possibly also possess this power to a greater or lesser extent.—I am, etc.,

R. E. TOTTENHAM, M.D., M.R.C.P.I.,
Temporary Surgeon Lieutenant, R.N.

Sheerness, Dec. 18th, 1918.

INCREASED GRANTS TO INSURANCE PRACTITIONERS.

SIR,—I am glad that the Insurance Acts Committee have only agreed to accept the scheme issued by the National Health Insurance Joint Committee in so far as it applies to the increased practice expenses.¹

The scheme as to increased cost of living appears to me to be very objectionable, and I fear that if it be accepted we shall be creating a vicious precedent. I protest against the net professional income of any practitioner being made the basis on which the grant shall rest. What right has the Joint Committee of Commissioners to inquire into or know what my professional income is? I always understood that their business was solely concerned with the administration of the Insurance Act. They now begin to pry into a man's private affairs, and I do not think it unfair to suspect them of ulterior motives—for example, just think what use might be made of the possible fact that a considerable percentage of insurance practitioners were making a net income of about £1,000 a year, or the more probable fact that many will not apply for the grant because they will not disclose what their incomes are when the time comes for the complete revision of the Insurance Act.

Under the scheme a man whose income is £1,001 per year will be excluded from the grant, while the man whose income is £999 will be included, and yet the increased cost of living presses equally on both. It must also be remembered that income tax becomes higher as one's income rises—for example, I have just heard of a man whose income in 1917 was £1,195 and whose tax was £161, and whose income for 1918 will be £1,267 and the tax £266! Again, one cannot deduct income tax in estimating net income.

It therefore appears to me that the proper basis of classification should be the net income derived from insurance practice only, and this would apply all round—the figures are easily available, and could be used by the Joint Committee without the suspicion which attaches to the scheme before us; and, finally, I think it would be better to refuse the grant altogether than accept it on the suggested scheme.—I am, etc.,

Plymouth, Dec. 16th, 1918.

S. NOY SCOTT.

SIR,—In the distribution of the grant which has been allocated to meet the increased practice expenses in rural and semi-rural areas, the suggestion of the National Insurance Joint Committee is that the money be divided amongst the different insurance areas in proportion to the number of insured patients who live more than one mile from a chemist. It is further suggested that each Insurance Committee divide its share of the grant among its panel practitioners in the same manner. The Insurance Acts Committee acquiesces, and advises Panel Committees to ask Insurance Committees to adopt this method of distribution.

Such a plan has the advantage of being easily and readily carried out, but I think it would not result in a fair distribution all round.

There are many practitioners whose practices lie in districts where there are no chemists. To my knowledge there are several who have no chemist nearer than six or eight miles. These practitioners would receive a grant on behalf of every patient on their lists, and many of them would be living within a short distance of the doctor's residence. They would be paid for a patient who lived next door.

On the other hand there are practitioners who cover just as much ground, they have the same, perhaps even greater, travelling costs, but just because there is a chemist, or perhaps more than one, in the neighbourhood in which they practise the grant of these practitioners will be limited to such patients as live outside a radius of one mile from those chemists' shops. These practitioners will be at a serious disadvantage compared with those first mentioned.

¹SUPPLEMENT, December 14th, 1918.

In my opinion a much fairer method would be to credit the grant to the mileage fund and distribute the money through that source. If paid through that fund, there would be much more likelihood of benefiting equally those whose practice expenses have been increased.

With regard to mileage schemes, which seem to differ in different areas, perhaps a short outline of the one in vogue here may be of interest. It is dated July 2nd, 1913, but payment was made out of the fund as from January 15th, 1913.

Briefly put it is as follows:

1. All sums received in respect of mileage are carried to a special mileage fund.
2. Payment of mileage is made only in respect of patients living in the rural sanitary districts of the different towns.
3. To calculate each practitioner's credit, there is placed to his account in respect of each patient on his list living more than three miles from the nearest panel doctor, one unit for every mile or part of a mile over three miles.
4. At the beginning of each quarter the sum of 4½d. is credited to each practitioner in respect of each unit in his account.
5. The Committee shall pay in each year to each practitioner a sum equal to the total of such quarterly credits, or an amount bearing the same proportion to such total as the amount of the special fund bears to the aggregate amount so credited to all practitioners on the panel, whichever shall be the less.

I should add that in 1913, when this scheme was put in force, the whole rural area was mapped out by the Insurance Committee, without any help from the doctors, and every village and hamlet marked in miles from the nearest available panel doctor, provided, of course, the distance was over three miles, and from that an alphabetical list of nameplaces was compiled, with a number after each to indicate the mileage units allowed in each instance. The practitioner has, therefore, no need to claim mileage, each new panel slip sent to him showing the mileage credited, if any.—I am, etc.,

Beverley, East Yorks,
December 30th, 1918.

GEO. SAVEGE.

MEDICAL DEMOBILIZATION.

SIR,—I see that in the JOURNAL of December 28th Dr. Eve of Hull deprecates the calling up of newly qualified medical men who will take the place of those like myself who voluntarily joined at the early period of the war to give any possible help in the work of the R.A.M.C. I trust that his plea for the defenceless hospital and for his own inconvenience in losing the help of a senior medical student may be overshadowed in the eyes of the Ministry of National Service by the fact that we who have long left our practices, have hopes that soon we may return to our families and to our diminished and precarious incomes.

We have the satisfaction of knowing that we are in the category of those members of the medical profession, in which list I should have been glad to include the name of Dr. Eve if I could have done so, who left homes and comforts to give assistance to our country, and we shall have the satisfaction in the future of feeling that our assistance has not been in vain.

Occasionally some of us during our military career have been impelled, through the absence or illness of a colleague, to do more than our share of work. Perhaps Dr. Eve, in his present isolation, may be able to summon to his aid sufficient energy and patriotism to do the same. We in our simplicity welcome the most "simple" way of being released from the army, in spite of Dr. Eve's protest.—I am, etc.,

Dec. 28th, 1918.

TEMPORARY MAJOR R.A.M.C.

THE FUTURE OF THE MEDICAL PROFESSION.

SIR,—Some thirty or more years ago the British Medical Association was surrounded by many difficulties and pervaded by many dissensions; we seem to be in a like position to-day. In those days we had at the head of the Association some good and statesmanlike men who dealt with the position in a bold manner. They thought that to give a new group of ideas to occupy the wearied and troubled minds of the profession was the best remedy, so they sent down to all the Divisions a group of propositions for them to consider and vote upon. I think the propositions were three; they were all carried except the second, which was amended at Leicester. The Council accepted the amendment, so the propositions of the Council were all

practically accepted, and became a part of what is now the constitution of the Association.

The meetings of the Association were never more popular or successful than at that time. Men were chiefly determined to find a common basis of harmony and unity, and the result was a great consolidation of the Association and the securing of more harmony and unity amongst the members than had ever existed. Differences disappeared, and we were prepared for anything.

All this year I have been suffering from a chronic illness which has rendered me unable to take any active part in affairs; but, though doctors might advise complete rest in bed, and though in a way I submitted to their wishes, they could not secure rest for the brain, and my mind has been more or less completely occupied with matters medico-political, and I have come to the conclusion that now is the time for an appeal to the Divisions—one on not quite so wide a basis as that mentioned above, but still one that would command attention.

We have a very important Committee—the Insurance Acts—which I suggest should be submitted to the profession through the Divisions for re-election or amendment. I do not know what it is supposed to represent now, whether the profession or the Association. It is so important that it ought to represent all sections of the profession. We know that important questions are asked of the Association by the Government, and the Association passes the questions on to this Committee for consideration and reply; and if it gives the same sort of reply that it gave on the question of fees for notification of diseases it will shatter the Association, and perhaps the whole profession. We must have a committee in which we can rest our whole confidence and faith. The best way of gaining our confidence and faith is by universal election through the Divisions. There is a good deal of talk about reconstruction; my own feeling is that any such reconstruction should be effected by the British Medical Association, not by Labour party or Ministry of Health.—I am, etc.,

Melton Mowbray.

JOHN T. TIBBLES, M.R.C.S. Eng.

* * The mode of election of the Insurance Acts Committee seems to come near to fulfilling Dr. Tibbles's ideal. It consists of four *ex officio* members—that is, the President of the Association, the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer; of six members elected by the Representative Meeting; and of twenty-two persons elected by the four *ex officio* members and the above-mentioned six elected members, acting together. Eighteen of the twenty-two are selected on a territorial basis from among members nominated by Local Medical Committees and Panel Committees, one is a member of the staff of a voluntary hospital nominated by the Hospitals Committee of the Association, one is nominated by the Medical Women's Federation, one by the Society of Medical Officers of Health, and one by the Poor Law Medical Officers' Association of England and Wales. The members of the committee so formed have power to co-opt as additional members such number (if any) of non-panel practitioners as shall be required to secure that four such practitioners shall be members of the committee.

ANTENATAL TREATMENT OF VENEREAL DISEASE.

SIR,—We have observed in the columns of the medical papers references to some work done by the London Hospital, Whitechapel, and the Thavies Inn venereal centre for pregnant women, and in these papers it is stated that the London Hospital venereal department and the Thavies Inn venereal centre provide the only residential treatment in the metropolis for pregnant women suffering from venereal disease.

We have been desired by the board of management of the London Lock Hospital to write saying that this is incorrect, as since May, 1918, the London Lock Hospital has had a large maternity department open and working at the Harrow Road institution. During the period from May to December, 1918, 68 married and unmarried pregnant women have been admitted and treated, and 42 women delivered, of whom 20 were suffering from syphilis and 22 from gonorrhoea, and 43 babies have been born.

We are informed by Mr. Charles Gibbs, F.R.C.S., and Mr. Arthur Shillitoe, F.R.C.S., honorary surgeons at Harrow Road, that all our pregnant syphilitic patients

have a full course of "606" before their confinements. The results are most gratifying, as a large proportion of these women give a negative blood test before confinement, and are delivered of children with a negative reaction.

In conclusion, we wish to state that intravenous injections of "606" have been given to expectant mothers and babies admitted to the Lock Hospital since February, 1916, and it must be noted that the figures given above only refer to the period May to December of last year. —We are, etc.,

KINNAIRD,

Chairman of the Board.

J. F. W. DEACON,

Deputy Chairman of the Board.

J. ERNEST LANE,

Chairman of the Medical Committee.

London, W., Jan. 3rd.

** We are glad to give publicity to the successful results achieved in the maternity department of the London Lock Hospital; but the statement that the Thavies Inn venereal centre and the London Hospital venereal department provide the only residential treatment in the metropolis for pregnant women with venereal disease was not made in our articles on the work of those institutions.

Obituary.

THOMAS BUZZARD, M.D., F.R.C.P.,

Consulting Physician, National Hospital for the Paralysed and Epileptic.

DR. THOMAS BUZZARD, for long one of the leading neurologists in London, died at his residence in Grosvenor Street, on New Year's Day, in his 88th year.

Thomas Buzzard was born in London, where his father was a solicitor. He went to King's College School, but left at the age of 15 to be apprenticed to a doctor; he afterwards became a student at King's College Hospital. He took the diploma of M.R.C.S. in 1854, and served in the cholera epidemic in Soho during that year. The war between Turkey and Russia had begun in October, 1853, and Omer Pasha had gained striking victories in the Danubian principalities; France and England declared war in March, 1854, and in that year it was resolved to send a small British medical staff to Omer Pasha; Buzzard was one of the first men selected. He was present at the siege of Sebastopol, took part in the second expedition to Kertch and the battle of the Tchernaiia, and after the fall of Sebastopol accompanied the Turkish army to the Caucasus, and shared in the establishment and conduct of a base hospital at Trebizond. He received the Crimean medal, with the clasp for Sebastopol, the Order of Medjidie, and the Turkish war medal. At the conclusion of peace in 1856 he returned to England, and graduated M.B.Lond. (1857). It is striking evidence of his power of application that he took the scholarship and gold medal in medicine. He went into partnership with the late Mr. J. G. French, F.R.C.S., and held the post of parish doctor to the St. Luke's district of St. James's Parish.

After six years he determined to give up general practice, took a house in Green Street, and, like some other men of his day who afterwards attained distinguished positions, added to a meagre income by journalistic work. It was his work for the *Lancet* that took him to the National Hospital for the Paralysed and Epileptic in Queen Square, and provoked his interest in neurology. He eventually became physician to that hospital; among the members of the staff Hughlings Jackson was his great inspiration and lifelong friend. Buzzard gradually obtained a very leading position as a consultant in neurology in London. His characteristics, both as a physician and a writer, were his punctilious care in the examination of cases and the record of the facts, and in the expression of the views and conclusions to which he was led. This quality marked all his contributions, among which we may note several on nervous disorders in Quain's *Dictionary of Medicine*. Most of his writings were on diagnosis and the significance of symptoms, and he contributed an important paper on retro-ocular neuritis to the *Transactions of the Ophthalmological Society* in 1897; but when the study of localization had been carried far

forward, the minds of neurologists turned to etiology, and Buzzard was one of the leaders of the movement. He contributed an interesting paper on the influence of micro-organisms and their toxins in the production of diseases of the nervous system to the Section of Neurology at the annual meeting of the British Medical Association in Edinburgh in 1898. Two years later, at the annual meeting at Ipswich he was president of the Section of Medicine, and took an effective part in the discussion on influenza as it affects the nervous system.

Dr. Buzzard married in 1869 and went to reside in Grosvenor Street, where he continued to practise until the weight of years induced him to withdraw from active work. For many years after his establishment in London he was a very regular attendant at the meetings of medical societies and had been president of the Clinical, Neurological, and Harveian Societies. He was also a corresponding member of the Société de Neurologie, Paris. He was a Fellow of King's College, London, vice-president of King's College Hospital, and represented the college on the senate of the University of London for some years.

He had two daughters and four sons, one of whom is Dr. Farquhar Buzzard, out-patient physician to the National Hospital for the Paralysed and Epileptic, and St. Thomas's Hospital, and another, Colonel F. A. Buzzard, R.A., D.S.O., who has commanded a brigade of field artillery in the war.

The sympathetic note we are able to publish from his colleague and lifelong friend, Sir David Ferrier, will excuse the enumeration of further details here, but we may add that Dr. Buzzard was a keen Volunteer and belonged to the Queen's Westminster Rifles from 1860 to 1867.

AN APPRECIATION BY SIR DAVID FERRIER, F.R.S.

Dr. Buzzard was a happy combination of qualities of the head and heart which gained him a distinguished professional reputation and endeared him to a large circle of friends and acquaintances. We have travelled far in neuro-pathology since Buzzard was an active contributor to medical literature, but nothing has surpassed the accuracy of his observations and delineation of the symptoms of nervous disease. The "sudden giving way of the legs" in locomotor ataxy ("Buzzard's symptom") is a classical example.

Clinical work was Buzzard's forte, and nothing was more noteworthy than the laborious care with which he observed and recorded his patients' symptoms and the effects of treatment. He was a highly successful practical physician. Not only in professional matters, but in affairs in general, Buzzard was a man of great caution and sound judgement, and was regarded by his colleagues of the National Hospital as the "Nestor" of the staff.

These qualities he exhibited in a striking manner in the long-continued dissensions which occurred some years ago between the medical staff and the then board of management. It was largely owing to Buzzard's judicious leadership, aided by the skilful advocacy of Dr. Ormerod, that the staff triumphed and harmony was established. Buzzard had a quiet, genial manner and catholic sympathies. He had many friends, not only in medical but in the most diverse circles, particularly artistic. Among the former, perhaps, Hughlings Jackson was the most intimate; among the latter many well known academicians. He was himself an artist of considerable merit, and it was his chief pleasure during his holiday rambles in various parts of the world to make water-colour sketches of the places he visited. In later years he loved to show these to his friends, and recall the pleasant memories with which they were associated. His experiences as a surgeon on the staff of Omer Pasha during the Crimean war were a favourite topic of conversation, and only three years ago he published his *With the Turkish Army in the Crimea and Asia Minor*, a memoir full of interesting reminiscences, and illustrated by his own sketches, which even in these days of abounding war literature will well repay perusal, if only to contrast the past and present.

Owing to the infirmities of age, Buzzard had for several years past ceased to concern himself with medical questions, but he kept up an active interest in the events of the day, and spent much of his time in the Arts Club or Athenaeum, where he read quietly or enjoyed pleasant intercourse with his many friends. He was happy in his

family relations, and naturally took great pride in the growing success and reputation of his sons in their respective careers.

He felt that his own work was done, and often expressed himself as quite content and ready to cross the Great Divide.

SIR WILLIAM BARTLETT DALBY, M.B.CANTAB.,
F.R.C.S. ENG.

Consulting Aural Surgeon to St. George's Hospital, London.

WE regret to have to record the death on December 29th, 1918, of Sir William Bartlett Dalby at his London residence. He belonged to an old Leicestershire family, and was born in 1840 at Ashby-de-la-Zouch. He was educated at Sidney Sussex College, Cambridge, taking the degrees of B.A. and M.B. (1866). Thence he went to St. George's Hospital. Living in the arch at the entrance to Constitution Hill on which stood the statue to the Duke of Wellington, he was a very constant student. On becoming qualified Mr. Dalby went to practise in Chester. The life of a general practitioner, however, did not appeal to him, and he relinquished it to study diseases of the ear in London. At that time the number of medical men with knowledge of diseases of the ear was limited. Toynbee, Allen, and Hinton had almost a monopoly of aural practice, and aural surgery was hardly recognized as a special branch.

During Hinton's last illness Dalby carried on his practice, and on Hinton's death took on his house in Savile Row. Dalby rapidly became known, and his opinion was regarded as one of high value. Articles written by him on ear diseases, and especially on the education of the deaf and dumb by lip reading, attracted attention.

In 1872 he became aural surgeon to St. George's Hospital, the first time any such appointment was made. For twenty years he was widely known to the poor, and, after his term of office had expired, patients came from all over England for many years to get his advice. His practice steadily increased, and in the eighties his waiting room was overfull. His opinion was sound, and he was very popular amongst his patients. The rapidity at which he worked made his manner appear brusque, so that at times he offended the too sensitive. In truth he was a kindly man, absolutely honourable, and one whose nature made it impossible for him to be guilty of a mean action.

In recognition of his work in connexion with the deaf and dumb and his contribution to the literature of aural disease he was knighted in 1886. In 1894 he was president of the Medical Society and afterwards the first president of the Otological Society. The papers of Wilhelm Meyer drew attention to the importance of adenoid tissue in excess in the nasopharynx, and the certainty that deafness might result from this condition added largely to Dalby's operative work. He was one of the first to remove exostoses from the external auditory meatus by means of a dental drill. Sir William Dalby came between the old school of aural surgeons and the new. When the work of Macewen, Ballance, and others broadened the range of aural operations, he was keenly interested but was content to watch newer methods in the hands of younger men. Modern innovations in aural practice were carefully examined and he did not hesitate to condemn methods which did not seem to him to be justifiable.

Sir William Dalby married the daughter of Major Edward Wellesley in 1873, and had two sons and three daughters. His eldest son was drowned while at Sandhurst, his second son entered the army and has been seriously wounded in the war. Sir William retired from practice soon after he had reached the age of 60.

Outside his profession Sir William was a man with many friends; he was a good companion and a born raconteur. Quick to get annoyed, his sunny disposition smoothed over many a storm, and he never bore malice against those who had irritated him.

He was a good horseman and a fair shot. In his younger days he loved yachting; he culled most of the pleasures of life. He was devoted to the works of Shakespeare and well read in English literature. Few modern works escaped perusal, and his criticisms were always pointed. He was a friend of many leading actors, and after a hard day's work delighted in the relaxation afforded him by a visit to the theatre.

FRANK IRVINE MACKINNON, M.B., C.M. EDIN.,
M.R.C.S. ENG.,
Damascus, Syria.

BASIL MATHEWS, in his recent work, *The Riddle of Nearer Asia*, wrote of Mackinnon of Damascus these words:

I discovered little by little that in all the city of Damascus . . . there was one man who had universal authority, not by official position, nor by wealth, but by the power of service and personality. Even the wild, untamable Arabs of the desert would come in and lie down with complete confidence on the operation table of Dr. Frank Mackinnon, saying, in the phrase that has become proverbial about that great Scottish Christian surgeon through the Arab world, "He carries a blessing in his hands." From that hospital, established by British missionary enterprise, at the very pulse of the Arab world, the invisible power of a conquering leadership radiates all along the camel route of Asia.

Such was Dr. Mackinnon's position just before the war broke out in 1914, but thereafter, mainly by German influence, a sudden change took place, and it was only after serious hardship that he managed to get away from Beyrout and out of the hands of the Turks. As it was, the Victoria Hospital with all its equipment was seized by the enemy. Dr. Mackinnon thereupon gave his services to military work in Malta and Egypt during the continuance of the war. Soon after Turkey's defeat he made his way back to Damascus, and he was still engaged in connexion with the R.A.M.C. there when he was struck down by pneumonia and died on December 30th, 1918.

Frank Mackinnon was born at Avoch, in Ross-shire, on December 2nd, 1855, and was therefore 63 years of age at his death. His father was a congregational minister in Sussex. After his school years he acted for four years as tutor in a family in Madrid, and later he lived for six months in Paris, working in the McAll Mission there. He joined the Edinburgh Medical Missionary Society as a student in 1879. He graduated M.B., C.M. Edin. in 1882, and obtained the M.R.C.S. Eng. in the following year. At the end of 1883 he was appointed by the Directors of the Edinburgh Society to start their medical work in Damascus, and he began his long service as medical missionary there in 1884. In 1886 he married a daughter of the Rev. John S. Macphail of Benbecula in the Hebrides. His work at Damascus was marked by a long series of successes under very difficult and at first antagonistic circumstances. His reputation and skill as a surgeon would have been a big asset to any hospital in the United Kingdom; he was likewise a born administrator, and understood the Eastern mind as few can claim to do. One of his triumphs was the purchase of a site for a hospital in 1893, and so highly did the British residents in Syria think of the work he was accomplishing that in 1897 they caused to be erected the Diamond Jubilee Ward of the Hospital. In the same year Her Majesty acceded to the request of the Directors of the Edinburgh Medical Missionary Society, and signified that the hospital should be called the "Victoria Hospital." In 1898 the building was opened by Nazim Pasha, the Governor-General of Syria, and there until 1914 Dr. Mackinnon carried on extensive medical and especially surgical work, gradually gaining for himself the wonderful position of influence so graphically described by Basil Mathews in his book quoted above.

It was not often that Dr. Mackinnon was persuaded to put pen to paper, and writing reports about his own work at Damascus was an abomination to him; but now and again he yielded to temptation, as when he described his "Two Days in a Turkish Prison" at the beginning of the war for the *Craigleith Hospital Chronicle*. "In one small room capable of accommodating two persons . . . seventeen of us were packed. Amongst these there were four doctors, several engineers, one bank director, Lloyd's agent, the *Times* correspondent, and several merchants. . . . When the cold, wintry dawn broke, a voice asked, 'Are we downhearted?' to which a thundering 'No!' came in response *de imo pectoris*, which must have startled our slumbering guards." The incident is emblematic of Mackinnon's whole outlook upon life; he was never downhearted, for he believed himself to be a servant of the King of Kings, and his watchword was "Carry on" in His name.

Dr. Mackinnon is survived by a widow and by three sons, the eldest of whom (Dr. John Macphail Mackinnon), after acting for a year as assistant to his father in Damascus, became Captain E.A.M.C., was attached to the King's African Rifles, and served in East Africa during the war.

DR. ROBERT WALKER, formerly surgeon to the Carlisle Dispensary, has died at his residence at Paignton, South Devon, in his 85th year. He received his medical education at Edinburgh, and took the diplomas of L.R.C.P. and S. Edin.; he became F.R.C.S. Edin. in 1873. After practising in Shetland for a few years he settled in Carlisle, where he practised until in 1895, on grounds of health, he went to Coveley. A few years ago he retired. He was specially interested in surgery, and did much operative work during his thirty years' tenure of office as surgeon to the Carlisle Dispensary. He took an active part in the work of the Cumberland and Westmorland (now the Border Counties) Branch of the British Medical Association, and made several contributions to its proceedings. He founded the Carlisle Chess Club, and was himself a skilled player, being able to play three games blindfold at one time. He was twice married, and his son by his first wife is Mr. Miles Walker, D.Sc., professor of electrical engineering in the University of Manchester. By his second wife he had five children, one of whom, Dr. Frederick Walker, is bacteriologist to the 19th General Hospital, Alexandria.

DR. O'CONNELL JOHN DELAHAYDE, who died in Dublin recently after a short illness, was educated at the University of Dublin, and took the diplomas of L.R.C.P. and S. Ireland in 1877, M.R.C.P.I. in 1883, and F.R.C.S.I. in 1900. Before his retirement from active work he had held the office of medical officer to No. 2 North City Dispensary for thirty-three years, and was held in great esteem in the district in which he practised so long.

LIEUT.-COLONEL ROBERT GRAY, Bengal Medical Service (retired), died at Aberdeen on December 28th, aged 85. He was educated at King's College, Aberdeen, where he graduated M.A. in 1853 and M.B. in 1859. He entered the I.M.S. as assistant surgeon on July 27th, 1859, and became surgeon on July 27th, 1871, surgeon-major on July 1st, 1873, and brigade-surgeon on June 3rd, 1887, retiring with an extra compensation pension on April 3rd, 1891. After four years' military duty he took up civil employment in the Punjab in 1863, and, after serving in various civil surgeoncies for twenty years, was appointed Inspector-General of Prisons in September, 1884, and held that post till his retirement.

Universities and Colleges.

UNIVERSITY OF LONDON.

At a meeting of the Senate held on December 18th, 1918, the title of Professor of Bacteriology in the University of London was conferred upon Dr. J. W. H. Eyre (Guy's Hospital Medical School), who has also received the status and designation of appointed teacher.

Dr. S. Russell Wells has been appointed the representative of the university upon the General Medical Council, in succession to Sir Frederick Taylor.

Sir Seymour Sharkey has been elected chairman of the Graham Legacy Committee for 1918-1919; Dr. A. E. Boycott, F.R.S., has been reappointed Director of the Laboratory, and Dr. C. Bolton, F.R.S., reappointed acting director during absence of Dr. Boycott on military duty. The annual report of the committee presented to the Senate gave particulars of the general progress of the laboratory, the researches carried out, and the grants to workers.

UNIVERSITY OF EDINBURGH.

THE report for the academic year 1917-18 gives particulars of the work done and the changes that have occurred. The facts have been recorded from time to time in our columns, and it may suffice here to state that the total number of matriculated students was 2,091 (1,359 men and 752 women). The number in the Faculty of Medicine was 1,147 (823 men and 324 women, an increase of 84 upon the number of women for the previous session). Of the students of medicine 51 per cent. belonged to Scotland, 17 per cent. to England and Wales, 26 per cent. to British Dominions, Colonies and Dependencies (one-fourth from India), and 25 to foreign countries. It is expected that the number of students attending the courses will be greatly increased in the spring term, and it is hoped that by relaxation of preliminary requirements and the provision of special courses of instruction, the case of the returning student may be adequately and even generously dealt with. A greatly increased financial burden has fallen upon the university; the Treasury had promised a grant of £6,500 out of the sum provided by the estimates for the current year in respect of loss caused by the war.

UNIVERSITY OF ABERDEEN.

THE following candidates have been approved at the examination indicated:

M.B., CH.B.—J. G. Smith (with second class honours), P. S. G. Cameron, Marjory J. Duffon, Anne Simpson.

Medico-Legal.

A CHARGE OF "DOPING."

AT the Thames Police Court on January 6th the hearing was concluded of a case in which three persons were charged with being concerned in "doping" a Russian subject to make him unfit for military service. The accused were Marcns Woolf Cohen, M.B., a medical practitioner, and Leah Myers, his dispenser, both of Commercial Road, and a man named Bell, a hairdresser. Dr. Cohen was alleged to have given a false medical certificate preparatory to the commission of the offence; Myers was charged with supplying a preparation, and Bell with injecting it to produce symptoms of diabetes. For the prosecution it was alleged that Bell told the Russian he could "keep him out of the army for £50," and introduced him to Dr. Cohen at the latter's surgery. Later the man was again taken to the surgery, and in the absence of Dr. Cohen, Bell injected into him a thick, yellow liquid, saying it would produce sugar. Bell then took the man with an introductory note from Dr. Cohen to a West End specialist, who certified that in his opinion he was suffering from diabetes. It was alleged further that subsequently the Russian was again taken to the surgery by Bell, who made another injection with liquid from a phial supplied by Myers. The Russian, when examined by a medical board, was found to be normal, but was placed in Grade 3 on grounds of policy, and was afterwards arrested. Dr. Cohen, giving evidence, denied the charge. He had treated the Russian as a patient for chest trouble, and Bell brought him to the surgery saying he wanted an examination in order to ascertain his medical standing for military service. In Bell's absence witness examined the urine, which gave a qualitative sugar reaction, and he suggested that the patient should have an independent examination by a specialist. He was paid a fee of one guinea, and received no other money from the Russian or from Bell in connexion with the case. Dr. Ambrose of Whitechapel Road testified to Dr. Cohen's high character and professional repute, and Sir E. Marshall Hall on his behalf said it was inconceivable that he should risk ruin in this way for the sake of a guinea fee. The magistrate found Dr. Cohen and Bell guilty, and sentenced the former to six months' imprisonment with a fine of £100 and £20 costs, or, in default of payment, fifty-one days' further imprisonment; the latter was sentenced to five months' imprisonment with hard labour, and ordered to pay a fine of £30 and £5 costs, or sixty-one days' additional imprisonment in default. Myers was discharged.

On the following day it was announced at the police court that Dr. Cohen had entered into sureties, in the sum of £500 each, to prosecute an appeal against his conviction at the next quarter sessions, and that he had been released from custody.

The Services.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following officers of the R.A.M.C. (T.F.): Major Henry Skelding, Major Arthur Roberts (attached 6th Reserve Brigade, R.F.A.), Major Ernest B. Waggett (3rd London Field Ambulance), Lieut.-Colonel Charles J. Deys (2nd South Midland Mounted Brigade Field Ambulance), Major James P. Brown, D.S.O. (34th Ambulance Train), and Lieut.-Colonel Peter Mitchell (1st Scottish General Hospital).

Medical News.

THE late Sir Alexander Christison, Bt., left £24,649.

A DISCUSSION on the etiology, prevention, and non-operative treatment of adenoids will be opened at a meeting of the Section for the Study of Diseases in Children of the Royal Society of Medicine on January 24th, at 5 p.m., by Drs. Harry Campbell and Edmund Cantley.

SIR RICKMAN J. GODLEE will deliver at University College, on January 22nd, at 5.30 p.m., the first of five lectures, arranged in co-operation with the London County Council, on surgery, ancient and modern, with special reference to Lister and Pasteur.

PROFESSOR ARTHUR KEITH, F.R.S., will deliver a course of six Hunterian lectures on phases in the life and work of John Hunter, at the Royal College of Surgeons of England, beginning on Monday, January 20th. The lectures, which will be illustrated by Hunterian preparations, drawings, and records, will be given at 5 p.m. on each day.

THE whole of the new number of *Brain* (Vol. XLI, Part II), just issued, is occupied by a long article on sensation and the cerebral cortex, by Dr. Henry Head, F.R.S. We hope to refer to the article more at length in a later issue.

DR. W. A. BULLOUGH, M.Sc., acting medical officer for the West Riding of Yorkshire, has been appointed medical officer of health under the Essex County Council in succession to Dr. J. C. Thresh, who has resigned.

M. CLEMENCEAU has been elected an honorary president of the General Medical Association of France. This is the first instance in which such a distinction has been bestowed. In expressing his deep sense of the honour done him the French Premier said: "Although I have long ceased to be one of you except in name, I none the less take a great interest in your work, which is useful beyond all others."

AT a recent sitting of the Society of Obstetrics and Gynaecology of Buenos Aires, Dr. Carlos Fonzo Gandolfo presented the draft of a bill providing for the payment of a monthly pension during a year to every indigent mother delivered in a maternity. This pension may be extended for a like term under the form of assistance for the child. The pension is to be withdrawn on the death of the infant or its mother, or if the child is entrusted to the care of persons not related to it, or if a change in the position of the parents should occur. The deaths under one year of age per 1,000 births number 156 in the Argentine. The rate in England and Wales ranged from 91 in 1916 to 108 in 1913.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring re-prints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Atiology, Westminster, London*; telephone, 2631, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulata, Westminster, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westminster, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

CAMPBOR IN ACUTE BRONCHITIS AND BRONCHOPNEUMONIA.

LIEUTENANT H. W. FREER, R.A.M.C., writes: I read with interest Dr. P. L. Giuseppe's memorandum on the value of camphor in acute influenzal bronchitis and bronchopneumonia (December 28th, 1918, p. 716). It would be useful to know the plan Dr. Giuseppe adopts for the administration of the camphor pills to an unconscious patient.

LETTERS, NOTES, ETC.

PREVENTION OF VENEREAL DISEASE.

INVESTIGATOR writes: Whatever opinions we may hold about "prophylaxis," there can be no harm in the spread of knowledge. Medical men should know that there is a sure preventive of venereal disease. If, immediately after intercourse, the penis and scrotum are steeped for several minutes in 1 in 1,000 solution of mercury perchloride, and several times at intervals a few drops are instilled from the finger-tip into the upturned urethra, all parts that can have been superficially infected by female discharges are surgically cleansed. If this is repeated immediately after each intercourse there is no danger of infection, except the very slight danger of mouth infection from the saliva.

SODIUM SALICYLATE IN INFLUENZA.

DR. I. DAVID (Colombo) states that the drug he found most useful during the epidemic of influenza in September and October, 1918, was sodium salicylate. In severe cases he gave

once daily, for two or three days, an intramuscular or intravenous injection—preferably the latter—of 2 to 3 drachms of a 20 per cent. solution of sodium salicylate, made by dissolving the pure salt in distilled water previously boiled and cooled. The drug, even in such large doses, did not cause any serious cardiac depression, and hæmaturia, hæmoptysis, epistaxis, bronchitis, pneumonia, pleurisy, jaundice, meningitis, otitis, peritonitis, hyperpyrexia, and other complications present in some cases, readily yielded to this treatment. Early treatment must be the rule, and the treatment must be continuous and uninterrupted until the patient is convalescent. In advanced cases with dyspnoea and dilated heart, salicylates will fail, and sodium or potassium bicarbonate may succeed.

MEDICAL RESETTLEMENT.

A CORRESPONDENT who signs himself "late R.A.M.C. Captain, Gallipoli and France," writes as follows with reference to the proposal of the Central Medical War Committee that preference should be given to ex-officers in making medical appointments of a military or national kind (BRITISH MEDICAL JOURNAL, January 4th, p. 17): "This theory is splendid, but what about practice? I enclose a letter I wrote to the Minister of Pensions, and the reply I received two months afterwards, which speak for themselves." Our correspondent's letter, dated October 1st, 1918, written on behalf of a number of medical men who have served in the R.A.M.C., requested the Minister of Pensions to publish the number of appointments of referees, in connexion with the discharged soldiers and sailors' scheme, made recently in Ireland, and the number of ex-service medical men who were successful candidates. The letter concluded: "We, who have voluntarily undergone the discomforts and dangers of life in the forward area in France and abroad, naturally feel somewhat hurt that the weight which was to be given to applications from medical men who had served, was not sufficient to gain us even one appointment in the Belfast area, and we would be interested to know if our comrades in other parts of Ireland fared any better." The reply on behalf of the Minister of Pensions dated December 2nd, 1918, was that the appointments in question were made by him after consideration of reports and recommendations of a selection committee specially appointed for the purpose: "Experience in the Royal Army Medical Corps, or in military or auxiliary hospitals, in the treatment of men injured in the present war was considered but was not decisive. In future appointments the Minister hopes to give more weight to it. Meanwhile he is unable to furnish the figure for which you ask."

A FASTING MAN.

THE death is announced at San Diego, California, of Dr. Tanner, whose endurance as a fasting man aroused much popular and scientific interest in Europe some thirty years ago. He kept his first fast of forty days in New York in 1880. Those who studied him during the exhibitions he gave were agreed that he did actually fast, and his power of resistance may have given courage to the physicians who on theoretical grounds introduced the starvation treatment of diabetes. Tanner at least proved that occasional complete abstinence from food for considerable periods need not undermine the constitution, for he lived to be 91.

THE NEW HOUSE OF COMMONS.

A PAMPHLET called *The New House of Commons* has been issued by Abdulla and Co., cigarette makers (173, New Bond Street, W. 1). It contains a list of the members elected and of their opponents, with the total number of electors on the register, and the votes cast for each candidate. It contains also a list of peerages created since the end of 1910. The lists are serious and useful, and the illustrations frivolous and amusing.

THE following appointments of certifying factory surgeons are vacant: Knutsford (Cheshire), Folkestone (Kent), Blackburn, North (Lancaster), Preston, East (Lancaster), Harrogate (Yorks).

WITH reference to the paragraph regarding Messrs. Cadbury's sweetened cocoa and milk powder, published on December 21st, 1918, p. 704, we are asked to state that under the Food Controller's Order it is not permissible to make chocolate with this preparation.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE CLIMACTERIC OF LIFE.

BY

GUTHRIE RANKIN, M.D., F.R.C.P.,

CONSULTING PHYSICIAN TO THE DREADNOUGHT AND ROYAL
WATERLOO HOSPITALS.

THE history of every life that fulfils the average duration is one of gradual ascent from the time of birth till its fastigium is reached, and from that point one of decline until it finds its termination in death. What may have occurred in the process of events before the contact of spermatozoon with ovum started each being on an earthly career we know not, and we are equally without definite assurance of the incidents which lie in the future after the bodily machine, having reached its ultimate goal of functional activity, becomes scrapped. There is ample evidence to prove that hereditary tendencies pass far beyond the history of generations, while there is an abiding faith in the hearts of most men that the experience and discipline of life which build up the character of each individual cannot possibly terminate with the end of material existence, but must surely be destined for higher development under new conditions elsewhere. Mortal life would be unsatisfactory if, as the outcome of its activities, there were not hope of an immortal survival. The scope of the human senses is bounded by terrestrial limitations, but science is continually enlarging man's power of conquest over Nature's secrets, and progressively adding strength to the conviction that beyond the field of material endeavour there is an undiscovered country where the educative work begun here must be continued and amplified.

The climacteric period, which may be regarded as coinciding with life's full maturity, is a well recognized event in women, but it is not so generally appreciated that men go through a similar readjustment of tissues, though after a less dramatic method, and probably at a somewhat later age. The cessation of menstruation is an event in the woman's life which results from the functional death of the ovaries. It is usually accompanied by disturbance of the vasomotor and nervous systems, causing unstable health and many uncomfortable experiences. It is also a time of special liability to the development of disease, especially of such as may be regarded as the expression of hereditary tendencies that have down to this period of transition remained dormant. In men, from seven to ten years later, a similar liability to the awakening of latent proclivities exists, and there would seem to be, at that period, as in women, an upset of tissue equilibrium conducive to the establishment of pathological conditions. The immediate counterpart in man of the ovarian changes in women is probably to be found in the structural alterations which then become established in the prostate gland. In both sexes a diminution of vital margin, with lessened activity of secretory and excretory vigour, is a clinical declaration that life has crossed the summit and has entered upon the downhill period of its duration.

Acute illness occurring within the limits of this critical time is attended with more than average risk, the protective powers of the body being just then apparently less able to resist germ or toxicæmic invasion. But it is to the chronic ailments met with at this period of life that most interest attaches. Though they comprise a large variety of disorders, there are certain of them that stand out conspicuously because of the frequency of their occurrence, and the claim they make for early recognition and active treatment if the remaining years of life are to continue fruitful and free from the handicap of broken health.

It is not surprising that growths of malignant type so often date their inception from this period of unstable tissue-life. Their management is largely, if not entirely, surgical, and, except from the point of view of diagnosis, does not directly interest the physician. Among the many ailments that may assert themselves at the climacteric three are here selected as commonly met with in men and three as more usually encountered in women. Three examples are chosen, not because they comprise more than a fraction of the disease processes that are encountered at this period, but because, on account of their frequency, they fall within the experience of most men in active practice. They are, moreover, related to one another in such a manner as to give them a special etiological and

developmental interest. Nomenclature tempts us to regard every ailment labelled with a name as an entity. No one of them is really self-contained, but overlaps in every direction on the domain of the others.

Arterio-sclerosis, interstitial nephritis, and diabetes form a small group of ailments which often declare themselves in men between 55 and 63. Arterio-sclerosis may have set its mark upon the vessels long before this age is reached, especially when arduous work, the free use of alcohol, or syphilis has entered into the history. It is, however, now that in cases with no such antecedents the wear and tear of life begins to set its mark on the vessel walls, and is responsible for such a record as the following: A man of full habit of body, often with gouty antecedents, who has been self-indulgent in regard to food and drink, and whose life has always been busy, with very little holiday, comes complaining of morning headaches, slight shortness of breath on exertion, disturbed sleep, unwonted irritability, and mental depression, with a sense of fullness after meals, palpitation, occasional feelings of tightness in the chest, and one or two recent attacks of giddiness which have given him some alarm, and are the immediate cause of his seeking advice. He is usually florid, above the average weight, and perceptibly, though it may be only slightly, hampered in his respiration. His arteries are tortuous and hard, his tension is increased, his heart is moderately enlarged, and the second aortic sound is accentuated. His liver is often full, and is slightly tender to touch below the costal arch. His urine is loaded with urates, and may also contain a haze of albumin. Most frequently his knee-jerks are excessive, and there is other evidence that his nervous system is unstable. His mental energy is diminished. Such is the clinical outline, and here is a typical case in illustration:

CASE I.

A. R., aged 56, a short, florid, active man who has worked hard all his life as a stockbroker. There was a doubtful history of syphilis thirty years ago, but the Wassermann reaction has always been, and now is, negative. For several years he went to Kissingen for "the cure." For thirteen months his sleep had been very broken, and he had been restless and depressed. He complained of palpitation, a sense of fullness in the head, giddiness, occasional feeling of constriction in the chest, and frequency of micturition at night. On examination his heart was increased in size, the apex beat being at the nipple line in the sixth space and the right margin at the right sternal edge. The first sound was muffled and the second accentuated at the aortic cartilage. The arteries were tortuous and hard and the pulse numbered 84, with a tension of 200 mm. The urine had a density of 1020, contained a minute trace of albumin, some crystals of uric acid and oxalate of lime, and a few hyaline casts. There was some diminution in the hepatic dullness. He was under observation from time to time for about three years. During that period his symptoms varied according to the care he took in regard to diet and work. Rest and a restricted regimen always temporarily diminished the tension and improved his general condition. He had much anxiety in his business and many worries at home. He developed as time went on angina pectoris, of which he had several sharp attacks. Eventually he caught pneumonia, and after his recovery was, when last heard of some months later, decidedly better, his life being passed under conditions of much diminished strain.

When interstitial nephritis is the primary result of degenerative changes the patient presents other features. A man of middle age has recently suffered from headaches, backache, loss of weight, failure of appetite, dream-disturbed sleep, drowsiness during the day, indigestion and mental depression. Micturition has been more frequent than usual, and recently he has had occasional mild attacks of asthma, from which he never previously suffered. On examination he looks toxic and "fishy" about the eyes, sad in expression, and old for his age. His arteries may be thickened, but this is not always an obvious sign in the early stages. There is some increase of arterial tension, and there may already be a moderate enlargement of the left ventricle of the heart. The cardiac action is regular but the resting space between the second and first sounds is diminished, the second sound is accentuated, and moderate effort increases the rhythm abnormally, and may even produce a temporary soft short systolic whiff at the apex, due to relative insufficiency. As a common accompaniment of the early stages of interstitial nephritis there is evidence of commencing emphysematous changes in the lungs; the liver may still be of normal size, but an early cirrhotic process may have produced some alteration in the direction of increase or diminution of

percussion dullness. The urine is abundant, clear, of low specific gravity, and precipitates a mild haze of albumin. Hyaline and granular casts are found microscopically, and the urea content is diminished. The nervous system is unstable with many evidences of neurasthenia, and eventually the patient is irritable, suspicious, querulous, difficult to please, and altogether changed from his former self. This clinical sketch finds illustration in the following case:

CASE II.

I. C., aged 53. Never seriously ill. Six weeks before first seen he went to his doctor because of sudden faintness coming on after the exertion of several sets of tennis. He had been previously very much worried. The doctor found albumin in the water, and told him his heart was not right. On examination his arteries were tortuous and hard; the apex beat of his heart was forcible and diffused at the sixth space in the nipple line, and the second sound was accentuated. The arterial tension measured 180 mm. The urine had a density of 1008, and contained a thick haze of albumin; the urea content was only 220 gr., a few leucocytes and one or two hyaline casts were found on microscopic examination, and the average daily amount secreted was 70 oz. Three months later the apex beat of the heart was outside the nipple line, and the rhythm was slightly irregular after exertion. The second sound was still accentuated at the base, and there was a short systolic murmur at the aortic cartilage. The arterial tension now reached 220 mm. and the urea was diminished to 180 grains. After another interval of two months there was a marked increase of albumin, and retinal haemorrhages were observed. He complained now of vertigo, asthma, constant headaches, impaired digestion, and occasional sickness. He eventually died of uraemia.

When the presence of sugar in the urine declares the existence of diabetes, the story is somewhat different from either of the foregoing. Though at first the sugar may be intermittent, and therefore be more correctly described as a glycosuria, the fact of its being there even occasionally points to a disturbance of pancreatic function, which is the earliest stage in the establishment of tissue change that tends to become permanent, and must then be classified as a true diabetes, even though at this age it seldom acquires the acute phase met with in younger people. The man in middle life who has developed this fault in his metabolism comes to the doctor because of a progressive emaciation which has excited the comment of his friends and has eventually produced some concern in his own mind. He does not feel ill, but finds that he is easily tired and unfit for the amount of exertion previously habitual to him. He is somewhat thirstier than he used to be, and though he takes his food well and digests it perfectly, it fails to keep his nutrition up to its former level. His interest in the daily work of his life has lessened of late, and he has not the same grip of things for which he used to be conspicuous. The amount of urine secreted in each twenty-four hours is more or less abundant, clear, and of a persistently pale colour. He complains of muscular pains, which he attributes to rheumatism, and is from time to time waked from sleep by cramp in one or both calves. When called in the morning he welcomes his early cup of tea because of an unwonted dryness and stickiness of his mouth. On examination there is nothing in his appearance to attract special notice. He is often a man of good complexion, and, in an uncomplicated case, his organs are apparently normal. He has lost any superfluous fat he may have had, but his muscles are firm and still vigorous. The pulse is soft, small, somewhat more rapid than the average, and easily excited to greater frequency by moderate exertion. The heart is of normal diameters, but sometimes presents a muffling of the first sound. In many such cases there is a slight increase of hepatic dullness, and pressure over the epigastrium may cause uneasiness, if not actual pain. Balanitis is often a source of annoyance. The urine is pale, and of high specific gravity. Apart from a frequent excess of phosphates, the only abnormal constituent is sugar, and this varies in amount according to the severity of the disorder and the dietetic habits of the patient. In a case that has gone beyond the earlier stage there may be albumin and diacetic acid in addition. When the urine passed at the time of the interview is examined it may be of high density yet not reduce Fehling's solution, and, but for some such history as that of having been refused for life insurance some months previously because sugar had been discovered, the true nature of his ailment might be missed. A specimen taken from the whole of a twenty-four hours' secretion will often clear up any doubt, and this should never be omitted.

CASE III.

G. D., aged 58. A busy, gouty, active man, complained of disturbed digestion, palpitation, tiredness, and frequency of micturition. He lived freely, and drank a generous amount of wine every day. On examination his heart was apparently of normal size, but the first sound was muffled and short and the second sound moderately accentuated. The arterial tension measured 140 mm.; the lungs were emphysematous; the liver was enlarged to one inch below the costal arch, and was tender to touch; the reflexes were exaggerated; the urine had a density of 1032, and contained 11 gr. of sugar in each ounce. Eight months later the sugar had increased to 24 grains per ounce, but this amount diminished under diet restrictions and rest. The following year he had an attack of haematuria, due to a renal calculus, which was removed. Subsequently the sugar increased again to 16 grains, accompanied by a haze of albumin. He also developed about this time a soft diastolic aortic murmur. After another year the albumin continued as before, and the sugar varied from 5 to 20 grains to the ounce, according to the care he took as to his habits of life. After an unusually heavy day's work, and a speech delivered at a public dinner, he complained of fatigue and drowsiness, went home, and died comatose the next morning.

Here we have three instances of disease which tends to declare itself with special frequency at the time of the climacteric in men. What inter-relationship can be found between them, and what are the means best calculated to stay their progress? In the first place, each may be regarded as evidence of a breach of tissue integrity and a warning of coming disaster. A process of sclerosis is becoming established, and the tissue selected for its earliest manifestations is determined by the habits of the individual and the family tendencies he has inherited. The common causative antecedent in all three cases is strain continued almost unrelentingly over upwards of forty years. Domestic trials, financial worries, emotional storms and mental anxieties enter into the lives of those who are strenuous and ambitious to achieve worldly success, and each adds its quota to the routine of daily duties and events that constitute the groundwork of a man's career. The stress of carrying on, whatever the effect on individual organs, falls primarily upon the nervous centres, which, becoming devitalized, reveal their feebleness in symptoms of neurasthenia. More often than not these ailments overlap one another, and instead of meeting with one of them in "pure culture" we more often get a blend of one with another, or of all three together. Arterio-sclerosis becomes associated with interstitial nephritis, which, in its turn, may be accompanied by glycosuria, and finally all three may occur together and give rise to a mixed clinical symptomatology. The following case is an example of this grouping:

CASE IV.

W. H. B., aged 53. A florid man who was once stout, but had recently become much thinner. Engaged in financial concerns which caused him constant anxiety. He was a large eater, and specially indulged in meat and sweets. He smoked and drank excessively. His father suffered from gout, and died from exhaustion produced by a large carbuncle. When first seen in 1913 he complained of broken sleep, enfeebled digestion, frequency of micturition, headaches, and giddiness. He gave a record of occasional traces of sugar having been found in the urine, but when examined at this interview it contained neither sugar nor albumin. His arteries were thickened, but his blood tension did not exceed 140 mm. His liver dullness was diminished, and he had pharyngeal catarrh which troubled him in the morning. In 1914 the urine contained a haze of albumin, and an abundance of phosphates, but still no sugar. The frequency of micturition had increased, and his tension now registered 160 mm. The sclerosis in his arteries was advancing, and he now complained of giddiness, fullness in the head, and occasional attacks of epistaxis. Early in 1915 4 grains to the ounce of sugar were found in the urine, which also contained hyaline casts and leucocytes. The urea remained in normal amount. In 1916 the sugar had increased to 12 grains to the ounce, and the albumin had more than doubled in amount. In October, 1917, after a period of greater worry than usual, and more indulgence in food and alcohol, he got an attack of delirium tremens which was accompanied by a mild degree of hepatitis and jaundice, much albumin in the urine, and sugar up to 20 grains. He also had two attacks of cardiac distress, which were anginal in type, and alarmed him greatly. He gradually recovered from this illness, and since then he has taken no alcohol, no sugar, and no meat. In other respects he has led a quiet and uneventful life, and has lessened his business responsibilities very considerably. When last seen some months ago he was fairly well. He had lost a stone in weight, his urine contained a trace only of albumin and sugar, but still had hyaline and granular casts; his arterial tension was 140 mm., and his heart was regular and without murmur. His temporal vessels were markedly prominent and tortuous.

From this triad of diseases ulterior consequences are apt to follow if the degenerative process continues progressive.

The changes in the arteries are liable to invade the aortic arch and the coronary vessels, with a consequent risk of aortic valve disease or angina pectoris. They may also become established in the myocardium, with resulting auricular fibrillation, dropped ventricular beats, or the Stokes-Adams syndrome. They may search out the tender cerebral vessels, and give rise to apoplexy or softening of the brain. Interstitial nephritis may be either the consequence or the cause of arterio-sclerosis, and may lead to tubular changes in the kidneys, and ultimate uraemia. The sclerotic processes in the kidneys may pave the way for similar changes in the liver and pancreas. This close association makes the onset of the one almost certainly the prelude to the others, should it pass beyond the earliest stages of development. Each is the sign-manual of commencing senility, and if uncontrolled will surely lead on to a premature old age.

The indications as to preventive treatment are simple and obvious if the theory as to causation is correctly stated. The strain of life must be ruthlessly curtailed whenever the first danger signals declare themselves. Work must be lessened, and leisure cultivated; the diet must be adjusted to the necessities of the condition and the capacities of the damaged organs. To take life easily means its prolongation, whereas to continue along the path of unbridled effort connotes a not far distant invalidism and an early demise. Curative measures ought to be adopted according to the indications presented by each patient, but the adage that "prevention is better than cure" is never more true than at this time of life and in cases of this type where the prognosis is always unfavourable if energetic measures of control are not adopted without delay. When arterio-sclerotic changes are first discovered nitrogenous food should be reduced to a small amount, and both alcohol and tobacco indulged in very moderately. All sudden effort or physical work that is sustained and heavy must be avoided. Life generally should be so arranged as to be unexciting and even monotonous. A weekly grain of calomel will provide for free action of the liver, and periodical small doses of iodide and nitrite of sodium with arsenic will help to keep the blood tension low, and possibly aid in delaying the thickening of the arterial walls.

In cases of interstitial nephritis it is again of importance to minimize effort and to curtail the diet, especially in regard to proteins and alcohol. Simple diluents ought to be taken abundantly, and a tumblerful of hot Vichy water before breakfast every morning is of considerable help. The amount of urea in the urine is more important than the quantity of albumin. Marked diminution of urea is an evil omen, and should be treated by complete rest in bed, a milk dietary, mild alkalis, and free hepatic stimulation. The eyes ought to be examined ophthalmoscopically from time to time, the occurrence of albuminuric retinitis being of grave prognostic importance. In diabetes the treatment practically resolves itself into a suitable restriction of diet and the exhibition of opium. One of the most valuable derivatives of opium is codein, and this drug may be given in bold doses. When administered in combination with arsenic and rhubarb it seldom disagrees; it always has the effect of making the patient happier and more comfortable, and also often decreases considerably the output of sugar. In the matter of diet the fashion of the day is starvation. This plan of Guelpa, more recently elaborated by Allen, is successful in reducing the amount of sugar or in banishing it altogether for the time being, but the trial it makes upon the self-denial of the patient is a tax upon his nervous control which seriously imperils his serenity of temper and happiness of life. Even after a drastic course of such treatment, the sugar ultimately returns, and the unfortunate victim must again, and yet again, be cleansed in purgatorial fires in order to reach the promised land where there is no sugar. In younger patients, when the diabetic process is acute and the nervous energies are still superabundant, such a plan of treatment has much to recommend it, but at the age with which we are now dealing few patients can stand it, and the results are not likely to be brilliant when the probable cause is sclerotic change in the pancreas. The doubt is whether the amount of sugar in the urine is of very much consequence so long as the general nutrition is well maintained. Many patients live comfortably and do a fair amount of work over many years with sugar constantly in the urine. In certain forms of chronic nephritis large

amounts of albumin are consistent with a partial recovery; why may it not be equally true of sugar in the case of diabetes? The excess of albumin in the kidney condition is less important than the diminution of urea, which is the gateway to uraemia. Similarly, the excess of sugar in the urine of middle-life diabetes is of small moment compared to the advent of diacetic acid, which is the prelude to coma. Obviously sugar must be excluded from the dietary, but whatever form of starch is found to be best metabolized ought to be allowed in such quantity as the patient's maintenance of weight proves him to be capable of dealing with. Loss of weight up to a certain point is inevitable, especially in those whose adipose tissue has been previously excessive, but when a condition of equilibrium becomes established—and this should be estimated by regular weighing—a moderate excretion of sugar need not be regarded with undue alarm. Diacetic acid should be searched for periodically, and on its first appearance the patient must be put to bed, treated with a more rigid dietary as regards carbohydrates, and with a temporary withdrawal of fats, purged moderately, and given bicarbonate of soda with taraxacum in full doses every three or four hours. In all such patients alcohol in reasonable amount should be allowed.

In women, colitis, rheumatoid arthritis, and hyperthyroidism are the ghosts most to be dreaded at the "change of life." Here again the same interdependency and hereditary influence may be observed as that which has been referred to in connexion with climacteric ailments in men. Women are as a class more careless than men in the proper regulation of their bowels. They suffer greatly from constipation, due in no small degree to the sedentary lives they lead, the less fluid they consume, and their greater liability to digestive disturbances. The consequence is that they fall into the aperient habit often quite early in life, and in many cases reliance upon drugs becomes habitual, the bowels never being relieved except by the assistance of a favourite remedy. In time the tone of the colon suffers, with the result that both its mucous membrane and its muscular wall lose their normal activity and become sluggish in the performance of their natural functions. As age increases the bowels get more and more troublesome, and the patient finds the use of strong aperients imperative. This produces an alternative of diarrhoea with constipation, and ultimately the appearance of mucus and streaks of blood in the stools.

The woman who is the victim of colonic irritation at or about the period of the menopause looks toxic and shows many evidences of impaired nutrition. The muscles are flabby, the breasts shrunken, the tongue coated, the breath offensive, and the skin "muggy." She complains of palpitations, flushings, perspirations, a constant sense of fatigue and sleeplessness. She is never quite free from headache, has little or no appetite, and suffers after every meal from dyspepsia of the atonic type. She is uncomfortable in her abdomen, and is disturbed by intestinal rumblings and grumbings which make her shy of going among her friends or of taking her proper part in the social duties of life. Her bowels never act normally, and her stools are scybalous, offensive, and mixed up with more or less mucus, some of which is blood-stained. She is often a martyr to haemorrhoids, and this increases the discomfort of defaecation, and may produce tenesmus.

On examination there is probably no evidence of organic disease beyond a feeble, irritable, and "tic-tac" heart, but the colon is distended, splashy, and at one or more places—most often at the caecum or at one of the flexures—thickened and slightly tender to touch. The patient is depressed and emotional, with a firm conviction that she is the victim of a serious intestinal malady, and that a dangerous surgical operation will be required to give her any chance of recovery. Here is a short summary of such a case:

CASE V.

M. M., aged 52. A spare woman who belonged to a family with a record of nerve disorders. Her menstruation had been irregular for two years, and ceased altogether recently. She had suffered for three or four years from irregularity of her bowels, and within the past six months had never been free from colicky pains, indigestion, and tenesmus. The stools are offensive, streaked with blood, scybalous, and covered with mucus. She has become thin, irritable, and is always tired. On examination she is listless, and looks toxic. Her teeth have been only casually looked after, and she has some evidence of pyorrhoea. Her reflexes are exaggerated. The heart is normal but the sounds are soft, and there is a relative systolic murmur

at the apex and along the left sternal edge. The abdominal walls are thin and shrivelled; the colon is felt thickened and tender along its whole course, but especially in the region of the sigmoid flexure. No glands can be found, and anal examination is negative. The other organs are normal, and the urine contains an excess of phosphates, but neither sugar nor albumin. Under careful and patient treatment she gradually improved, and when last seen, in May, 1917, she had gained weight, the stools had become normal, the systolic murmur had disappeared, and she was fit for the ordinary duties of life if only she carefully avoided strain and unsuitable food.

Rheumatoid arthritis of the chronic variety is a frequent associate of the menopause. It commences insidiously, and at first causes no more annoyance than slight pain, which comes and goes, and is often confined to one joint only of the right hand. It is regarded as rheumatic and unimportant, but one joint after another gradually stiffens and becomes painful on movement, so that the patient is unable to use her hands with ordinary freedom. The affected joints are fusiformly enlarged, and the neighbouring muscles are wasted, with a resulting deformity that is quite pathognomonic. She is concerned lest she gets permanently crippled, not only in her hands, but in her feet, where in one or other of the larger joints she has recently experienced premonitory warnings. She is often a woman of cheery disposition who has been active and energetic all her life. In later years her digestion has caused some trouble, and she has found an increasing difficulty in regulating her bowels. Her vasomotor system has been unbalanced since her menstruation ceased, so that flushings and perspirations have played a leading part in her discomforts. The pulse is persistently small and rapid, and she experiences alarming palpitations from emotional or other disturbing incidents. Heberden's nodes are usually present, and are most marked on the exterior aspect of the terminal joints of the fingers. She has, or gives a record of having previously had, trouble with her teeth, which has kept her almost entirely in the hands of the dentist. Leucorrhoea has in some cases been a long-standing trouble. Almost invariably she can recall the fact that her mother or other near female relation has suffered from joints similarly deformed to hers when they reached or exceeded her age. Urticaria is met with in many cases, and unsightly growth of hair on the chin is a source of vexation to those who suffer from it. Organic disease only occurs as an incident, and is unrelated to the rheumatoid condition. The following outline of a case is characteristic:

CASE VI.

M. F. G., aged 53. Stout and active; all her life subject to chronic rheumatism. Her mother suffered from rheumatoid arthritis for some years before she died. She now complains of stiffness in her hips and one knee, also of difficulty in turning her head because of pain at the nape of her neck. Since her menstruation ceased two years ago her finger-joints have been subject to recurrent inflammatory attacks, and most of them are now deformed and knobby. Her digestion is troublesome. She had all her teeth removed four or five years ago because of pyorrhoea.

On examination she is typically rheumatoid, the knees are greatly misshapen, and creak audibly on movement. There is considerable tenderness over the cervical vertebrae when the head is rotated to one side or other. The heart is practically normal; the arteries are moderately thickened; the lungs are normal. The nervous system is of the neurasthenic type and there is a great exaggeration of the knee-jerks with complete absence of the plantar reflexes. The urine is of low density, but the chemical reactions are normal. The bowels are obstinately confined. When last seen she was in a state of quiescence, but there had been several subacute attacks of pain in the finger-joints, with temporary redness and swelling since the last visit. These attacks were always consequent upon extra worry or some passing disturbance of general health.

Graves's disease, or hyperthyroidism, does not often happen in the fully developed form of exophthalmic goitre, but an incipient variety is met with frequently. As the time of the menopause is approaching the neck is observed to get full at each recurrent menstrual period, and gradually the woman becomes more and more what she describes as "highly nervous." Not only has she the usual flushings to complain of, but her heart beats so rapidly that she is constantly aware of its action, to which she ascribes the tremulousness of her muscles. Both symptoms are unpleasantly increased by over-tiredness or mental worry. Her imperfect emotional control and constant sense of fatigue compel her to seek relief by lying down more or less continually. Her appetite is poor, and she has ceased to take an interest in the affairs of her

home and family. She is getting thinner day by day. Mentally she is irritable and despondent.

On examination she looks anaemic, and is so perturbed that she tells her story with difficulty. A mild tremor involves all her muscles, and is increased in a marked degree by putting them to the exertion of any movement. Her knee-jerks are exaggerated, but the plantar reflexes are flexor. Her heart is of normal size, but its action is persistently rapid, from 140 to 160, or, in some cases, more. The sounds are short and sharp, and a soft systolic bruit at the apex and over the pulmonic area is present, and is intensified when the cardiac action, from whatever cause, becomes quickened. Her breath is short and gaspy, but there are no physical signs in her lungs. Her stomach is often distended, and the abdominal organs all seem to sag. The urine is excessive and of low density, but it contains no albumin. Sugar is sometimes present in small amount, but is usually a passing event. In pronounced cases there may be a suspicion of undue prominence of the eyeballs and of slight enlargement of the thyroid gland. The bowels are irregular, and a moderate diarrhoea is readily produced either from unsuitable food or from mental upset. Sleep at night is uncertain, and a rebellious insomnia is not infrequent. The following case is at present under observation:

CASE VII.

B. D., 47 years of age, a widow who has had years of worry in her domestic life, stout and of pale complexion. Family history unimportant. For about eighteen months suffered from palpitation, shortness of breath, and tremors. Recently her menstruation had become profuse and irregular. Flushings and other evidences of disturbance of her vasomotor system.

On examination there was marked tachycardia, fine muscular tremors, and exaggerated nerve reflexes. At the apex of the heart there was a short systolic bruit. The thyroid gland was full, and though there was no true exophthalmos the globes of the eyes were prominent, and on excitement became staring. The urine was abundant, and contained a trace of albumin; from time to time it reduced Fehling's solution, but there was no established glycosuria. Her sleep was uncertain and dream-disturbed. She was restless, depressed, and her memory recently had failed considerably.

Complete rest, thymus gland extract, and a mixture of valerian, digitalis, strychnine, and codeia had the effect, after a time, of bringing about a decided improvement. The tremors diminished, the eyes became normal, the pulse slowed down from 120 to 80, and the cardiac murmur disappeared. Anything more than the most moderate excitement still brought back the tremors and tachycardia.

As in the case of climacteric disorders in men, so in the three foregoing ailments to which women are prone, ulterior consequences are apt to emerge if a check is not put on their progress. Colitis, if long-continued, impairs the mucous membrane of the large intestine, and predisposes to thickening and sagging, with all the consequent miseries that depend upon the drag and displacement of the abdominal contents. The impairment of vitality in the coating of the bowel may end in an ulcerative process which is difficult to repair, and may in many directions become dangerous to life. Chronic enteritis will cause niggling pains and troublesome irregularity of the bowels, with much flatulence and unpleasant borborygmi. Toxicæmic consequences cause the patient to look ill, impair the general nutrition, and may end in a marasmus almost as pronounced as that produced by malignant disease.

Rheumatoid arthritis is almost always rebellious, and produces changes in and about the affected joints, of which the penalty is a permanent and characteristic deformity. When the disease invades the vertebral column the miseries and helplessness of the patient may compel for a time complete rest in bed. Until the pathologic process has been arrested there is constant risk of intercurrent acute exacerbations, when the joints become red, swollen, and painful, to the accompaniment of disturbed digestion, pyrexia, and a condition of neurasthenia with all its bewildering manifestations of functional instability. Fibrositis, sciatica, and lumbago are to be feared as hindrances to the progress of recovery.

Graves's disease, though generally met with in an incipient form, may pass from that stage to fuller development, and end in exophthalmic goitre. Even in its minor degree it is accompanied by disturbance of the nervous system, and sometimes leads to a mild degree of mental aberration. The thyroid gland may become enlarged apart from any change in the eyes. Every case is

Associated with a risk of glycosuria which from small beginnings may end in a permanent diabetes. Intestinal difficulties are common and the colon may prove troublesome. Pigmentary changes in the skin may declare themselves in the form of leucoderma, and patches of alopecia sometimes become established on the scalp.

Here again we have three examples of climacteric disease in women with an inter-allied relationship no less notable than that found between the examples selected for illustration as being frequent in men at the corresponding period of life. The causative influence in all three is probably a toxæmia by which metabolism is more or less seriously interfered with. The toxic process has been going on over many years with passing increase or diminution of virulence according to the demands made upon the resisting powers of the individual. Finally, when the menopause arrives and temporarily disturbs the equilibrium of health, the toxins concentrate their energies and produce symptoms indicative of selective intensity in one direction or another according as it is guided by inherited tendency or personal idiosyncrasy. The nervous system has to bear the primary weight of the pathological condition, and we find in each of the cases quoted, just as in those exemplified by men, an irregularity of nerve supply which, added to the organic changes that have taken place, complicates the symptomatology and increases the uncertainty of the prognosis. These ailments are apt to overlap one another, and more frequently present themselves as a united clinical picture than as a true-to-type malady. Colitis enters into the make-up of the story of many cases of rheumatoid arthritis, which, in its turn, is often an associate of hyperthyroidism, while all three may find full expression in the same patient. The following case fully bears out this statement:

CASE VIII.

M. P., aged 63, a spare, active woman, who had suffered for some years from chronic rheumatism, and gave a history of temporary glycosuria about ten years ago. She complained of recent loss of flesh, weariness, constant palpitation, and irregularity of the bowels, with recurring attacks of colicky pains, diarrhoea, and mucus-coated, blood-stained stools.

On examination her terminal finger joints were deformed by Heberden's nodes, and several of the interphalangeal joints were spindle-shaped and enlarged. Each hand was deflected to the ulnar side, and there was wasting of the interosseous muscles. The lungs were moderately emphysematous, and the chest was rigid. The heart was enlarged, but the apex beat was difficult to find because of the overlapping lungs. There was a systolic murmur at the aortic cartilage, and the second sound was accentuated. The arterial tension measured 140 mm., and the pulse was of the Corrigan type; it never numbered less than 120, and on many occasions ran up to 140. There was a constant tremor, varying in intensity. The colon was tender throughout all its course, and was thickened at the caecum and over the splenic flexure. No glands were felt. The urine was straw-coloured, of 1037 density, and contained 22 grains of sugar to the ounce, but no diacetic acid.

During three years after this note I saw her from time to time. She gradually developed a diastolic aortic murmur, and her left lens became cataractous. She went repeatedly to Harrogate, and derived benefit from the treatment there so far as the colitis was concerned. She had occasional recurrent attacks of mild arthritis, and the amount of sugar varied from time to time, but never exceeded 25 grains to the ounce. Latterly, she developed a mild albuminuria. Eventually she died of pneumonia.

If climacteric illnesses in women do not so clearly indicate as in men the advent of degenerative tissue changes, the toxæmia on which they depend cannot fail in time to have a debasing influence on all the cells of the body. The conditions of her life are generally less arduous than in man, and the climacteric period is reached earlier. Her vital energies are therefore better preserved, and her tissues have not yet begun to degenerate.

She may get arterio-sclerosis, or interstitial nephritis, but it is generally later than at the time of the menopause. On the other hand, the glycosuric liability may develop earlier than in man on account of her proclivity to thyroid mischief. Metabolic failure to deal with carbohydrates has, in her case, a thyroid, rather than a pancreatic, origin.

A few sentences only need be added in regard to treatment. One leading indication is, from the preventive aspect, important—namely, the necessity for combating in every possible way toxæmic intoxication. This is most likely to be successfully accomplished by a careful regimen; the proper regulation of the bowels and the occasional stimulation of the liver; a suitable amount

of daily exercise in the open air; avoidance of worry and excessive fatigue; and by an attempt, through the use of intestinal antiseptics, to keep the whole length of the digestive tract clean and wholesome. In cases of colitis douches are sometimes useful, but they are an unpleasant form of treatment for the patient and may create an undesirable reflex effect upon a nervous system already touchy. Beta-naphthol, bromide of ammonium, and bismuth is a useful combination, the good effects of which will be intensified by an occasional dose of calomel or podophyllin. The bowel should be lubricated by a tablespoonful of liquid paraffin every morning before breakfast. The wearing of a suitable belt during the day supports the abdominal wall and helps to keep the colon in its place. Since it is probable that rheumatoid arthritis owes its origin to gastro-intestinal poisoning, the same treatment as is helpful in colitis applies in its case. It has been claimed that guaiacol carbonate is specially useful, but it is probably no more effective than the other antiseptics already mentioned. Hot-air baths at home are of value, and residence during the cold months of the year in a warm and dry climate such as that of Egypt is desirable. The vogue of modern remedies has caused many of those that are older to be forgotten or rejected as obsolete, but it is well to remember the efficacy of guaiacum in combination with sulphur, given in such a daily dose as provides for a comfortable and easy morning evacuation. In cases of hyperthyroidism, the usual treatment by bromides, strophanthus, belladonna, and arsenic, is greatly aided by the administration of suprarenal or thymus gland extract. The results are often brilliant, and improvement may follow their use when all other methods of treatment have been unavailing. Which will prove the more helpful in any given patient can only be ascertained by the experimental exhibition of first the one, and then, if need be, the other. There seems to be no guiding indication as to choice, and not uncommonly when one fails the other succeeds. Absolute rest in bed or on the sofa for three or four weeks is an essential element in the treatment of all these cases, and they seem to do better in a relaxing inland climate than at high altitudes or near the sea.

A clinical survey such as this compels us to recognize how important, in both sexes, is the climacteric period of life, and how essential it is to treat the ailments which may accompany it with perseverance and careful attention to detail. The secret of success lies in convincing the patient that the years are beginning to tell their tale, and that a new and more subdued plan of life must be found and courageously adopted in order to escape the danger of a too early advent of the time when "the grasshopper shall be a burden, and desire shall fail."

BONE GRAFTING IN UNUNITED FRACTURES OF THE MANDIBLE:

WITH SPECIAL REFERENCE TO THE PEDICLED GRAFT.*

BY

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The evolution of the bone graft as applied to ununited fractures of the mandible is a matter of considerable interest. Since the outbreak of war orthodox opinion has undergone a radical change. The extent of this change can be gauged by a perusal of the *Transactions* of this Section. At a meeting of this Section in 1916 bone grafting as a means of dealing with non-union was mentioned merely for the sake of academic completeness. Practically, it was either ignored or regarded as a manifestation of somewhat ill-advised activity on the part of surgical visionaries. Compare this view with that deliberately voiced last session by the then president of this Section. In March, 1918, Mr. J. H. Badcock summed up the position

* Read at a meeting of the Section of Odontology of the Royal Society of Medicine, November 25th, 1915.

thus: "It is evident from the collection of cases on view this evening that the operation of bone grafting as a cure for ununited fractures of the mandible has passed beyond the experimental stage into the region of assured success in a very large proportion of cases. But such success can only be expected when a surgeon and a dentist work in close and sympathetic collaboration, with the full understanding of each other's aims and efforts. No surgeon dealing with fractured jaws can afford to neglect this operation, and no ununited mandible should be given up as hopeless until it has been given a fair trial."

Unfortunately this finding, based on the evidence of results, has been by no means universally adopted. Thus, in an article in the *British Journal of Surgery*, July, 1918, which deals with the treatment of cases at a recognized jaw centre, this statement is made: "Fibrous union is treated by a suitable prosthetic appliance." It is obvious that the treatment of non-union has not been standardized. Opinion tends to the condemnation of the *non possumus* attitude that characterized the earlier days of the war, but procedure is neither settled nor consistent.

How important it is to formulate a consistent, clear-cut policy must be apparent to all. The treatment of ununited fractures is essentially a peace problem. The exigencies of warfare can no longer be invoked to extenuate procedures that fall short of the best, either in plan or in execution. Throughout four years of war the simpler cases have been dealt with to a finish. The clear supernatant fluid has, as it were, been drawn off, leaving a precipitate of remediable or hopeless non-unions. How numerous are these cases, and how have they been dealt with? We are unable to answer those questions, but certain facts can be adduced to show how necessary it is that they should be answered. As to their number, information is very scant, but certain figures are available. Northcroft had 10 per cent. of non-unions in his series; Forty had 16 per cent., and we, counting all types of cases, had 11 per cent. It may fairly be estimated that non-union occurs in approximately 10 per cent. of all mandibular fractures. If this be so, the number of ununited fractures must be considerable, for over 1,300 cases have been treated at the King George Hospital alone. The constant appeals made for statistics bearing on this question have, as noted, evoked but little response.

That non-union can only be remedied by operative measures is an admitted fact. To what extent and with what success surgical intervention has been invoked it is impossible to judge, for the only series of cases other than our own is that published by Platt, Campion, and Rodway. This much is certain, that for at least two years after the outbreak of war isolated attempts only were made to deal surgically with these lesions. As a rule, the attitude assumed by those in charge of these cases was expectant and non-committal, but occasionally active hostility was encountered.

Taking all these circumstances into consideration, one must conclude that a large number of ununited fractures have been discharged from hospital, their treatment being allegedly completed. Let it be remembered that no surgeon would regard non-union of any other bone as a satisfactory termination to treatment. Let it be remembered, too, that the disability from an ununited fracture of the mandible tends to become progressively greater as teeth now used for abutments are lost; also, that the maximum of disability will obtain at an age when the compensatory powers of the individual are on the wane. Remembering these things, we maintain that every case so situated should be carefully reviewed, and that wherever possible the condemning dictum should be revoked. Let us quote a striking passage from Mr. John Galsworthy in the first number of *Reveille*:

Be not trustees of your own departments first, and servers of the general purpose second; keep the restoration of the wounded man in the forefront of your minds and sacrifice everything else—even your own dignities—to that. Restoration of the man and nothing else matters.

The benefits derived, the chances of success, the penalties attaching to failure, the risk incurred, the methods to be employed—such questions as these must be investigated, and upon the answer to them will depend that settled conviction which must necessarily precede the consistent adoption of any fixed plan of treatment. In short, a verdict, favourable or otherwise, must be based on the evidence of results.

It is on that account that we have brought for your inspection every available case, irrespective of their condition or the date of operation. These cases number twenty-three, and include nineteen pedicled grafts and four free transplants. In addition, cases have been shown which are regarded as suitable for one or other of these grafting operations.

The proportionately large number of pedicled grafts will be noted. We have employed this method in thirty-four cases. Free transplants have been employed in twelve cases only. The latter method is only adopted when a pedicled graft cannot be utilized.

The pedicled graft operation has been described in previous communications,¹ and it is therefore not necessary to recapitulate the details. The use of this method has been extended to the utmost, and as a result certain improvements have been introduced. It is now usual to perforate the graft posteriorly (Fig. 1, A, B, C). The fixing wire is passed through the substance of the bone, instead of surrounding it, and thus firmer and more reliable contact is obtained. At times both ends of the graft are perforated. Experience has shown that a much more bulky fragment may safely be detached than we were wont to use. For both of these improvements we are indebted to Captain Tainter of the United States Medical Service, whose valuable assistance has been placed at our disposal.

Another point not previously emphasized is the rigidly aseptic method employed. Skin margins are guarded by towels clipped to the edges of the wound; all knots are tied with forceps and no handling of wound or graft is at any time permitted. Some may maintain that such technique is totally unnecessary and savours of surgical pedantry. It is, however, well to remember that the standard aimed at is rarely attained and that within limits it is impossible to err on the side of a too rigid technique. That the precautions taken are well within these limits is shown by the fact that the operation rarely takes more than one hour and a quarter and is often completed in fifty minutes.

We propose briefly to summarize the conditions our experience shows to be necessary to permit the performance of a pedicled graft operation.

1. *Site of Fracture.*—The loss of tissue must implicate the horizontal portion of the bone—that is, the lesion must be situated at or in front of the angle.

2. *Size of the Gap.*—This should usually not exceed 4 cm. In favourable circumstances it is possible to cut a thick, well-nourished graft of 6 cm. in length, and a gap of 5 cm. (before trimming) may thus be dealt with, if end-to-end union is resorted to.

3. *Condition of the Soft Parts.*—It is necessary that the tissues of the submaxillary triangle should be free from scar tissue on the side from which the graft is to be cut. It is extraordinary how frequently this area escapes even when the soft tissues of the face are extensively damaged.

Nothing has been said as to the more precise situation of the fracture because a lesion on one side can be dealt with by a graft taken from the opposite side. The ability to do this has been demonstrated on several occasions. It entails a considerable dislocation, the definition of a long pedicle, and a consequent tendency to displacement. In two cases of this nature with maximum gaps the results, though good, have not up to now been entirely satisfactory. In both cases the lower jaw was edentulous and atrophic, thus seriously limiting the amount of bone detachable; in both cases the operation was undertaken through scar tissue, and in neither case were perforating wires utilized. In extending the application of an operation a limit must be reached, and reached, in our judgement, it has been in the cases detailed.



FIG. 1.—A, Diagram of fracture. B, Graft cut. Posterior fragment freshened and wire passed. C, Graft fixed in position. Pedicle shown schematically.

It is impossible to refrain from commenting on the technical difficulties forced upon the surgeon by the edentulous jaw. The cases here to-night show how rapidly these jaws become frail and atrophic, militating thus against grafting by any method and adding to this nutritive difficulty the technical one of efficient fixation of the fragments. We are glad to note that, amongst others, Major Pickerill has joined his protest to those we have made from the earliest period of the war, and we take this opportunity to reiterate our conviction that the multiple extraction of teeth is a policy that should be abandoned.

A brief statement may be made as to the progress of these cases. Without exception, they have been out of bed before the skin stitches have been removed. Progress has been throughout uneventful; an alveolar abscess occurred in one case and stitch sinuses in two others. The splints are removed in from ten to twelve weeks according to the size of the defect. At this time a slight "give" is noticeable corresponding to the plastic stage that occurs in the union of all fractures. As a rule, this bending phenomenon gradually disappears, and firm union ensues in from four to six months. Occasionally union fails at one or other end. A secondary wiring operation is then undertaken. This has been invariably successful, and the graft when exposed has been indistinguishable in appearance from other living bone. The overlap originally present permits of this secondary operation being performed without any sacrifice of occlusion.

An interesting departure is the treatment by a pedicled graft of two cases in which previous free transplants had considerably diminished the gap but had failed to determine union. A case of this description was grafted in Switzerland. He came to us with free mobility but with a gap that could readily be bridged by a pedicled graft. A sinus was present at the time of operation but no untoward effect has been noted.

It has been stated that 34 cases have been dealt with by this method. In 23 the result is known, and of these 21, or over 90 per cent., have been completely successful. In the two remaining cases the patients themselves are thoroughly satisfied but we can only regard their condition as considerably improved; they are counted as failures in the appended table of results. The pedicled graft operation permits the utilization of a portion of living bone, possessed of its own blood supply, passing to it from a natural musculo-fascial pedicle. The method of Cavalié, for which similar claims are made, cannot justly be regarded as a pedicled graft operation. The results support this contention, for they have been far from satisfactory.

Free transplants are only employed when conditions do not permit the use of a pedicled graft.

Apart from the question of technique, the factors that determine the success of a free transplant may be dealt with as follows:

1. *The Condition of the Soft Parts.*—The operation should not be attempted in the presence of frank or concealed sepsis. We always allow three months to elapse after obvious sepsis has disappeared. As the graft is not vascularized from the bed in which it is implanted the vascularity of the bed is not of direct importance. All that is required is that the soft tissues shall be pliable enough to permit nice adaptation of the graft, and well nourished enough to maintain their vitality when sutured, and thus prevent the introduction of sepsis from without. Excision of puckered and adherent scars is frequently necessary, and plastic operations should be so planned that exposure of the bone ends may be accomplished without undue risk of opening into the mouth.

2. *Condition of the Fragments.*—The size of the gap is not material as an isolated factor. We have successfully dealt with a case in which the graft, 7 cm. in length, extended from the facial vessels on one side to those on the other. The condition of the fragments is most important, both from the point of view of reparative power and the facilities afforded for efficient immobilization. The ends of the bone always tend to become atrophic and sclerosed. This process is progressive, and hence any undue delay seriously diminishes the chance of success. The age of the patient, too, is a most important factor. Delay, then, on both these counts is to be deprecated. So convinced are we of this that we urge operation after a reasonable trial of more conservative methods. This is a question that vitally affects the welfare of the pensioner. The treatment of old non-union brooks no delay, for every day that passes steadily diminishes the chances of success. The edentulous fragment is an even more burdensome difficulty than in the case of the pedicled graft. If we were asked to state what single item in the treatment of jaw cases had given rise to the most difficulties, disappointments, and failures, we should unhesitatingly answer the indiscriminate extraction of teeth.

3. *The Graft Itself.*—This may be taken from tibia, rib, crest of ilium, or scapula. In short, the graft may be taken from any bone, the choice depending on accessibility and the physical disposition of the portion removed to conform to the shape and size of the gap and to the methods of fixation employed. The presence or absence of periosteum is not material, as our cases conclusively demonstrate. The results obtained do not compare favourably with those by the pedicled graft method—hence our preference for the latter. In the case of the long bones, Hey Groves has recently published a series of 34 cases with complete success in 55 per cent. In the series of Platt, Champion, and Rodway the results were extremely satisfactory, and the authors are to be heartily congratulated. The osteo periosteal method of Delagenière has, according to reports, given extremely good results. A series of cases grafted in this manner was the subject of a paper by Lebidsky and Virenque at the Inter-Ally Conference. These same authors discuss the method very fully in the book recently published by them. Further information is required as to the size of the gap that can thus be dealt with successfully.

Of our own 12 cases the result is known in 10, and of these, 7 have been completely successful, giving a percentage success of 70. Splints are removed in from three to six months. Progress is slow, and firm consolidation cannot be expected in less than six months to a year.

We have questioned the earlier patients in both groups as to their present function. Ten replies only have been received. All state that the jaw feels solid; five of these (all pedicled grafts) are on ordinary hard diet; four of these state explicitly that they "can eat anything." As regards the other five the replies are disappointing. One can eat meat if stewed (free transplant); the other four (two pedicled and two free grafts) can only eat meat if minced. This question of subjective evidence is beset with difficulties. When the evidence is positive—when a man states that he can eat anything, that statement obviously can be accepted without demur. The same cannot be said of negative evidence. In several cases we know, from observation, that such negative statements have been incorrect. Unsupported negative statements are open to question when at variance with what clinical examination would lead one to expect. The reasons for this are obvious, and will be appreciated by all those present who have knowledge of the working of the Workmen's Compensation Act.

From conversation with our most intelligent patients we are convinced that disability is a muscular failing. When it is remembered that many of our cases have been under treatment for two years, coming to us after a year or eighteen months in splints, this muscular disability is scarcely to be wondered at.

A man with a compound fracture of the femur can perhaps get about fairly well at the end of six months; one does not expect him to be able to play football. Football to a femur is as hard food to a jaw, and we think that, even with union, some functional disability will frequently be long-standing. Ability to masticate is restored invariably to the sound side first, an ability which, in the presence of mobile non-union, is impossible. On the affected side ability is delayed—the jaw, as it were, walks with a limp.

The position as regards all cases of non-union dealt with by us may be tabulated thus:

Nature of Operation.	No. of Cases.	Result Known.	Failure.	Success.
Plating ...	2	2	2	0
Wiring ...	20	20	1	19
Pedicled graft ...	34	23	2	21
Free transplant ...	12	10	3	7
Operation abandoned ...	3	3	3	0
Total ...	71	58	11=19%	47=81%

No selection whatever has been exercised; we have operated on every case submitted to us. It will be noted that the balance is heavily weighted against ourselves. Thus three cases are counted as failures, in which the physical conditions found by exploration rendered, in our judgement, any further steps impracticable. Again, no "improvement" column has been included, though in most cases improvement has been considerable. In no case has the patient's condition, general or local, been

adversely affected by operation. Finally, there has been no mortality, and no complication of a nature to cause alarm.

REFERENCE.

¹ Hunterian Lecture, *British Journal of Surgery*, July, 1913. *Transactions of the Odontological Section, Royal Society of Medicine*, March, 1913.

PELVIC MEASUREMENT IN ANTE-NATAL CLINICS.

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THE following notes have been written in the hope that they will prove of use to those engaged in frequent and routine examination of the pregnant woman. One of the first objects of the work in the ante-natal clinics is the measurement of the pelvis and the recognition of contraction in order that obstetric disasters may be anticipated, and therefore prevented.

The importance of complete pelvimetry in every primigravida and all multigravidae with a history of instrumental or difficult delivery cannot be overestimated, for during the course of such routine examination it is surprising to note that a relatively large number of women show degrees of pelvic contraction which are slight, but sufficient to cause a difficult labour. The grosser degrees of contraction are usually recognized easily, and adequate prophylaxis arranged, but so much may be done for the less marked cases by accurate recognition followed by timely induction of labour, perhaps only a week or two before term, but yet long enough to prevent the risk of fetal death during a tedious delivery.

If measurement of the pelvis were a certain means of knowing the size of the brim the examination and its judgement would present little difficulty, but, unfortunately, in the slighter degrees of contraction the measurements often give no true information, and if reliance be placed upon these figures, and no further examination be made of the manner in which the head is behaving in or above the brim, there may be surprise at the time of labour that a difficult forceps delivery is required. The converse also is true—that a pelvis apparently, by external measurements, contracted is found to offer no impediment to the subsequent passage of the head.

The usual measurements made during an ordinary examination are three, together with an attempt, generally unsuccessful, to estimate a fourth. Of the three two concern the false pelvis—namely, the interspinous and the intercrystal diameters; but these measurements are of little value—in fact, scarcely worth the trouble of recording except when altered to a marked degree, in which case other diameters give more information.

The interspinous is described in the books as 10 in. (25 cm.), but it seldom reaches this figure, and may vary from 8½ in. (21 cm.) to 10 in. (25 cm.) in a pelvis with a basin normal in size. It is most commonly a little over 9 in. (22.5 cm.). The intercrystal is a little more constant, between 10½ in. (26 cm.) and 11 in. (27.5 cm.), and diminution of this diameter may be of more consequence as indicating a contraction of the transverse diameter of the brim, and therefore a generally contracted pelvis. It is probable that if ½ in. (1.25 cm.) be deducted from this and the resultant figure halved, a fairly correct measurement of the transverse diameter of the brim is obtained. Much importance has been attributed to a diminution of the difference between these two diameters as indicating a flat pelvis. This is true for severe degrees of flattening, but in the great majority of slightly flattened pelvis there is no alteration whatever; in fact, the normal difference of 1 in. (2.5 cm.) may be increased.

The more important measurements are those of the true pelvis, and of these the external conjugate probably gives the most information. This should properly be measured from the depression below the tip of the last lumbar spine to the upper border of the symphysis. An error is often made in obtaining this diameter because the anterior limb of the pelvimeter is placed upon the anterior surface of the pubes instead of being carried well on to the upper border, so that the tip of the instrument is flush with the posterior surface of the symphysis, hence the diameter is usually made greater than it should be. It is

often stated that the external conjugate is unimportant because the amount of fat is variable, and the figure obtained therefore unreliable. But fat does not tend to a great extent to be collected over bony points like the vertebral spines, while the difficulty of excess of fat over the symphysis can be overcome by pressing in the pelvimeter more deeply. In normal pelvis this diameter is found to be remarkably constant at 7½ in. (18.25 cm.). In some cases, however, there is a variation, due not so much to fat as to a varying thickness of the mass of bone between the tip of the spine and the sacral promontory. That this is probably so is shown by the fact that a normally sized head will sometimes engage deeply in the brim of a pelvis whose external conjugate measures only 7 in. (17.5 cm.), or even 6¾ in. (17.25 cm.). In these cases the contraction of the diameter is probably due to diminution in the thickness of the vertebra.

An external conjugate of 7¼ in. (17.75 cm.) indicates scarcely any appreciable contraction of the true conjugate, and usually the engagement of the head is normal, but if it be diminished to 7 in. (17.5 cm.) it is frequently observed that the head remains higher than it should, and labour at term is unduly prolonged. In some of these patients there is definite non-engagement of the head followed by a protracted delivery. If the reading reaches only 6½ in. (17.25 cm.), almost certainly will there be found non-engagement of the head.

The posterior interspinous diameter, normally 4½ to 5 in. (11.25 to 12.5 cm.), should be measured from the two small depressions immediately external to the tips of the posterior superior spines, as this diameter almost exactly corresponds to the maximum width of the sacrum in the circle of the pelvic brim, which makes it a useful index of sacral development. Diminution in this diameter occurs in small degrees of generally contracted pelvis, because the sacrum is of a smaller model than normal, and also in the severer cases of flat pelvis because the sacrum is sunk more deeply between the iliac bones, thus allowing the posterior superior spines to become approximated by the inward pull of the sacro-iliac ligaments.

The external conjugate and the posterior interspinous diameters should be considered together when judging a pelvis. Small contraction of both will usually indicate a slight degree of general contraction, while a diminution of the former and the latter unaltered points to a small amount of flattening.

In the large number of pelvis undergoing routine examination it is comparatively seldom that the diagonal conjugate can be estimated owing to the inaccessibility of the promontory. No measurement of this diameter is trustworthy unless the finger can just pass the promontory, for, unless this can be done, one is never sure that the highest point is reached. Few fingers can reach more than 4½ in. (10.5 cm.). It is usual to subtract ½ in. (1.25 cm.) from the diagonal conjugate to obtain the true conjugate, but if the promontory be felt to project far forward, indicating a steep inclination of the brim to the horizontal, at least ¾ in. (2 cm.) should be deducted. In addition to an attempt to feel the promontory, the finger should be swept round the pelvic cavity to gain a rough idea of the size of the basin and the width of the subpubic angle.

But in spite of the most exact pelvimetry, slight degrees of contraction will often remain undetected unless the extent of the engagement of the fetal head is carefully examined. As Dr. Hubert Roberts says: "The best callipers is the baby's head." In the normal primigravida the head is usually deeply engaged in the brim, especially when near term, but sometimes it is high up. For this there may be obvious reasons, such as a full bladder and rectum, while pelvic contraction accounts for others, but there is a residue which do not admit of a ready explanation. When, however, the head can be pressed down into the brim, the pelvis is either normal, or, if contracted, the head has not yet reached such a size as to be incommoded by the diminished diameters. But if the head cannot easily be depressed by firm pressure this is usually due to contraction or to extension, the latter condition being easily diagnosed. The facility with which it is possible to press down the head is a most important clinical estimate, and should be observed with care.

It is usual to recognize three degrees of position of the head with reference to the brim—it may be *floating* (movable above the brim), *engaging* (movable in the brim),

or engaged. If the head is found to be floating or too high, it is next necessary to attempt to force it down into the brim, and thus gain an idea of any disproportion that may exist between the head and the brim. This is best done by standing so as to face the woman and placing the fingers of both hands flat upon the head, and forcing it firmly backwards and downwards. By this manoeuvre one can recognize three degrees of ease in causing descent. Firstly, the head may be easily depressed deeply into the pelvis; secondly, it may be possible to depress it a slight distance, after which the sensation obtained is as if one were pressing the head on a mass of rubber; in other words, there is an impression of resiliency; thirdly, it is impossible to cause any descent at all. In many cases there is doubt as to whether the head can be made to descend, because small amounts of movement can scarcely be appreciated by the abdominal hand. If this be so, it is necessary to examine by Munro Kerr's method. The woman lies upon her back, and the finger of the right hand is held rigidly in the vagina so as just to touch the vertex if this is low enough to reach, while the left hand grasps the head and attempts forcibly to press it down. By this method a degree of descent too small to be recognizable by the abdominal hand alone can easily be appreciated by the vaginal finger. But the existence of more descent is not enough. When the head is very high it can be pushed down on to the brim, but often not into the brim, which is the condition we aim at producing.

Having, then, made a full examination of the pelvis as above, the important point is the question of treatment for patients with pelvic contraction. The indications will be the position of the fetal head in relation to the brim, and the period of gestation.

Firstly, even if the measurements are contracted, but the head weak by week during the last month is found to be engaged, or can easily be made to engage, then induction of premature labour should be withheld; but, if the head is found not to be engaged, or only engaging, repeated attempts should be made to cause descent as described above. Usually, from the thirtieth to the thirty-sixth weeks there is no difficulty in this, but sooner or later the manoeuvre will become more and more difficult until finally there is a doubt as to whether the head can be pushed down at all. If labour be induced at this time it will generally be found that it is unnecessarily easy, while the child will have been deprived perhaps of a further week of gestation. The best procedure is to wait until the head can just *not* be pressed down, and then to send the patient for induction immediately. In the majority of cases the labour will not be too difficult, and the child will have been given the maximum period of intrauterine life. The usual tendency is to induce labour too soon, in the fear that the head is too large, with the result that labour is much quicker than was expected.

In those cases where the head remains floating and incapable of engagement and descent before the thirty-sixth week, it is a question whether Caesarean section at term is not better treatment than induction of premature labour, and this alternative should be put before the patient.

In conclusion, I would urge ante-natal medical officers to look carefully for the slighter degrees of pelvic contraction, as it is these cases which are apt to go unrecognized and result in tedious labours at term, with a high rate of morbidity and a greater risk to the child's life.

PRIMARY SARCOMA OF THE PROSTATE: RAPID GROWTH FOLLOWING INJURY.

BY

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Cases of this rare disease are worthy of being recorded. The infrequency of its occurrence is demonstrated by the circumstance that out of the immense number of cases seen at the Hôpital Necker, in Paris, only one sarcoma of the prostate has been discovered. The disease was first described by Stafford in 1839, and in 1858 Thompson was able to discover only 6 cases; in 1902, by the research of Burckhardt, 24 cases in all were collected.

The case about to be described is of interest from a surgical point of view because of the disease, and from a legal aspect on account of the injury. The patient's wife obtained compensation in the Sheriff Court of Lanarkshire.

W. B., aged 35, was admitted to the Glasgow Royal Infirmary under my care on May 2nd, 1917. He then told me that prior to the accident on March 10th he enjoyed good health. On that day by a fall while he was at work in a pit he received an injury to the perineum and testicles. This caused difficulty in passing urine and slight bleeding from the urethra. He was treated by his own doctor till the beginning of May.

When admitted to the infirmary he was suffering from severe pain in the region of the bladder, and retention of urine which demanded the use of the catheter; the urine which was drawn off was alkaline, containing some blood, pus, and triple phosphates. He also showed symptoms of septic absorption. Rectal examination showed a round, smooth, soft enlargement of the prostate.

As the haematuria was severe, and the general symptoms alarming, I performed suprapubic cystostomy on May 9th, permitting a large quantity of decomposing urine to escape, while a considerable blood clot was also removed. This done the prostate was found to be occupied by a soft fungating growth which could be traced into a small cavity in the prostate. It had well-defined walls; the opening admitted my forefinger, and with it the tumour mass was easily removed; afterwards the cavity was curetted.

A portion of the growth was examined by Professor Teacher, and proved to be a round-celled sarcoma. A large drainage tube was inserted into the bladder, and free drainage established. This gave complete relief from pain, and the patient's general condition improved, but, although less profuse, the haematuria continued, and within a fortnight, when a second exploration was made, the tumour was found to have recurred, and to be of greater bulk than when the patient was admitted. As in the circumstances I did not consider myself justified in recommending cystectomy, he left the hospital at his own request on July 3rd, when the bladder was almost completely filled with tumour.

The case was a hopeless one, and by performing a radical operation the legal aspects would have been seriously complicated, my opinion being that prior to the accident there was a small encapsuled round-celled sarcoma in the prostate, which, if uninjured, would probably have remained quiescent for a long time. The fall caused a contusion of the perineum and the scrotum, showing that considerable force had been exerted on the parts. This force by being conveyed upwards would readily cause rupture of the capsule of a soft sarcoma in the prostate, but evidently was not sufficient to produce a rent in the mucous membrane of the bladder, hence no free bleeding was observed immediately after the accident. The capsule of the sarcoma being ruptured by the blow the tumour extended rapidly, and at the beginning of May penetrated the mucous membrane, and so bursting into the cavity of the bladder caused profuse bleeding with retention of urine.

Surgical treatment gave relief to the immediate symptoms, but the tumour, which was small when first noticed, rapidly increased while the patient was under observation, and within three months it practically filled the bladder. Soon afterwards the patient died from haemorrhage and exhaustion. A claim was made under the Workmen's Compensation Act and full compensation was awarded.

A point of clinical and pathological interest in this case is the effect of injury in inducing rapid extension of the sarcoma, and in this connexion I may quote a passage from *Tumours Innocent and Malignant*, by Sir John Bland-Sutton,¹ as applied to sarcoma of the mamma, where such tumours are more frequently met with than in the prostate:

In regard to sarcoma of the breast, there is a definite opinion held by experienced surgeons to the effect that there are many carefully observed and thoroughly reported cases in which primary sarcoma of the breast has quickly supervened on a single intensive injury. The sarcomatous nature of the tumours has been ascertained by a microscopic examination at the hands of a competent pathologist, and their malignant nature has been confirmed by the early death of the individual. It is undeniable that a single intensive blow or knock on the breast may be occasionally followed by a sarcomatous tumour.

Injury is now generally admitted by surgeons to be an etiological factor in carcinomata and sarcomata, but it is difficult to say what exact relation such injuries bear to the genesis of malignant neoplasms. The case here described appears to me to throw some light on the subject. Here we have a man enjoying what appeared to be perfect health; he receives a severe blow on the perineum, and two months afterwards I find the bladder occupied by a large fungating sarcoma, which protruded from a cavity in the prostate, the walls of which were well defined. That there was a well defined cavity showed that the growth had been circumscribed, and that it was not an infiltrating tumour to begin with. If the tumour had been caused directly by the injury the growth would have been diffuse, no

capsule having had time to form. It therefore seems reasonable to accept the view that the injury ruptured the capsule and caused the rapid spreading of the neoplasm. May this not also be true of traumatism as a cause of malignant disease elsewhere? Can the injury of a healthy tissue, independent of other factors, produce disease? I consider the answer must be in the negative. It is true that many diseases and tumours closely follow contusions, but the injured tissues are not healthy, there is some other element, known or unknown, of greater importance—organisms in tuberculous disease and in septic conditions, and probably small undiscovered tumours in malignant disease.

In America, Charles A. Powers,² M.D., of Denver, has made a careful study and analysis of the literature accessible to him and also gives a very complete list of references. He only discovered 22 cases of primary sarcoma of the prostate the histology of which has been demonstrated by microscopic examination. Including his own case the tumours were classified as follows:

Small round-celled	...	...	...	8 cases
Spindle-celled	...	...	...	3 "
Myxosarcoma	...	...	...	3 "
Spindle-celled and myxosarcoma	...	...	...	2 "
Small round-celled and spindle-celled	...	...	...	1 case
Angiosarcoma	...	...	...	2 cases
Adenosarcoma	...	...	...	1 case
Mixed celled	...	...	...	1 "
Large round-celled	...	...	...	1 "
Microscopically examined, but form not given	...	...	...	1 "
Total	...	...	...	23

The ages of the patients in the 23 cases classed as authentic are as follows:

0 to 15 years	...	...	...	13 cases
16 to 30 "	...	...	...	4 "
31 to 60 "	...	...	...	5 "
Over 60 "	...	...	...	1 case
Total	...	...	...	23

About a half of the cases were either round or spindle-celled growths, while the remainder were mixed tumours, and 56.5 per cent. were under 15 years of age.

Surgeons are agreed that primary sarcoma of the bladder is a very rare disease, but whether or not a clear distinction between tumours originating in the prostate from those arising in other parts of the bladder has been always made is difficult to say. Albarran found that out of 89 tumours of the bladder only two, on microscopical examination, proved to be sarcomatous.

Chassia Munwes³ found that of 107 cases 75 were submitted to operation by one or other of the following methods:

Suprapubic	...	...	...	44 cases
Perineal incision	...	...	...	11 "
Urethral in women	...	...	...	9 "
Laparotomy	...	...	...	3 "
Sacral route	...	...	...	1 case
Vaginal route	...	...	...	1 "
Method not stated	...	...	...	6 cases
Total	...	...	...	75

The diagnosis of sarcoma of the bladder is very uncertain notwithstanding all modern methods of examination. The cystoscope cannot be relied upon to detect these tumours on account of their resemblance to carcinomatous growths, and because of the severe haemorrhage induced by the introduction of instruments into the bladder.

The only instance in which I have succeeded in diagnosing a sarcoma of the bladder, revealed by the cystoscope, was in a case where the tumour was secondary to "recurrent fibroid" elsewhere.

A man, aged 26, who had been operated upon several times for "recurrent fibroid," one on the knee, a second on the hip, and a third on the right lumbar region. When I saw him for the first time there were seven such tumours below the level of the waist, and one over the left shoulder in front. He complained of frequent and painful micturition, and had occasional attacks of haematuria. Cystoscopic examination revealed a rounded tumour on the anterior wall of the bladder. The surface was mottled bluish-red, and there was an irregular lozenge-shaped pale blue patch almost in the centre; over the surface there was a large number of small capillaries. The mucous membrane was deeply injected and the vessels dilated. In the circumstances an operation was deemed inadvisable, but a section of the tumour *post mortem* showed it to be a round and spindle-celled sarcoma.

Here the diagnosis was facilitated by the circumstances that (a) the tumour occupied the anterior wall of the bladder; (b) the mucous membrane covering the growth was intact; (c) haemorrhage was comparatively trifling; and (d) sarcomatous growths elsewhere were present. As a rule, the diagnosis can only be made by an exploratory incision.

Beyond the good effected by palliative measures to lessen the pain of retention little can be done in the way of treatment. A number of radical operations have been suggested and practised, but the results have not been encouraging. Sarcoma being an infiltrating tumour, by the time it comes under the eye of the surgeon no cure can be looked for from any operation which is not radical, consequently total extirpation of the bladder has been advocated, and has been performed in a considerable number of cases, but, as I shall show immediately, out of 69 operations we have only 3 instances of permanent cure. The cases in which a radical operation are indicated are very few.

1. The patient must have good general health, and strength to undergo a severe operation.

2. In the prostate the tumour must be still encapsulated, in the bladder it must be limited in extent, and there must be no evidence of metastatic deposits in glands or other organs.

3. There must be no ureteral obstruction, and the renal functions must be active and healthy.

In sarcoma of the prostate, so long as the tumour remains encapsulated, as it was in the case above described, prior to the accident, complete extirpation through the perineum may be possible. In fact, in this case, if the tumour had been diagnosed while the capsule was intact, the case would have been just the most suitable for a radical operation, but when the capsule was ruptured and the prostate had become infiltrated, it passed beyond remedy. For example, Socin, in 1894, removed through the anus and rectum, without injury to the urethra or bladder, a large encysted sarcoma, and the patient showed no evidence of recurrence three years thereafter.

In sarcoma of the bladder, as in primary growths in the prostate, as soon as the diagnosis is made the question arises, Is it advisable to remove the tumour? Many surgeons argue that, considering how rapidly the disease leads to a fatal issue when operative aid is withheld, together with the agony endured from retention, a suprapubic drain should certainly be established for the sake of the immediate relief given, and that if the indications are favourable, complete excision of the tumour, or even cystectomy, may be considered; in view of the very unfavourable results obtained up to the present time the latter operation cannot be recommended.

Statistics of 69 Cases in which the Results were stated (Munwes).

Survived for a few days	...	...	...	21 cases
Deaths a few weeks after	...	...	...	11 "
Apparently cured for a short time	...	...	...	13 "
Cures followed by recurrence	...	...	...	15 "
No data	...	...	...	6 "
Permanent cures	...	...	...	3 "
Total	...	...	...	69

Rafin collected 30 cases of excision of the bladder with a mortality of 56.6 per cent., and of those who survived only two are recorded as permanently cured.

The only operation which prolongs life and gives immediate relief to suffering, at the same time involving no additional danger, is a suprapubic drain. On account of the haemorrhage following its employment the use of the catheter is contraindicated.

REFERENCES.

1. J. Bland-Sutton, F.R.C.S., Cassell and Co., London, fifth edition, p. 278. 2. *Trans. Amer. Surg. Assoc.*, vol. xxv, p. 213 et seq. 3. *Zeitschrift für Urologie*, vol. iv, No. 11.

THE Boston Medical and Surgical Journal of December 19th says that, according to estimates made by American public health services based on reports from States and cities where accurate records are kept, between 300,000 and 350,000 deaths were caused by influenza in the United States since September 15th. Public health officials believe that these figures are conservative. In the camps of the United States influenza has been responsible for about 20,000 deaths, and 3,500 men who died of the disease on their passage across the Atlantic were buried at sea.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE NEPHRITIS FOLLOWING INFLUENZA.

DURING the recent pandemic of influenza our chief attention has been given to the prevention of pneumonia, but on November 5th another sequel was brought to my notice in the form of three cases of acute nephritis. I think it wise to examine carefully the urine of those patients who are obviously worse than the majority of those infected, since a warning may thus be received. At the outset the symptoms of influenza and acute nephritis are somewhat similar, both having a sudden onset, a feeling of chilliness, pain in the back, and occasionally nausea and vomiting, but there is no doubt of the diagnosis when, as a rule, within twenty-four hours puffiness of the face and eyelids and sometimes ankles leads us to examine the urine.

Case 1.—M. E., aged 10 years, female. Attack of influenza November 2nd. On November 5th, headache, backache much increased. Nausea, vomiting, and extreme pallor, in contradistinction to flushed face of influenza. Urine, 10 oz. in twenty-four hours, specific gravity 1025; acid, smoky, albumin, blood, epithelial tube casts. Face, eyelids, back of hands, legs and ankles oedematous. On November 8th patient more restless, persistent vomiting; uraemic convulsions and death on November 9th.

Case 2.—S. W., aged 14 years, female. Attack of influenza November 2nd. On November 5th, general puffiness, with intense headache and vomiting. Patient sleeps nearly all day. Urine, 17 ounces in twenty-four hours, specific gravity 1026; acid, albumin, epithelial granular tube casts. Headache and vomiting improved, and after November 9th urine increased in amount and gradually returned to normal. Recovery.

Case 3.—H. M., aged 3 years, female. Attack of influenza November 2nd. On November 5th, headache, vomiting, puffiness of face, and pallor. Urine, 10 ounces in twenty-four hours, specific gravity 1028; acid, albumin, blood, and casts. Urine became less daily, and headache, vomiting, and oedema increased. On November 9th there was suppression of urine, photophobia, dyspnoea, uraemic convulsions, and death.

In each case the attack of influenza was severe, with high temperature and intense myalgic pains, the urine containing a copious amount of urates; on the fourth day the urine of acute nephritis was passed. After the fourth day the temperature in no case was high or constant. Treatment consisted in limiting fluids and proteins, giving thin gruels and fruit juices for the first two or three days, followed in the case that recovered by junkets, custards, and vegetable soups. In each case a simple diaphoretic mixture was prescribed, with hot wet packs. Rectal injections of 40 grains of potassium bromide and 20 grains of chloral did not control the convulsions.

I think the above cases are of interest, since all occurred in females under 15 years of age and all started on the fourth day of an attack of influenza. Chronic nephritis is a more common sequel of influenza than acute nephritis. The cases show the importance of examining the urine during epidemics such as these.

Wrexham.

A. LLOYD DAVIES, M.B.

A CASE OF INTRAPERITONEAL TRAUMATIC RUPTURE OF THE BLADDER.

TRAUMATIC rupture of the bladder is by no means a common injury, and when it occurs is very apt to be overlooked. This is particularly the case when the rupture is intraperitoneal and unassociated with other injuries, such as fractured pelvis, etc., which serves to focus attention on the bladder. The following case may be of interest:

Sgt. M. was admitted on July 20th, 1918, suffering from retention of urine and hypogastric pain but with no evidence of shock. The catheter did not afford much relief and the urine contained blood. The lower abdomen was rigid and tender to pressure. There was very little to indicate the nature of the lesion until the history of the illness from its onset was thoroughly investigated. It appeared that on the evening before admission the patient was spending a convivial evening with some friends. After indulging in a certain amount of beer he attempted to go downstairs to pass urine. At the top of the stairs he tripped and fell headlong, and then found that he was unable to urinate. With this history a provisional diagnosis of rupture of the bladder was made. He was catheterized just before operation, and it was highly disconcerting that a large quantity of urine was obtained, as this did not seem to accord with the diagnosis of ruptured bladder. However, it was possible to explain it on the supposition that the point of

the catheter had passed through the rent in the bladder into the peritoneal cavity, or that the rent was temporarily closed by omentum. I opened the abdomen through the sheath of the right rectus. The peritoneal cavity contained blood-stained urine. With the patient in the Trendelenburg position the rent in the bladder was readily discovered on the postero-superior aspect. The hole, which easily admitted a finger, was closed with catgut, and rendered secure by a layer of Lambert sutures. A large drainage tube was placed in the pouch of Douglas, and, in addition, the bladder was drained for a few days by a catheter in the urethra. The urine remained alkaline for some time but eventually became normal under the effect of arotropine. There was no further complication, and the patient was discharged to his unit on September 24th.

In cases of intraperitoneal rupture of the bladder the rent is usually on the postero-superior aspect. Some authorities attribute the frequent occurrence of the rupture at this site to compression of the bladder against the sacral promontory, but the most likely explanation is the scarcity of muscular fibres at this point of the bladder wall. Whatever the explanation, it is providential that it should occur at a point which is fairly accessible to the surgeon.

To judge from the mortality rate, intraperitoneal rupture of the bladder is a grave injury. Without operation the death rate is given at 98 per cent. Approximately about 50 per cent. of cases recover if operated upon. As might be expected, the more prompt the operation the better the prognosis. Attempts at confirming the diagnosis by distending the bladder with boracic lotion or gas are of doubtful value and may cause considerable harm by setting up sepsis.

GEORGE BLAIR, Capt. R.A.M.C.

Hill House Hospital, Minster, Ramsgate.

Reports of Societies.

TESTS OF PHYSICAL EFFICIENCY.

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine, held on January 10th, the President, Lieut.-Colonel E. W. GOODALL in the chair, Lieut.-Colonel MARTIN FLACK, C.B.E., read a paper on some simple tests of physical efficiency.

Colonel FLACK described in detail five tests extensively employed by him in the Royal Air Force—namely: (1) The pulse rate at rest, sitting, standing, and after the subject had raised his body weight the height of a chair five times in fifteen seconds, together with the length of time of return to the normal standing rate; (2) the length of time the breath could be held before and after exercise; (3) the measurement of the vital capacity by means of a modified gas meter; (4) the expiratory pressure recorded on a mercury manometer; (5) the length of time the subject could maintain an expiratory pressure of 40 mm. of mercury after full expiration and full inspiration, and the response of the pulse during this effort. The standards of these tests had been worked out on selected successful flying officers, and a considerable body of statistical evidence was produced showing that success in these tests, particularly the last, was closely correlated with efficiency as flying officers; officers judged on quite other grounds, whether military or medical, to be good pilots passing the tests well, while the great majority of failures would have been definitely rejected by the tests. Colonel Flack emphasized the opinion that the tests revealed some cause of ill success, the exact nature of which would need clinical investigation and might vary from individual to individual, that he was not advocating the stereotyping of a routine examination or suggesting that any such routine would replace clinical observation. He thought that the tests, with suitable modifications of standards, might have a field of usefulness wider than the Air Force and be applied in connexion with studies of physical efficiency and fatigue in industry as well as in school clinics.

Sir R. DOUGLAS POWELL, in opening the discussion, remarked that although he could not discuss the technical details of Colonel Flack's work he was impressed by the importance of the tests and the probability that their generalization to other classes would give valuable information.

Dr. LEONARD HILL, F.R.S., observed that it was very gratifying to him to see the way in which pure physiological work had been adapted to practical ends by the

logical development of the ideas suggested by such work as that on the influence of gravity upon the circulation and on the effects of oxygen inhalations.

Dr. HENRY HEAD, F.R.S., thought that the fundamental importance of Colonel Flack's work resided in the development of a method which would rapidly separate from the mass those individuals whose condition stated generally was unsatisfactory, so that the necessarily limited time of the investigator might be used to the best advantage in analysing the causes of unfitness.

Brigadier-General HEARSON, C.B., said that from the administrative aspect it was gratifying to think that the method would reduce the margin of uncertainty in classification dependent upon individual opinion.

Sir WALTER FLETCHER, F.R.S., thought that Colonel Flack's researches provided one of many object lessons upon the need of strengthening the alliance between physiology and clinical medicine.

Captain M. GREENWOOD pointed out the concordance between Colonel Flack's and Dr. Head's views as to the significance of the tests and those of the experimental psychologists who had worked out the doctrine of a common general factor, and said that a statistical investigation would probably aid in determining the relative values of the tests from that point of view.

GYNAECOLOGICAL TUMOURS.

At a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland held on November 22nd, 1918, with the PRESIDENT of the Academy in the chair, Dr. BETHEL SOLOMONS showed a specimen of sarcoma of the cervix which he had removed from a woman aged 50. She had been married twenty-six years, had eleven children, the youngest of whom was aged 11. She complained of a feeling of "womb falling" after the birth of her last child, but the symptoms vanished until fourteen days before she consulted him. On examination a mass about the size of a large grape fruit filled the vagina, and was found to have a distinct connexion with the posterior lip of the cervix, with which it was incorporated. The tumour was removed, and as the cervix was hypertrophied it was amputated. Pathological examination revealed the growth to be a spindle-celled sarcoma, with a large amount of hyaline degeneration of the capillaries, forming a kind of cylindroma. Dr. Solomons performed Wertheim's hysterectomy, and the convalescence was without incident. The uterus on examination proved to be normal. He commented on the silent growth of the tumour, with absence of symptoms which was typical of these rare cases of primary sarcoma. He thought that a radical hysterectomy should always be done in this class of case.

Dr. WIGHAM described the pathology of the specimen. He thought that the sarcoma, although malignant, was, if one might call it so, a benign form of sarcoma.

Dr. PURFORD remarked on the rarity of sarcoma limited to the cervix uteri; he could only recall one case similar to the one just described. In it a large sloughing mass distended the vagina and vulva, and hysterectomy was performed, but death ensued from sepsis. In very young subjects myxosarcoma was sometimes seen springing from the cervix in the form of numerous small cysts, but its removal was generally followed by recurrence. Notwithstanding the pathologist's opinion, he was inclined to regard Dr. Solomons's case as one of uterine fibroid showing sarcomatous degeneration.

Sir WILLIAM SMYLY showed two tumours of the mesentery removed from a patient in the Adelaide Hospital. She had a large cystocele, which protruded through the vulva, and caused much difficulty in emptying the bladder. On examination a tumour was discovered in Douglas's pouch, which was supposed to be ovarian. After performing an anterior colporrhaphy the abdomen was opened and the tumour, which was exceedingly friable, was drawn out of the abdomen, and found to be intimately connected with the intestine. A second tumour was discovered higher up in the mesentery. The tumours, which were supposed to be malignant, were removed with about two feet of the ileum and a large piece of mesentery, and the severed gut restored by a side-to-side anastomosis. The patient made an uneventful recovery.

Captain SPEARES, who had examined the specimen, said it was impossible to come to a definite conclusion as to the

nature of the main mass of the tumour. The edges were tuberculous, but the central portion was so necrotic that it was impossible to diagnose the condition.

AFTER-TREATMENT OF STUMPS.

At a meeting of the West London Medico-Chirurgical Society on January 10th, in the Society's Rooms, West London Hospital, the President, Lieut.-Colonel E. M. WILSON, in the chair, a paper was read by Major W. McADAM ECCLES, M.S., R.A.M.C.(T.), on stumps and their after-treatment. The lecturer stated that probably never before in the history of the world had there existed so many human beings *minus* one or more limbs. "Congenital stumps" were due to failure of peripheral development. Acquired stumps might be either sound or pathological. Of the latter, painful, conical, and inflamed varieties of stumps were of prime importance. Painful stumps were due usually to bulbous nerve endings, or to implication of a nerve in scar tissue. Conical stumps resulted from retraction of soft parts, usually the outcome of sepsis, and persisted unless dealt with by reamputation. Inflamed stumps resulted from necrosed bone, septic ligature, or other foreign body in the tissues, and the cause must be removed after x raying. Major McAdam Eccles then dealt with the results he had seen of Bulgarian and other foreign surgery in double primary amputations, and commented upon various forms of temporary and permanent artificial limbs, contrasting those required for the upper extremity with those for the lower. The usefulness of an artificial limb depended on the man's mental ability and the kind of work that he proposed to do subsequently. The results of kinematization were stated to fall short of expectations.

The paper was illustrated by lantern slides, and was discussed by the PRESIDENT and Mr. MUIRHEAD LITTLE, who said that 15,000 stump cases had passed through his hands at Roehampton in the past three and a half years. In his experience bulbous nerves were common in the earlier cases, but were now infrequently met with. He advocated the early use of fibre pegs, and said that double amputation below the knee had been common, with remarkably good results.

Other speakers were Sir ROBERT ARMSTRONG-JONES, Dr. RICHARD LLOYD, Dr. F. G. LLOYD, and Dr. SANGUINETTI.

Reviews.

WALTER JAMES DODD.¹

Success always attracts, and when won against exceptional difficulties compels admiration; but success only becomes complete when the personality of the winner attracts the love of all about him. This, in a sentence, is the story of Walter James Dodd, the latest x-ray martyr. A London lad, who went, in 1879, at the age of 10, to Boston, he at first did odd jobs in offices and shops and then got a berth as janitor in the Harvard chemical laboratory. Studying chemistry and pharmacy in his spare time, he was appointed, in 1892, assistant apothecary at the Massachusetts General Hospital. One of his duties was to act as official photographer. With the discovery of the Roentgen rays Dodd began a study of the subject, and very quickly became an adept. As early as November, 1896, he began to pay the penalty with a severe dermatitis. In those days the serious effects of the rays were not known, and Dodd's case was one of the earliest to call attention to the gravity of the lesions. In July, 1897, the ulcers became so extensive that skin grafting was performed. In spite of much suffering and ever-increasing disability he kept at work and built up a great x-ray department at the hospital, and had a career of unusual success in private practice. He became one of the leading experts and writers on the subject in the United States.

In June, 1915, Dodd went to France with the Harvard unit, and exercised a wide influence in the hospitals of the Camiers district. His accurate technique, untiring enthusiasm and helpfulness were of the greatest value. As his biographer says, it was an illustration of the fact that it is human rather than the mechanical equipment that counts. During a visit to the Harvard unit the writer

¹ Walter James Dodd: a Biographical Sketch. By John Macy. Boston: Houghton, Mifflin, and Co. 1918.

was deeply impressed by his rare and winning personality. Though suffering and much crippled he had an extraordinary capacity for work, and a contagious optimism that was a valuable asset in that uninviting spot. He had to return to Boston in the autumn of 1915. There were constant recurrences of the carcinoma, necessitating frequent operations, which he bore with uncomplaining heroism. Secondary disease of the lungs developed, of which he died December 18th, 1916. With many of the common virtues, industry, courage, and kindly humour, there was in addition a subtle charm of character which left a deep impression on all who met him, and he will live in minds made better by his presence. W. O.

THERAPEUTICS OF ARSENIC.

DR. RAVAUT has contributed an interesting number on the treatment of syphilis, malaria, and amoebiasis, to the well-known Collection Horizon.² In the first part, that devoted to syphilis, a good account is given of the most up-to-date treatment. Eight arsenical injections and forty-six mercurials are recommended during the first two months, and it is pointed out that the sooner the treatment is begun after the original infection, the better the chances of completely sterilizing the patient. The dangers of arsenical injections are duly considered; the author's experience is that the new salts, which have replaced the old salvarsan, are so much safer as to be practically devoid of risk.

In malaria, as in syphilis, the sooner treatment is commenced after the onset of symptoms, the better the chance of permanent cure. Abram's doses, which are recommended (3 grams, or 45 grains a day), are larger than those usually given by English workers (30 grains a day). Some of Abram's cases manifestly were not followed up long enough for accurate statistics to be founded on them. In chronic malaria, called by the author *paludisme secondaire*, the importance of combining quinine with arsenic is properly insisted upon. Most physicians who have had experience of this disease have used this method for years.

The suggestion that arsenicals should be used in amoebic dysentery does not rest on any such sound basis as their employment in the two diseases just dealt with. There is no proof that arsenic is in any way specific against *E. histolytica*, and though in chronic cases of dysentery its general tonic action may be beneficial, there does not seem to be any great justification in using it in ordinary acute cases of the disease. Ravaut's cases have not been followed up long enough to determine whether they were really cured—that is, completely sterilized of the amoebae. Results as good as his with the combined treatment could have been produced by one or other of the emetine methods alone. Ravaut calls attention to the chronic resisting type of case, which apparently is not influenced by any form of treatment; more work on this very important matter is urgently required. Bacterial dysentery and diarrhoeas of different varieties are not dealt with in the book.

PURIFICATION OF RURAL WATER SUPPLIES.

In *Rural Water Supplies and their Purification*³ Sir A. C. Houston's object is to show the intelligent country householder how he can purify almost any water supply to any standard of safety required. We fear that the author is unduly optimistic as to the amount of time and thought that the average individual will give to the subject, and even the reader who has had a training in elementary chemistry will require to study this little book with the interest of an enthusiast to avoid mistakes. The author's main aim is to indicate how 10 gallons of water each day can be purified by the use of excess of lime, chlorine, alum, etc. The book is concerned chiefly with non-filtration processes of water purification, and the writer, as a pioneer in the use of lime and chlorine for this purpose, is able to give facts and figures drawn from a rich experience. The practical sanitarian will, however, ask himself whether Sir Alexander Houston has not taken too narrow a view of the problem, and whether it would not be better

to improve the whole supply at its source by structural alteration of the filtration plant, etc., rather than every day to treat 10 gallons in a cistern.

After all, water for ablution and washing purposes will require to be rendered innocuous, and, in part, this will be effected by heat. It would seem, therefore, that the average individual would find it simpler, safer, and cheaper to boil the water required for drinking rather than to provide himself with the reagents, burettes, balance, indicators, etc., required to treat scientifically the water with chemicals. The author does indeed state that sterilization by means of heat "from the point of epidemic water-borne disease" has no equal, and is applicable to every kind of water, and he would have done well to discuss the method at greater length, and to compare it with the others as regards simplicity, cost, and efficiency.

One lays down the book with the feeling that water purification, which can be easily accomplished by communal and collective effort, presents great difficulties to the individual. The work will be very helpful to all confronted with this problem, whether they be laymen or experts. It is an advantage to have the conclusions of a distinguished leader like Houston available in a handy little volume.

NEW YEAR HONOURS.

The following is a continuation of awards for valuable services in connexion with the war:

C.B.E.

Colonel William George Reys, A.M.S., Assistant Director of Medical Services, Bombay Division.
Dr. Henry Hallett Dale, F.R.S.
Dr. Alfred Eichholz, Senior Assistant Medical Officer, Board of Education.
Dr. Samuel Lyle, Commissioner of Medical Services, Ministry of National Service.
Lieut.-Colonel Ellicott Leamon Ward, I.M.S., Inspector-General of Prisons, Punjab.

O.B.E.

Dr. Alexander M. Elliot, Head Quarters Medical Examiner, British Red Cross Society.
Dr. Alfred C. Ferguson, Commandant and Medical Officer, Thirsk Auxiliary Hospital, Yorkshire.
Dr. John Temperley Grey, Donor and Medical Officer, Stanmore House Auxiliary Hospital, Leham.
Dr. Robert William Johnstone, Commissioner of Medical Services, Ministry of National Service.
Mr. John Reuben Lunn, F.R.C.S., Commandant, "The Cecils" Auxiliary Hospital, Chappell Croft, Sussex.
Dr. Hugh Allan Macewen, Medical Inspector, Local Government Board.
Mr. Frank Cole Madden, F.R.C.S., Senior Surgeon, Kasr-el-Ainy Hospital.
Captain Lionel E. C. Norbury, Surgeon, British Red Cross Hospital, Netley.
Major David Valentine Rees, T.D., Operating Surgeon, Brecon and Builth Auxiliary Hospitals.
Dr. Edward Coleridge Roberts, J.P., Senior Medical Officer, G.orelands Auxiliary Hospital, Southgate.
Major Charles S. de Segundo, V.D., Deputy Commissioner of Medical Services, Ministry of National Service.
Dr. Prileaux G. Selby, Medical Officer, Auxiliary Hospital, Sittingbourne, Kent.
George Robert F. Stilwell, Medical Officer, Balgown Auxiliary Hospital, Beckenham, Kent.
Lieut.-Colonel Frank S. C. Thompson, I.M.S., Superintendent, Presidency Jail, Bengal.
Dr. George M. Winter, J.P., Chairman Torquay Food Control Committee.

M.B.E.

Dr. John Adams.
Dr. Wm. Stacey Aslett, Medical Officer, Knighton Auxiliary Hospital, Leicestershire.
Dr. Wm. Baigent, Officer in Charge, Northallerton Auxiliary Hospital, Yorkshire.
Dr. George S. Brock, British Red Cross Hospital, Italy.
Dr. James Culross, Medical Officer in Charge, Newton Abbot Auxiliary Hospital, Devonshire.
Dr. George Hoyle, Commandant, The Plains and Brooksbank Auxiliary Hospital, Eiland.
Dr. H. P. Powell, late Transport Officer, Cheltenham Group of Hospitals.
Dr. James Simcock, Assistant County Director for Heaton Chapel Division, Lancashire Branch, British Red Cross Society.
Dr. John C. Smyth, Commandant and Medical Officer, Fairfield Auxiliary Hospital, Malvern.
Dr. John Wallace, Commandant, Ashcombe House Auxiliary Hospital, Weston-super-Mare.
Honorary Member of the Civil Division.—Dr. Ali Effendi Fahmi El Shaiti, Principal Medical Officer, Benha Hospital, Soudan.

²*Syphilis, paludisme, amibiase. Traitement initial et cure de blanchiment.* By Paul Ravaut. Préface du Professeur Fernand Vidal. Collection Horizon. Paris: Masson et Cie. 1918. (Cr. 8vo, pp. vi+88, Fr. 4.)

³*Rural Water Supplies and their Purification.* By Sir Alexander Houston, M.B., D.Sc., F.R.S.Ed., Director of Water Examination, Metropolitan Water Board. London: John Bale, Sons, and Danielsson, Ltd. 1918. (Demy 8vo, pp. xv+126; 19 figures. 7s. 6d. net.)

British Medical Journal.

SATURDAY, JANUARY 18TH, 1919.

THE MACHINERY OF GOVERNMENT.

THE report of the Machinery of Government Committee¹ presented to the Minister of Reconstruction is a State document of more than usual importance. Incidentally it touches many matters of direct interest to the medical profession which call for careful consideration. We can now refer only to its general scope.

The Committee was appointed in July, 1917, to inquire into the responsibilities of the various departments of the Central Executive Government, and to advise in what manner the exercise and distribution by the Government of its functions should be improved. The British Constitution, which has served as the model for many others, is nevertheless unwritten, and this fact, though it has sometimes been a source of weakness, has more often been an advantage, since the constitution has retained the character of a living organism constantly adapting itself to changes in the environment. One of the weaknesses—which has become very apparent during the last generation—has been the multiplication of ministries and departments to suit the convenience of the moment. The Committee lays down the general principle that the distribution of departmental duties should be made according to the nature of the service to be rendered to the community as a whole, and not according to the interests of comparatively small classes. The application of this principle—that the machinery of Government should be organized in relation to the kind of service which each part yields—has led the Committee to recommend ten main departments of work; the first is finance, the second and third national defence and external affairs, the fourth research and information, the fifth production, transport and commerce, the sixth employment, the seventh supplies, the eighth education, the ninth health, and the tenth justice.

The chief conclusion and recommendation of the Committee is that "further provision is needed in the sphere of civil government for the continuous acquisition of knowledge and the prosecution of research, in order to furnish a proper basis for policy." Adequate provision has not been made in the past for the organized acquisition of facts and information and for the systematic application of thought as a preliminary to the settlement of policy and its subsequent administration. In the spheres of military and naval affairs the need for intelligence work is fully accepted, and two departments—the Board of Education and the Local Government Board—have made separate provision for intelligence work, the first as long ago as 1895, when its office for special inquiries and reports was established; the intelligence department of the Local Government Board was only organized in 1914, although work of this nature has been done on a considerable scale for many years by the medical department.

It is recognized that each Ministry requires its own intelligence department to conduct special inquiries into matters affecting the business of the department,

to make a continued study of methods of administration in other parts of the British Empire and in foreign countries, to circulate in the department statements bearing upon administration, and to maintain a departmental library. But the Committee is very definitely of opinion that there is need of intelligence and research services outside the organization of any particular administrative department, and available to all departments. The organization of the Public Record Office and the development of the Government Chemists Department are instances of such central intelligence departments. Science, it is well said, ignores departmental as well as geographic boundaries; the harvest of results is won for the benefit of the administrative departments as a whole. But the Committee is careful to insist that the expansion of intelligence research work for general use would not conflict with the view that all departments which have already made distinct provision for intelligence work should continue to do so, and that many which have not might do so with advantage. The Committee holds that most departments must continue to provide themselves with the organization for the collection and collation of statistical material acquired in the course of administration, and that many departments must retain under their own control a distinctive organization for the prosecution of specific forms of inquiry so that the Minister may possess the means of instituting a competent, swift, and self-contained inquiry to enable him to deal with any specific administrative problem.

The Committee which expresses these views was strong on the administrative side; its chairman was Viscount Haldane, and among its members were such experienced civil servants as Sir Robert Morant and Sir George H. Murray, formerly Permanent Secretary to the Treasury. The application of the principles it lays down may have a profound effect on the conduct of the nation's business during the period of reconstruction and long after.

THE FUTURE OF THE R.A.M.C.

THE future of the Army Medical Service is a matter of deep concern to all who have at heart the welfare of the British soldier and the progress of British military medicine. The peace establishment of the Royal Army Medical Corps is still an unknown quantity, and must remain so while war conditions prevail, and, indeed, until after peace is concluded, when only will it be possible to determine the magnitude of the naval and military forces which must be maintained by each nation to ensure the peace of the League of Nations. It is not, however, too soon to consider now the principles upon which the selection and promotion of the permanent officers of that corps will be based. In an article on this subject printed last spring, when the war was going badly, it was our contention that the enemy successes on the Western front were no ground for delay in the institution of reforms at home. With the formal declaration of peace in sight there is more reason than ever for insisting that the time is at hand to place the Army Medical Service on a sounder footing as a scientific organization.

The object, to fulfil which a military medical service exists, is to maintain effective for military action against the enemy the largest possible proportion of the nominal roll of the forces. This proposition will not be disputed, but, simple as it is, its application involves a complex organization. A military medical service must institute and carry out measures for the

¹ H.M. Stationery Office. (Cd. 9230.) 6d. net.

prevention of disease, the treatment of the sick, and the collection and treatment of the wounded, including the prevention of wound diseases. Whether on a war or a peace footing, it must furnish in good working order a system by which the medical personnel of all grades is very thoroughly trained for these duties. While it thus occupies itself with the application of knowledge already acquired to the needs of the forces at the moment, it must also be diligent in the acquisition of fresh knowledge to render existing methods of prevention and treatment more effective. Thereby it is not only fulfilling its primary duty to the soldier or sailor and the country of which he is a citizen, but is contributing to the general stock of knowledge. The soundness of this principle has been recognized by those responsible for the policy pursued with regard to the Army Medical Service. The need for research into the causes of diseases, and their prevention by attention to general sanitary principles and by the use of vaccines, has been fully appreciated; the fine laboratories of the Royal Army Medical College, Millbank, are evidence of good intentions in respect of research, and from them have already come many important contributions to knowledge.

But we fear it must be said that under existing conditions excellence in medical research and clinical work does not meet with its due reward in the Army Medical Service, and that for an officer to engage in one or other of these directions is to enter a blind alley so far as concerns his prospects in his own service. We are quite aware that certain army medical officers who have taken to work of this kind have reached high rank, but the status in the army of medical officers of scientific attainment has not always corresponded with the position they have achieved in the world of science. This we conceive to be a serious defect in the existing system, and if we apply the same test to distinction in clinical work the case is even worse. The fact seems to be that if an army medical officer designs to attain the highest ranks in his service he must abandon clinical or research work in order to attain promotion through what has come to be the "usual channel." It ought, we conceive, to be possible to make such alterations in the rules or customs of the service as will ensure that an officer who has attained distinction as a surgeon, a physician, a pathologist, or a bacteriologist, should be able to feel confident that he will not be passed in the race for promotion by those who have abandoned these difficult spheres of work for the relatively easy task of administering hospitals or Divisions. We hold it to be a real misfortune for the future of the R.A.M.C. that under existing conditions so many of its ablest officers are tempted to leave the scientific and clinical side for the administrative side because the latter is the straight path to promotion.

There is one very good reason why this matter should be gone into now: if discussion be deferred until the permanent officer strength of the Royal Army Medical Corps is laid down, it may be too late for effective reform. Already a considerable number of young medical men serving temporarily in the R.A.M.C. have been offered and granted Regular commissions, as the extracts from the *London Gazette* published in the SUPPLEMENT have shown. The question we feel obliged to ask is, Upon what principle have these officers been chosen during the war by the army medical authorities? Unless we are misinformed, the answer is that military attributes, such as gallantry, leadership, and efficiency in minor administrative posts, have counted above scientific and clinical ability. We fully admit the value of soldierlike qualities in the officers of a military

organization, but to recruit a medical corps on that basis and without at least equal regard to professional attainments would be unfortunate.

We believe that as long ago as 1916 medical officers serving temporarily were invited to apply for permanent commissions in the R.A.M.C. and that a number were chosen on the recommendation of their superior officers. We understand that the invitation was repeated at the close of last year, and the terms then announced are printed at p. 88. It is beside our present purpose to offer criticism of these terms, though, as a correspondent points out this week, the fourth paragraph seems to operate unfairly by withholding the gratuity of Special Reserve and Territorial medical officers who join the Regular R.A.M.C. We raise the matter now in order that a sounder method may prevail in the selection and promotion of permanent officers; for "the life of the execution of affairs resteth in the good choice of persons."

TESTS OF GENERAL FITNESS.

We publish elsewhere in this issue a summary of the discussion in the Section of Epidemiology and State Medicine of the Royal Society of Medicine initiated by the paper read by Lieut.-Colonel Martin Flack, R.A.F., on tests of physical efficiency. A number of points were brought out which suggest fruitful lines of research and are worthy of general notice. The salient feature is this: certain tests based upon physiological reasoning and designed to explore particular physiological functions have been found to differentiate broadly those fit to perform duties involving great physical and mental strain from those who, for a great variety of reasons, are not fit. The significance of the tests is not altogether what *a priori* reasoning had suggested. Failure to respond adequately is not a proof that some clear-cut lesion exists, but may be a consequence of a generally imperfect co-ordination of organic activities, a condition which need not be permanent and may yield to appropriate treatment. We have here an illustration of the need to keep constantly in mind the principle of organic correlation. The interplay of causes is especially complex because an element of failure to respond is sometimes a lack of resolution—that is, a psychological condition—and we have to deal with the question whether some facet of the "common general factor" which the studies of Professor Spearman and his associates have done so much to reveal in psychological performances, is not illuminated by the ostensibly physiological tests of Colonel Flack. Their practical importance gains rather than loses by the discovery that what is tested is not simple, although that discovery indicates that the performance of the test is not a *terminus ad quem*, but a *terminus ab quo*, further investigation must start. Critics who have imperfectly studied the subject make play with the notion of a mechanical method of determining fitness. Such an idea has never been entertained by those who understand the tests and their practical application. What has been claimed is that the method achieves the object of a preliminary sorting, a valuable result enough in the hurry of war conditions, still more valuable perhaps when the comparative leisure of peace time will be ample to allow of detailed clinical investigation in suitable cases, but not nearly sufficient to permit of all subjects being examined meticulously. These conclusions have been reached through a study of Air Force material, but, as Colonel Flack and other speakers urged, their applicability is much wider. We seem to be on the threshold of a general inquisition into the physical efficiency of the nation, or at least of that great subdivision engaged in industrial pursuits. If this comes about it will mean the employment of numerous investigators, not all of whom can be gifted

with scientific imagination, or possess great technical skill. It is not, however, too much to hope that quite ordinary persons armed with a simple technique may be able to make a classification of types which will be of much value, and provide a suitable starting point for finer work.

CEREBRO-SPINAL FEVER IN HONG KONG.

THE report of an investigation into an epidemic of cerebro-spinal fever in Hong Kong, undertaken at the request of the Colonial Government by Lieutenant P. K. Olitsky¹ of the Rockefeller Institute, is interesting, especially in connexion with some of the problems of the disease under consideration in this country. Up to June 1st there were during 1918 in Hong Kong 1,041 reported cases, almost all in natives, with a computed mortality, for the first 1,000 cases, of 76 per cent.; but as many cases escaped detection, the real mortality was lower. From the records of 417 cases in the Tung Wah Hospital it appears that the age incidence varied between four months and 59 years, the average being 22.7 years, and that males were attacked rather more than twice as often as females. In a chart of the first 750 cases, collected by Dr. Gale, the Medical Officer of Health, the peaks of the curve of incidence are from infancy to 5 years of age and at 17½ years, the latter especially for males, so that the susceptible elements of the population were clearly children and young adult males. The epidemic was preceded by an outbreak of influenza and sore throat of no great severity. Examination of the meteorological records shows that a sudden fall of temperature was followed in about four days by a great increase in the number of cases reported, thus agreeing with the general opinion, as emphasized by Sophian and Dopfer; it shows also that with a rising temperature there was usually a diminution in the epidemic. Deficiency in sunlight was followed by an outburst of the disease, but there was no evidence that humidity or rainfall by themselves had any bearing on the number of cases. These conclusions do not agree with the results obtained from investigation of an outbreak near Dorchester by Compton,² who found that the conditions favouring invasion of the blood stream by meningococci were a high degree of saturation of the atmosphere with moisture and very little variation in the daily temperature with a fall in the barometric pressure, rain, and lack of sunshine. According to Olitsky cold increases the incidence of the disease by exaggerating overcrowding among an already dense population, who then abandon sleeping in the streets and literally swarm in the cubicles of the Hong Kong houses; he is in agreement with Captain J. A. Glover³ as to the paramount importance of overcrowding, and points out that, although it was rare for more than one member of a family to be attacked, the cases occurred in the overcrowded areas of Hong Kong. Certain Chinese habits—promiscuous expectoration, the use of common drinking vessels and roller towels, and the failure to cleanse the plates between their use by customers in eating-houses—also favour the spread of disease. Bacteriologically 95 per cent. of the patients examined were infected with Gordon's Type I, and the serums available in the colony, with the possible exception of one, were deficient in antibodies. Among 71 patients treated with these serums the mortality was 45 per cent., and among 104 patients treated neither with lumbar puncture nor serum the mortality was as high as 84.6 per cent. As blood cultures were positive in 4 out of 10 moribund patients, the intravenous as well as the intrathecal injection of serum is advocated. The recommendations for prophylaxis include education of the Chinese, the prevention of overcrowding, the detection and treatment of contact carriers, including the isolation of those carriers who harbour numerous meningococci (especially those of the same type as the patient's), the

discharge of patients and carriers after three examinations of throat swabs at five-day intervals have been negative, and, although it is still in an experimental stage, the use of preventive inoculations of antimeningococcic vaccine.

IMMANUEL KANT ON INFLUENZA.

ALTHOUGH the term influenza was not formally adopted by the Royal College of Physicians of London till 1782, the disease was known to Hippocrates and other ancient physicians, and a formidable list of epidemics in various parts of the world between the years 1173 and 1875 is given by Hirsch in his *Handbook of Geographical and Historical Pathology*. Records of outbreaks in this country between 1510 and 1837 were collected by Theophilus Thompson and published by the Sydenham Society in 1852; they were brought down to 1891 by E. Symes Thompson. Many physicians, among them such men as Sydenham (1675), Huxham of Plymouth (1729), Arbuthnot (1732), Sir George Baker (1762), and John Fothergill (1775) had written about the disease from the clinical point of view, but Immanuel Kant, who, like Bacon, took all learning for his province and was specially interested in medicine, was one of the first to direct attention to its epidemiology. Towards the end of the eighteenth century influenza swept over nearly the whole world. It reached Siberia and Russia, China and India, in the autumn of 1781, and in the following December and February it invaded successively Finland, Germany, Denmark, Sweden, England, Scotland, the Netherlands, France, Italy, and Spain. Kant, in a "Notice to Physicians" published in the lay press of Königsberg on April 18th, 1782, considered the disease in its relation to physical geography. He expressed the opinion that it was spread not only by atmospheric conditions but by infection conveyed by insects. The paths of communication between Europe and other parts of the world by sea and by caravan were, he thought, the means of conveyance of many diseases, and he found reason to believe that the Russian trade route to China by land had brought several kinds of harmful insects from the farthest East. The epidemic of 1781-82 spread along the Baltic coast till it reached Königsberg; thence it travelled to Danzig and Prussia. Kant's interest in influenza is shown by the frequency with which he refers to the subject. With the object of procuring further information he sent his "notice" to Russia, and from Baron von Asch, surgeon in the Russian army, he learnt that in January, February, and March, 1782, a disease described as "febris catarrhalis epidemica benigna" prevailed in the Russian capital. It originated in Eastern Siberia, on the Chinese frontier, and spread through the whole of Russia.

POST-GRADUATE COURSES IN LONDON.

A MEETING, held on January 9th at the house of the Royal Society of Medicine, to promote the objects of the Inter-Allied Fellowship of Medicine, was informed that the proposal to establish immediately in London a course for medical graduates had been well received by the staffs of the medical schools, and that it was hoped that through the co-operation of the several schools it would be possible to institute at an early date a course lasting three months. Major-General Foster, C.B., Director-General Canadian Army Medical Services, and the representatives of other Dominion medical corps, expressed cordial approval of the suggestion, which, they said, would meet the desires of many medical officers of their services now in England or about to visit this country on their return from service in France. It was explained that these officers would be prepared, and would, in fact, prefer to pay a fee for the course. We hoped to be in a position to publish details in this issue of the JOURNAL, but we understand that arrangements are not yet sufficiently advanced to permit this to be done.

¹ Laid before the Legislative Council by command of His Excellency the Officer Administering the Government, October 17th, 1918. Hong Kong; 24 pages.

² A. Compton, *Ann. de l'Inst. Pasteur*, Paris, 1918, xxxii, 111.

³ J. A. Glover, *British Medical Journal*, 1918, ii, 509.

PENSIONS FOR MOTHERS.

Among the many schemes that are on foot for the future betterment of the community there are few that present more difficulty than that which is to provide for the encouragement of motherhood, and for its partial endowment especially in the case of widows. A very interesting report¹ has lately been presented to the Local Government Board by the head of its intelligence department, giving a detailed account of the rise and progress of this movement in the United States, to which we have already referred in our issue of May 26th, 1917, p. 692. During the last ten years the subject has been widely discussed, and from the vast amount of literature published certain deductions can be made. The broad principle has been generally accepted throughout the States, and in very many it has been translated into action, but without any uniformity of method. Starting with the axiom that it is better that children should be brought up by their own parents than in institutions, the plan gradually took the form of boarding children at home instead of boarding them "out." Thence followed a system of regular pensions to the mothers, granted only after careful inquiry, and not as a right to all. During the year 1917 such pensions were being paid in thirty-five out of forty-eight States. The actual amounts have varied very considerably, but in every case a maximum has been fixed, and the recipients, mostly widows, have been required to submit to continued inspection and supervision. This work has involved the formation of an army of trained inspectors as "visitors," and these have had to be adequately paid, so that the cost of administration would appear to have reached, if it has not overpassed, the total amount given in relief. Without such skilled supervision, however, it was found that illegal practices were apt to creep in, and hence curtailment of working expenses proved to be a false economy in the long run. Many carefully considered arguments have been urged for and against some of the systems of inquiry and distribution. In practice it would seem that the pensions are chiefly allotted to widows or to wives whose husbands are in some way incapacitated from supporting them, and it is generally made clear that, although selection is made of the most deserving, the pension, when granted, is not to be regarded as a charitable dole. Alternative schemes have been put forward whereby selection might be eliminated and a system of general insurance substituted for it, and it is evident that the experience thus far gained is by no means universally convincing. The report is full, and deserves careful study on the part of every one who may be contemplating local or central legislation on the subject.

SIR CHARLES WYNNDHAM.

SIR CHARLES WYNNDHAM, who died on January 12th in his 82nd year, is a striking example of a man who turned at an early age from medicine to attain conspicuous success in another calling. He was the most accomplished British actor in the comedy of society of his time, and delighted more than one generation by his grace of mind and carriage, his lightness of touch, his elegance of diction and his sure grasp of the essentials of a character. His intellectual capacity would have won him distinction in any profession. His versatility and knowledge of men and the world owed something to the circumstances of his education, in Scotland, in Germany, and in London. He was born in Liverpool; the son of a medical practitioner named Culverwell, who during his son's boyhood practised in London. Charles Culverwell was from the first enamoured of the stage, but the father's influence kept him to his medical studies at King's College sufficiently closely to ensure his passing the examination for the Membership of the Royal College of Surgeons of England in 1857. In 1858 he obtained the College Licence in Midwifery. He

appears to have attended the School of the Royal College of Surgeons in Ireland and the School of Anatomy in Dublin. In the *Medical Directory* for 1860 he appeared as M.R.C.S. 1857, L.M. and L.S.A. 1858, and M.D. Giessen (exam.) 1859. A motive that may have stimulated his keenness to obtain a medical diploma was an ardent desire to serve in the American civil war. He went to America, and after several disappointments was appointed surgeon in the Federal army. He was present at the battles of Chancellorsville, Fredericksburg, and Gettysburg, and served through the Red River campaign under General Banks. He had always had a strong inclination for the stage and found opportunities during the winters of the war to play in New York as "Charles Wyndham," under which name he was to become so widely known. He returned to England in 1865 and gradually won for himself a leading place on the comedy stage. He went to America in 1869 with a repertory including *The School for Scandal*, in which he gave an inimitable presentation of Charles Surface. He first established himself as an actor-manager in London in 1875, and his shrewd judgement and accomplished business management made him one of the most successful managers of his day. He gave up management in 1910, and gradually retired from the stage; during the last few years he had been in declining health. When in 1902 King Edward conferred upon him the honour of knighthood, it was felt to be a due recognition of a position attained by a combination of genius and hard work.

THE STATISTICAL STUDY OF INFLUENZA.

We have been favoured with a copy of the report of a strong committee of the American Public Health Association upon the measures requisite to secure adequate tabulation and analysis of the data furnished by the influenza epidemic. The committee contemplates a complete survey of the data of the States in which registration statistics are available, and its recommendations as to the particulars which should be tabulated and the kind of analysis needed well deserve the attention of official vital statisticians in this country. We have no doubt, indeed, that similar action is contemplated here, although difficulties in securing the requisite staff are greater than in the United States. The committee also resolved to secure the co-operation of the naval and military authorities—a very desirable step. We understand that in England the medical research department of the Royal Air Force is already engaged in formulating a method of utilizing the sickness returns of the force to elucidate the epidemiology of both summer and autumn outbreaks; owing to the wide distribution of Air Force stations these data will be of particular value.

THE INFLUENZA EPIDEMIC IN INDIA.

THE *Times of India* of October 26th, 1918, contains a report of an interesting speech by Dr. Turner, Health Officer of the Bombay Municipality, on the ravages of influenza. From June 1st to 15th the daily mortality of the city was normal, 80 to 90; it suddenly began to increase on June 19th, reaching 230 on July 3rd; it declined to normal about July 22nd. The secondary rise began on September 12th, the mortality exceeded 730 on October 2nd; it began to decline on October 8th, and had fallen to 184 by October 22nd. The incidence rate in the summer epidemic was about 25 per cent. on Europeans and 33 per cent. on Indians employed in offices, mills, etc., but it was much lower upon the outdoor labour staff of the Health Department, being well below 10 per cent. Returns were obtained from employers of labour relating to a population of 100,000 in the first epidemic. The sickness rate was 29 per cent.; of these cases 1,640 died. The excess mortality for five weeks of the second epidemic was 13,277. Bombay was not so severely attacked as some other cities. Poona registered 210 deaths on September 30th, which would have been equivalent to 1,830 in Bombay where 768 deaths were actually recorded. In Nagpur for the week

¹ Mothers' Pensions in the U.S.A. Local Government Board, 1918. H.M. Stationery Office. Through any bookseller, 2d.

ending October 14th the mortality-rate (reduced to an annual rate per mille) was 430.8, the worst week in Bombay similarly expressed showing 257.17. From a more recent issue of our contemporary we gather that by the first week of December the Bombay mortality-rate had fallen to the normal level, the total deaths for that week amounting to 590, an annual rate per mille of 31.32.

THE Hunterian Oration will be delivered before the Royal College of Surgeons of England at 4 p.m. on February 14th by Major-General Sir Anthony A. Bowlby, K.C.M.G., K.C.V.O., C.B., A.M.S.

THE French Académie des Sciences has elected Major-General Sir David Bruce, K.C.B., F.R.S., to be a foreign correspondent in the Section of Medicine and Surgery. The election was made at the first scrutiny, when Sir David Bruce received 26 out of 32 votes.

HAVING completed twenty years' service on the full staff of St. George's Hospital, Sir Humphry Rolleston, K.C.B., has, according to the regulations, ceased to be physician. Instead of automatically becoming consulting physician, which up to the present time has been the unbroken rule, the house committee of the hospital, on the recommendation of his colleagues, has appointed him Emeritus Physician for his lifetime, with the privilege of using cases in the wards for clinical teaching.

A SPECIAL CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

London, April, 1919.

THE customary annual meeting of the British Medical Association for the discussion of clinical and scientific subjects has not been held during the last four years. The war began immediately after the annual general meeting at Aberdeen in July, 1914; it had been arranged that the meeting in the following year should take place in Cambridge under the presidency of Sir Clifford Allbutt, Regius Professor of Physic in the University. The immense strain upon the medical profession produced by the war rendered it inadvisable to attempt to hold an annual meeting in 1915, and the University of Cambridge was so denuded of staff and accommodation that it would have been unable to maintain the invitation, even if it had been considered wise to hold a meeting at all. The question of when the next annual general meeting should be held has been under consideration since the suspension of hostilities, but Sir Clifford Allbutt has been compelled to say that Cambridge would not be able to arrange for a meeting to be held there this summer, as it would be hopeless to expect university work to be in going order so soon. He was, however, able to add that Cambridge looked forward to entertaining the Association in 1920. In these circumstances the suggestion arose that a special meeting might be arranged by the Association this year for the discussion of clinical and scientific subjects, but on a smaller scale as to sections than at a fully organized annual meeting.

This suggestion was cordially approved by the President, and at a meeting at the house of the Association on January 14th he was able to lay the proposition before the Director-General of the Army Medical Service and representatives of the Medical Service R.N., of the Air Force Medical Service, of the Medical Services of Dominion Forces, and of the United States. With Sir Clifford Allbutt at this meeting were the Chairman of Council, the Chairman of the Representative Meeting, and the Treasurer. Sir Clifford Allbutt, in opening the proceedings, said that the British Medical Association, in common with other scientific bodies, felt that the time had come to relay old tracks and make plans for reconstruction, but he added that for the reasons already mentioned

it had not been considered advisable to hold a full-dress meeting this year. The suggestion that a short scientific meeting should be held this year in London, without any attempt at a large organization or elaborate entertainments, had much to commend it. The idea was that the opportunity should be taken to set forth the work done during the war, and that every effort should be made to secure the presence of the leaders of medical and scientific work in the forces before they returned to civilian duties in different parts of the world.

Dr. J. A. Macdonald, Chairman of Council, said that the main object of such a meeting would be to bring together British workers at home and from the Dominions and medical visitors from the United States, to garner the knowledge and ideas from those who during recent troubled years had studied war medicine and surgery from many points of view. The independent criticisms of overseas workers would be particularly helpful and stimulating. The object of the meeting was to obtain the views of those best acquainted with the circumstances as to the feasibility of holding such a meeting, and as to the most appropriate date.

Lieut.-General Sir John Goodwin, K.C.B., D.G. A.M.S., expressed the opinion that it was most desirable that such a congress should be held. A great amount of scientific work of the highest value had been done during the war, and the results obtained were now being analysed. It would be an immense advantage for the cards to be put on the table, so that what had been done could be examined by all. In this way knowledge would be furthered, and the water-tight compartments between individual workers and groups of workers might be broken down. He undertook that all possible facilities should be given to assemble research workers from the forces overseas. It was reported that a letter had been received from Lieut.-General Sir C. H. Burtchell, K.C.B., D.G.M.S., France, stating that the proposal had his entire sympathy, and that he would be glad to co-operate in any way which might be in his power.

Colonel A. M. Whaley, United States liaison medical officer with the War Office, welcomed the idea most heartily on behalf of the American medical officers serving in Europe. Surgeon Commander D. W. Hewitt, C.M.G., A.D.G. R.N., said that Sir William Norman, the Medical Director-General, R.N., was much interested in the proposal, and desired to promote it in every way; and Colonel C. T. M. de Crespigny, D.S.O., A.A.M.C., Colonel R. D. Rudolph, C.A.M.C., and Lieut.-Colonel Bernard Myers, N.Z.A.M.C., spoke on behalf of the Australian, Canadian, and New Zealand Army Medical Services, in support of the project, which, they said, would strongly appeal to Dominion medical officers. All were agreed that such a meeting would be of the utmost value in crystallizing the knowledge gained during the war. In view of the approaching departure of many medical officers, the opinion was expressed that the meeting should be held as soon as possible.

Colonel J. G. Adami, C.A.M.C., agreed with Sir Clifford Allbutt that the main feature of the meeting might well consist of general reviews of the work done and its results, followed by discussions. Lieut.-Colonel T. D. Barry, R.A.F., who represented the Medical Administrator of the Royal Air Force, supported the opinion that the meeting should take place early, on the ground that the workers were now full of their subjects, and their experience was still fresh in their minds.

It was provisionally agreed that the meeting should be held early in April, and should last two or three days. A General Committee was appointed, together with two subcommittees, one to make general arrangements and the other to draft a programme of scientific work. Letters approving the proposal have been received from Sir William Osler, Regius Professor of Medicine, Oxford, and Major-General Sir Robert Jones, C.B., Inspector of Special Military Surgery.

THE WAR.

THE HARVARD SURGICAL UNIT, 1915-19.

The Harvard Surgical Unit, whose active work in France has just been brought to a close, may be said to have had its origin in a conversation between Sir William Osler and Mr. Robert Bacon, formerly U.S. Ambassador to France, which took place in December, 1914. The original unit, under the leadership of Dr. Edward H. Nickols, was organized in the medical school of Harvard University, and arrived in France early in July, 1915; soon afterwards, by arrangement with the British Army medical authorities, it took over No. 22 General Hospital at Camiers, one of the large base hospitals which had been erected in the Etaples area. It was originally intended that the work should be carried on after the first three months by relays of surgeons from one or two other American universities, but owing to unforeseen circumstances this idea was given up, and Harvard alone continued to be responsible. The unit was organized on the pattern of a base hospital in the British regular service. The officers did not receive commissions, but relative rank was given according to the duties they were to perform.

In November, 1915, on the arrival of the second party of surgeons from Harvard, the hospital moved into winter quarters at Wimereux, but early next year it was back again at Camiers, near its former site, between the railway and the foot-hills, where it remained until the end. An interesting account of the experiences during this period was given by Dr. David Cheever, at that time the chief surgeon, in a chapter of *The Harvard Volunteers in Europe*,¹ in which there are many references to the cordial co-operation and good feeling between the British medical service and the members of the unit. Dr. Cheever's successors were Dr. W. E. Faulkner, Dr. Hugh Cabot, and Dr. Daniel F. Jones.

During the battle of the Somme in 1916 the unit for the first time got really busy. Up to the end of that year its position was that of a neutral medical unit under the terms of the Geneva Convention, the administrative officers and the "other ranks" alone being drawn from the R.A.M.C. In December considerable changes were made. The President and Corporation of Harvard University resolved to continue the unit for the period of the war, and requested the British military authorities to notify it as a belligerent medical unit. Temporary honorary commissions in the R.A.M.C. were given to officers enlisting for the duration of the emergency. In this way the unit was put on a more stable basis and its position was regularized. The entry of the United States into the war in April, 1917, had a somewhat unsettling effect on the status and personnel of the hospital, but within a few months the staff had settled down again as a harmonious party of Americans, Canadians, and British, with Lieut.-Colonel Cabot as Commanding Officer. During that year the hospital got through a tremendous amount of hard work. Its full nominal capacity was 2,370 beds, but the patients at one time numbered as many as 4,000. Besides their work at the base the members of the medical staff were given many opportunities for gaining experience and lending valuable aid in other parts of the war area. Almost every officer went up the line—some went in surgical teams, others in medical "chest" teams, and there was scarcely ever a time when members of the staff were not scattered over France serving temporarily in one or other kind of medical unit of the British army.

In the winter of 1917-18 a great many hernia operations were done, under local anaesthesia, in order to render soldiers fit for general service. From August, 1918, onwards a large amount of experience was gained in the practice of delayed primary suture of wounds at the base, more especially in cases of compound fractures of the arm and hand. Notes were kept of the first thousand patients thus treated by primary suture more than forty-eight hours after being wounded, and material was obtained for comparative analysis of the results. More than 85 per cent. of the cases healed by first intention. Colonel Cabot and his staff were among the first to obtain sanction for the routine employment of women anaesthetists. Nursing

sisters were selected for courses of instruction in anaesthesia, and for the last two years all the anaesthetics of the hospital were administered by women. Members of the staff had a considerable share also in effecting the introduction of blood transfusion as a working method of resuscitation.

When the end of hostilities came into sight steps were taken to disband the Harvard Unit early. On January 8th the entire medical and nursing staff left Camiers, and crossed to England on their way home to America. It is one of the coincidences of war that the unit first took over No. 22 General Hospital on July 16th, 1915, and that the official date of demobilization should be January 16th, 1919—precisely three and a half years afterwards. During the past week Colonel Cabot, with his 21 medical officers and 108 nursing sisters, have been in London, and the occasion was taken to entertain them at a dinner given on January 15th, at the Connaught Rooms, by the Inter-Allied Fellowship of Medicine, in recognition of the splendid work they have performed. Beyond the practical aid given to some 175,000 British sick and wounded, the Harvard Surgical Unit has contributed in no small measure towards that Anglo-American unity upon which we believe the happiness of the world will in large measure depend. We therefore share the hope expressed by Colonel Cabot that the Harvard unit will not disappear now that its working days are over but that it will survive in some permanent form as a landmark in the progress of the English-speaking fellowship of medicine.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

CAPTAIN J. BURKE, R.A.M.C.(S.R.).

Captain John Burke, R.A.M.C.(S.R.), died of typhus at Baghdad on December 21st. He was the son of the late Mr. Edward Burke of Crewe, was educated at the London Hospital, took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1917, and entered the Special Reserve of the R.A.M.C. in the same year, being promoted to captain on April 17th, 1918.

CAPTAIN W. F. LUTON, C.A.M.C.

Captain W. F. Luton, Canadian Army Medical Corps, was reported as having died on service, in the casualty list published on January 6th.

CAPTAIN J. S. MARTIN, R.A.M.C.

Captain J. S. Martin, R.A.M.C., was reported as having died on service, in the casualty list published on January 4th.

CAPTAIN J. J. SINCLAIR, R.A.M.C.

Captain J. Johnston Sinclair, R.A.M.C., died on November 14th after an operation. He graduated M.B., Ch.B. Glasg. in 1909, and subsequently took the D.P.H.Camb. He held resident posts at the Victoria Infirmary, Belvidere Hospital, and Gartnavel Asylum, Glasgow. He also served for a time in Yardley Road Sanatorium, Birmingham, and later was assistant medical officer of health at Southport. He joined the R.A.M.C. with a temporary commission on December 16th, 1914, and with the exception of a few months at the start was in France continuously.

DR. I. W. JOYNT.

Dr. Ivor William Joynt, resident civil surgeon of the 3rd London General Hospital, Wandsworth, died in that hospital on December 30th. He was the only surviving son of Lieut.-Colonel H. W. Joynt, R.A.M.C.(ret.), of Bournemouth, and was educated at St. Bartholomew's Hospital, and at Cambridge, where he graduated B.C. in 1913. After acting as clinical assistant in the West End Hospital for Nervous Diseases, and as second house-surgeon in the Royal London Ophthalmic Hospital, he took up the post in the 3rd London General Hospital which he held at the time of his death.

DR. D. K. PARKES.

Dr. Douglas Kenneth Parkes, late Captain R.A.M.C., died at Knockaloe prisoners of war camp, Isle of Man, on January 3rd. He was educated at Liverpool University,

¹ BRITISH MEDICAL JOURNAL, May 12th, 1917, p. 623.

where he graduated M.B. and Ch.B. in 1914, and had served in Egypt, Gallipoli, Salonica, and Mesopotamia, in the R.A.M.C., from which he retired last July, on appointment to the Knockaloe camp.

Wounded.

Captain G. A. Khan, I.M.S. (temporary).
Lieutenant A. J. Abreu, I.M.S. (temporary).

Repatricated.

Major A. M. Wood, R.A.M.C. (temporary).
Captain W. M. Christie, R.A.M.C. (temporary).
Captain A. G. Clark, M.C., R.A.M.C. (temporary).
Captain S. A. Forbes, R.A.M.C. (temporary).
Captain C. G. Gibson, R.A.M.C. (temporary).
Captain J. A. Gillilan, R.A.M.C. (temporary).
Captain D. M. Smith, R.A.M.C. (temporary).
Captain D. F. Torrens, R.A.M.C. (T.F.).
Lieutenant A. S. Findlay, R.A.M.C. (temporary).

HONOURS.

THE following awards are announced to medical officers in recognition of their conspicuous gallantry and devotion to duty in the field:

Bar to D.S.O.

Lieut.-Colonel Anson Scott Donaldson, D.S.O., 3rd Field Ambulance, C.A.M.C.

This officer was in charge of the evacuation of the forward area and showed great initiative in establishing dressing stations and collecting posts directly in rear of the advancing infantry. He kept in touch with the battalion and succeeded in evacuating the casualties almost as soon as they occurred, in spite of heavy machine-gun and shell fire. (D.S.O. gazetted June 3rd, 1918.)

Lieut.-Colonel Thomas Joseph Francis Murphy, D.S.O., 6th Field Ambulance, C.A.M.C.

During an attack there were several wounded cases whose evacuation was being held up by the intense enemy barrage. This officer then brought up two motor ambulances, which he left some distance in rear, and came up with his runner to the village and searched for the regimental aid post, which he found after much difficulty, all the time exposed to heavy fire himself, as he passed several times through the enemy barrage and machine-gun fire. It was through his utter disregard of personal danger that the wounded were safely cleared and many lives saved. (D.S.O. gazetted January 1st, 1918.)

D.S.O.

Major John Charles Campbell, 7th Field Ambulance, A.A.M.C.

This officer was in charge of stretcher-bearers, evacuating all wounded from the right sector of the advance throughout five days' fighting. He kept close behind the infantry and kept in touch with the various medical officers under constant heavy fire. One night a direct hit completely demolished his aid post, but he got his men to a place of safety and continued the evacuation of the wounded. He superintended the work for five days continuously with great courage and persistence, setting a fine example to all under him.

Captain (acting Lieut.-Colonel) Thomas Henry Scott, M.C., 14th Field Ambulance, R.A.M.C.

When the vicinity of his advanced dressing station was being heavily shelled, it was due to his coolness and able management that a number of stretcher and walking cases were evacuated quickly and smoothly. His foresight and organization were mainly responsible for the very large numbers of officers and men successfully evacuated during this period under most difficult conditions.

Captain (temporary Major) William Duncan Sturrock, R.A.M.C. (T.F.), (Salonica.)

When the main surgical ward and operating tent of a field ambulance were wrecked by shell fire, one officer and two other ranks being wounded, he very quickly put matters right, and, owing to the excellent arrangements made by him throughout the operations, the wounded, in spite of difficult country and lack of roads, were very rapidly collected and evacuated.

Major (acting Lieut.-Colonel) George Grant Tabuteau, No. 1 Field Ambulance R.A.M.C.

In supervising the evacuation of casualties during three days' operations under heavy shell fire, he maintained a chain of medical posts in close touch with the battalions of his brigade, and the rapid removal of the wounded was due to his coolness and untiring energy, which inspired his officers and men with confidence.

Second Bar to Military Cross.

Temporary Captain (acting Major) John Samuel Levis, M.C., 51st Field Ambulance, R.A.M.C.

During an attack, when the regimental aid posts were under direct enemy observation, this officer, approaching them over ground swept by machine-gun fire, made arrangements for the wounded to be evacuated by a safer route. He was indefatigable in the day in keeping touch with the aid posts as they moved forward, and during the night took stretcher-bearers up to the front line to search for wounded. (M.C. gazetted January 26th, 1917; bar gazetted July 26th, 1918.)

Captain (acting Major) Campbell McNeil McCormack, M.C., 15th Field Ambulance, R.A.M.C.

During various attacks this officer supervised the collecting of wounded over a large part of the divisional front. He closely followed the advancing troops with his stretcher-bearers, evacuating the wounded skilfully and speedily. On one occasion during a retirement he personally under heavy fire reconnoitred the ground where the wounded lay, and by his dispositions of the stretcher-bearers undoubtedly saved their lives and the lives of many of the wounded. (M.C. gazetted September 22nd, 1916; bar gazetted October 15th, 1918.)

Temporary Captain Charles Gordon Timmas, M.C., R.A.M.C., attached 7th Battalion Royal Fusiliers.

During a counter-attack this officer went forward from battalion head quarters and effected several rescues of seriously wounded men, conducting them personally to the lines. Throughout the week's fighting he worked night and day, and the manner in which he disposed of stretcher cases under heavy fire was admirable. (M.C. gazetted July 18th, 1917; bar gazetted July 26th, 1918.)

Bar to Military Cross.

Captain William James Dowling, M.C., R.A.M.C. (S.R.), temporarily attached to 142nd Field Ambulance.

He was in charge of stretcher-bearers during very heavy fighting lasting for two days, and repeatedly went forward to satisfy himself that the regimental aid posts were being kept clear. On many occasions he himself led forward stretcher squads under very heavy fire. He invariably displayed great gallantry, and afforded a magnificent example to all ranks working under him. (M.C. gazetted December 2nd, 1918.)

Captain (acting Major) John Cecil Alexander Dowse, M.C., R.A.M.C., attached Head Quarters 53rd Division.

This officer controlled the evacuation of wounded from the whole of the divisional front under artillery, machine-gun, and rifle fire, and their rapid and efficient evacuation was due to his untiring zeal and energy in maintaining constant communications between battalions and field ambulances. He set a splendid example to all ranks. (M.C. gazetted January 14th, 1916.)

Captain Hugh Hart, M.C., No. 5 Field Ambulance, C.A.M.C.

During an action this officer was in charge of the field ambulance stretcher-bearers. His work under very heavy machine-gun and sh. ll fire was characterized by thoroughness and a clear and concise idea of the situation at all times, which was due to his keeping in close touch with the rapidly advancing infantry. On this and other occasions he cleared all casualties with exceptional rapidity. His courage and tireless persistence were a source of inspiration to all under him. (M.C. gazetted July 18th, 1917.)

Lieutenant William Peat Hogg, M.C., I.M.S. (Mesopotamia.)

When his aid post was heavily shelled he collected all his casualties with great coolness and promptitude and conducted them to a new post. He has previously done similar fine work in action. (M.C. gazetted February 7th, 1918.)

Captain Joseph Regis Alberic Marin, M.C., C.A.M.C., attached 22nd Battalion Canadian Infantry, Quebec Regiment.

During three days' hard fighting he was indefatigable in his attention to the wounded, working often under heavy fire. He saved many lives by his skill and devotion to duty. When all the officers had become casualties, and he himself was wounded, he remained at duty and continued his good work. Later on he was severely gassed and had to be evacuated. The example of his self-sacrificing and gallant conduct had a great effect on the whole battalion. (M.C. gazetted January 11th, 1919. See p. 83.)

Temporary Surgeon Frank Pearce Pocock, D.S.O., M.C., R.N., attached Drake Battalion, R.N.V.R.

He attended to the wounded under very heavy fire and most adverse circumstances during operations lasting several days. His courage and self-sacrificing devotion to duty were a splendid example to his stretcher-bearers, and his skill was instrumental in saving the lives of many wounded men. (M.C. gazetted January 10th, 1917.)

Temporary Captain (acting Major) Maurice Aloysius Power, M.C., R.A.M.C., attached 14th Field Ambulance.

Whilst in charge of stretcher-bearers he attended to and collected wounded under heavy machine gun fire. He worked unceasingly directing stretcher-bearers, and evacuated several hundred wounded from the regimental aid posts in his sector. Although wounded (for the third time) he remained on duty and showed great endurance as on previous occasions. (M.C. gazetted January 18th, 1918.)

Captain (acting Major) Outhbert Scales, M.C., R.A.M.C., attached 150th Field Ambulance.

When in charge of stretcher-bearers he exposed himself continually, moving from place to place to collect the wounded under heavy machine-gun and rifle fire. Thanks to the close touch he kept with the battalions, several hundred wounded were quickly collected and evacuated. (M.C. gazetted July 26th, 1918.)

Captain (acting Major) Herbert William Wadge, M.C., No. 10 Field Ambulance, C.A.M.C.

This officer was in charge of the stretcher-bearers of the ambulance during five days' fighting. He worked continuously, directing the evacuation of the wounded in the forward area. Under his leadership the bearers worked strenuously, and the wounded were evacuated with great rapidity. Although considerably shaken by the explosion of a shell, he continued his work. (M.C. gazetted August 19th, 1916.)

Captain Thomas Walker, M.C., R.A.M.C. (S.R.), attached to 2/3rd London Field Ambulance.

He took a motor ambulance car to an advanced regimental aid post under very heavy shell fire and evacuated the wounded. Throughout the whole action he displayed great skill and disregard of danger in handling his bearers, and was night and day in the line, keeping touch with the regiments, under heavy shell fire. (M.C. gazetted November 4th, 1918.)

Temporary Captain Philip Haver Wells, M.C., R.A.M.C., attached 2nd Battalion Coldstream Guards.

When moving up to an aid post with the battalion head quarters a shell fell on the party, causing many casualties, including the only other officer. Captain Wells, showing complete disregard for personal safety, organized the party and attended to the wounded. Throughout the day he ceaselessly carried on his duties, and under most trying conditions, being exposed to heavy shell fire the whole time. In spite of the number of wounded, he managed to attend to all and arrange for their evacuation. (M.C. gazetted February 18th, 1918.)

Military Cross.

Captain Sidney George Baldwin, No. 9 Field Ambulance, C.A.M.C.

Under his direction the wounded were dressed and removed from the battlefield without any delay. He often led his bearers through machine-gun fire to reach wounded men, whom he successfully evacuated. All through the fighting he displayed great disregard of danger.

Lieutenant Bawa Harkishan Singh, I.M.S. (Mesopotamia.)

For conspicuous gallantry and devotion to duty and coolness under fire when in charge of the dressing station of the ambulance. The dressing station came under heavy fire at night, and the situation was critical for a time. He, however, collected the wounded and brought them in. He also showed great coolness and initiative when the ambulance was bombed by aeroplanes during and after the attack.

Temporary Surgeon David Leishman Baxter, R.N., attached 1st Battalion Royal Marines.

During an attack he early established an aid post well forward, and continued to move forward with the advance, showing utter disregard of personal danger when searching for wounded and having them dressed under heavy fire. He caused all wounded to be rapidly evacuated, and throughout set a very fine example to his staff.

Captain Neil Douglas Black, C.A.M.C., attached 25th Battalion Canadian Infantry, Nova Scotia Regiment.

With absolute indifference to the heavy shell fire, this officer advanced with the leading companies and attended to the wounded. The second afternoon of the attack he advanced beyond the line under intense enemy machine-gun fire and dressed the wounded of other battalions. His coolness and example were a source of inspiration to officers and men.

Captain Tillman Alfred Briggs, C.A.M.C., attached 116th Battalion Canadian Infantry, 2nd C. Ontario Regiment.

During an attack he rendered invaluable assistance to the wounded of this and other battalions. He attended to a number of casualties in the jumping-off position in spite of heavy machine-gun and artillery barrage. Most of his dressers became casualties, but he continued to dress the wounded. As soon as he had attended to those he pushed forward across the open and assisted those who had fallen. His services were most valuable, and his work of a very high order. He displayed remarkable coolness and energy under fire.

Captain Herman Maclean Cameron, No. 3 Field Ambulance, C.A.M.C.

This officer performed valuable work in establishing a new advanced dressing station to conform with the advancing line, under heavy machine-gun fire and artillery barrage, working continuously for twenty-four hours without rest.

Temporary Captain Frederick Orlando Clarke, R.A.M.C., attached 149th Field Ambulance.

He attended to and evacuated the wounded from the forward area under heavy rifle and machine-gun fire. He worked on until every case had been evacuated and set a splendid example of zeal and endurance to all ranks under him.

Temporary Captain Andrew Leslie Edmund Filmer Coleman, R.A.M.C., attached 2nd Battalion Scots Guards.

For conspicuous gallantry. He tended the wounded with tireless energy and devotion during operations. For two days and nights he never left his post, though subjected to continuous machine-gun fire and frequent bombardments of high explosives and gas. During this period a continuous stream of wounded poured in, both from his own and other units, and by his prompt attention and ceaseless hard work he undoubtedly saved the lives of many severely wounded cases.

Captain (acting Major) Frank Coleman, 6th London Field Ambulance, R.A.M.C.

He displayed conspicuous gallantry and devotion to duty at an advanced dressing station which was frequently under heavy shell fire and night bombing. He attended to and arranged for the evacuation of a very large number of wounded, and his skill and able organization were the means of saving several lives.

Temporary Captain Purser Davies, R.A.M.C., attached 6th (London) Field Ambulance, R.A.M.C.

He worked with little or no rest for sixty hours in the open under heavy fire dressing and evacuating the wounded. His conspicuous example of gallantry and self-sacrificing devotion to duty were an inspiration to the stretcher-bearers, whose services he organized with great ability. He saved many lives by his skill.

Temporary Captain Trevor G. Featherstonhaugh, R.A.M.C. (Mesopotamia.)

While attending to the wounded and withdrawing them to cover he had constantly to move across ground exposed to fire. It was due to his ability and coolness that casualties were evacuated so expeditiously, thus preventing any hampering of the critical operation in progress at the time.

Temporary Captain John Finnegan, R.A.M.C., attached 7th Battalion Lincolnshire Regiment.

At one time, when the battalion was held up lining a bank, he continued to move up and down what was actually the front line, under enfilade fire, attending to and evacuating wounded of his own battalion and also of other divisions. By his disregard of danger for himself he saved numerous lives of others.

Captain David Dawson Freeze, C.A.M.C., attached Royal Canadian Regiment.

In an attack he displayed great courage in dressing wounded under heavy shell and machine-gun fire. He followed close up with the battalion in the attack and, in the most exposed position, he continued to dress the wounded and organize carrying parties, so that all the battalion casualties were evacuated in very short time. After the objective had been reached he proceeded in advance under heavy machine-gun fire, and dressed the wounds of a large number of the enemy and evacuated them. Learning that a number of men of another division were lying in front of our line, having been wounded two days previously he proceeded under heavy fire, dressed their wounds, and supervised their evacuation. His devotion to duty throughout was admirable.

Temporary Captain Douglas Hugh Aird Galbraith, R.A.M.C. (Mesopotamia.)

He was wounded in the head whilst attending to a wounded officer, and, though in great pain, continued to carry out his duties for the remainder of the day with zeal and determination.

Captain Arthur Hines, C.A.M.C., attached 26th Battalion North Brunswick Regiment.

During an attack he went forward with the attacking waves, and on numerous occasions, in the open and in face of the heaviest shell and machine-gun fire, dressed the wounded. His utter disregard of danger was a constant source of inspiration to all ranks.

Temporary Captain Edwin Lancelot Hopkins, R.A.M.C. (Mesopotamia.)

For conspicuous gallantry and devotion to duty in dressing wounded under fire during a reconnaissance. He has on all occasions displayed great coolness and resource in carrying out his work.

Captain James Stewart Hudson, C.A.M.C., attached 1st Battalion Canadian Mounted Rifles.

He attended to the wounded under exceptionally heavy shell and machine-gun fire. He personally supervised the collection of wounded, and organized stretcher parties. His coolness and courageous conduct set a high example to all.

Captain Roy Bertram Jenkins, C.A.M.C., attached 24th Battalion Canadian Infantry, Quebec Regiment.

During two days' fighting this officer accompanied the troops and was tireless in attending to the wounded under heavy shell, gas, and machine-gun fire. As soon as the battalion had made good its line he established a rear aid post close up, where he received and evacuated wounded. Being exposed to fire himself, he arranged what cover was possible for the wounded and continued at work until he was sure that all had been cleared. He worked unceasingly, never thinking of himself.

Captain Alexander Johnstone, R.A.M.C. (Mesopotamia.)

He displayed the utmost energy and coolness in collecting, dressing, and evacuating the wounded under heavy fire. Through his untiring efforts 200 cases were disposed of in a very short time.

Temporary Captain James Gaymer Jones, R.A.M.C. (Mesopotamia.)

Although exposed to heavy and continuous shell fire throughout the day, he continued to dress the wounded in the gun line, thereby alleviating much suffering and saving many lives. His courage on all occasions has been most marked.

Temporary Lieutenant Ratenshaw Nariman Kapadia, I.M.S. (Mesopotamia.)

Exposed to heavy fire, he continued throughout the action to collect and dress the wounded, who were much scattered, thereby saving many lives.

Temporary Surgeon Charles Edward Leake, R.N., attached Hawke Battalion, R.N.D., R.N.V.R.

He was with the battalion during six days' incessant fighting, and displayed untiring devotion to duty, dressing the wounded under constant fire. His gallantry and coolness were a splendid example, and inspired the stretcher-bearers under his command to great efforts to evacuate all the wounded, which was accomplished with admirable care.

Temporary Captain Joseph Patrick McGreehin, R.A.M.C., attached 4th Battalion Royal Fusiliers.

While proceeding to assembly positions he was knocked over by a large piece of shell and badly shaken. Nevertheless he pushed on and established his observation post behind a bank. Unfortunately, unknown to him, it was in the vicinity of a water point, and was very accurately shelled all day and finally hit. In spite of this, he worked on with the greatest courage, dressing with care all the wounded, and in one case amputating a foot.

Captain Robert Dewar MacKenzie, C.A.M.C., attached 15th Battalion Canadian Infantry, 1st C. Ontario Regiment.

He dressed wounded under continuous shell fire, and kept moving his dressing station forward, so as to be able to attend to the more serious cases. He cleared the cases with the utmost dispatch, and many times during the day went up, under shell and machine-gun fire, to dress stretcher cases. His conduct throughout was deserving of high praise.

Captain Donald Campbell Malcolm, 8th Field Ambulance, C.A.M.C.

He was in charge of the bearer division in the left sector during the fighting. He showed great initiative and judgement at all times, keeping in close touch with the advancing troops, and clearing the wounded. He worked continuously for forty-eight hours searching for and attending the wounded in the open. On one occasion when the advance was delayed near a wood he led his stretcher squad across the open ground which was being swept by machine-gun fire and brought many wounded back to safety. He displayed the greatest coolness under fire and a perfect disregard for personal safety during the entire action.

Captain Joseph Regis Alberic Marin, C.A.M.C., attached 22nd Battalion Quebec Regiment.

During an attack he, through his prompt dressing of wounds under heavy shell and machine-gun fire, alleviated the sufferings of many wounded and saved the lives of some of the more seriously wounded. His fearless example had the best possible effect on the moral of the men. He worked with determination and cheerfulness for two days under very trying and dangerous conditions.

Temporary Captain (acting Major) Duncan Metcalfe Morison, 38th Field Ambulance, R.A.M.C.

When the infantry were ordered to attack at short notice he went forward through a heavy barrage and completed the necessary arrangements with the medical officer of the battalion for the evacuation of the wounded. His gallantry and devotion to duty ensured the wounded being rapidly cleared, and many lives were saved thereby.

Temporary Captain William Millerick, R.A.M.C., attached 10th Battalion Argyll and Sutherland Highlanders.

Heating that there were a number of severely wounded cases in a village, which could not be moved until properly dressed, this officer at once went forward, and carried out his duties under heavy fire of every description. He continued his work untiringly throughout the day, and by his skilful organization of dressing and carrying parties was undoubtedly responsible for saving many lives.

Temporary Captain Frederick Harold Moran, R.A.M.C., attached 15th Brigade, R.F.A.

Throughout the operations of an advance he maintained his aid post practically at the battery positions, and dressed wounded of many units under heavy shell fire. He more than once passed through heavy barrage to get at and attend to wounded. His zeal and disregard of personal safety were splendid.

Captain Duncan Arnold Morrison, 1st Field Ambulance, Canadian A.M.C.

He accompanied the advancing infantry to the final objective, and though wounded himself remained on duty, continuing to do excellent work during two days' operations, establishing an advanced dressing station as soon as the infantry passed through. He behaved splendidly.

Captain Robert Davies Moyle, 2nd Field Ambulance, C.A.M.C.

He followed the infantry into the open while it was still under machine-gun fire. Owing to the condition of the ground it was impossible to get transport up, but he organized bearer parties, collected all wounded into a place of safety, and succeeded in securing dressings, food, and water for them, saving many lives. He set an example to all ranks under him.

Lieutenant (temporary Captain) William Douglas Newland, 92nd Field Ambulance, R.A.M.C.

Under conditions of open warfare he collected a number of wounded for evacuation. The place came under very heavy shell fire, due to a number of tanks passing close to his post. With great courage and devotion, he remained with the wounded until he was able to clear them all, although the fire was so heavy that all troops had to leave the immediate neighbourhood.

Captain Frederick McGregor Petrie, Canadian A.M.C., attached 31st Battalion Alberta Regiment.

This officer displayed great courage, coolness and devotion to duty under heavy fire and in most trying conditions. He showed great executive ability in the evacuation of wounded, and, although the casualties were very heavy, at no time was there any congestion at the regimental aid post. By his skilful organization and untiring energy, many wounded were evacuated during the operation.

Temporary Lieutenant George Fitzpatrick Rigden, R.A.M.C., attached 16th Battalion Lancashire Fusiliers.

He established a first aid post well forward, and in spite of heavy machine-gun fire carried on his duties with admirable self-possession, several times going forward in face of intense fire to dress wounded lying in exposed positions. It was largely due to his unselfish devotion that some of the most serious cases received prompt attention. His courage throughout was most marked. Finally he was wounded.

Captain Lewis Wilson Shelly, R.A.M.C., attached No. 1 Aeroplane Supply Depot, R.A.F.

When this depot was heavily bombed in a night air raid he organized a dressing station at the Repair Park, attending the wounded in the open. Several bombs fell close to him, wounding those around him, but he stuck to his work and saved the lives of many by his coolness and courage.

Captain Charles Gordon Strachan, R.A.M.C. (T.F.). (Salonica.)

He worked for twenty-four consecutive hours across open ground which was constantly shelled. He rallied his bearers when somewhat exhausted and disorganized by heavy fire, and set them a very fine example of cheerfulness and complete disregard of personal danger. The successful evacuation of all wounded was largely due to his personal conduct.

Captain Roy Hindley Thomas, 1st Field Ambulance, C.A.M.C.

For superintending the evacuation of wounded when he went over the entire area, still under heavy fire, locating the wounded, and after dark succeeding in safely removing them all. His untiring devotion to duty, initiative in establishing collecting posts and organization of carrying parties, undoubtedly saved many lives.

The names of the following officers of the R.A.M.C. have been brought to the notice of the Secretary of State for War for devotion to duty and valuable services rendered by them when prisoners of war, during epidemics of cholera and typhus fever at the prisoners of war camps at Wittenberg, Germany: Majors W. B. Fry (since deceased), H. E. Priestley, C.M.G., and A. C. Vidal, D.S.O.; Captains S. Field and A. A. Sutcliffe (both since deceased); Lieutenant (temporary Captain, acting Major) J. La F. Lauder, D.S.O., M.C.

FOREIGN DECORATIONS.

The following medical officers are among the recipients of decorations and medals conferred by the President of the French Republic for distinguished services rendered during the course of the campaign.

Croix de Guerre.—Colonel George W. Barber, C.M.G., D.S.O., A.A.M.C.; Major Frederick L. Wall, M.C., 7th Field Ambulance, A.A.M.C.; Brevet Major Lancelot G. Bourdillon, D.S.O., M.C., R.A.M.C.; Captain (acting Lieut.-Colonel), George P. Taylor, D.S.O., M.C., R.A.M.C.; Captain (acting Major) Arthur P. Thomson, M.C., R.A.M.C. (T.F.); Captain Gilbert W. Rogers, M.C., R.A.M.C. (T.F.); temporary Captains (acting Majors): Daniel McKelvey, M.C., R.A.M.C.; Harold B. G. Russell, R.A.M.C.

Croix de Guerre avec Palme.—Colonel R. J. Blackham, C.M.G., C.I.E., D.S.O., A.M.S.

NOTES.

THE Elsie Inglis unit of the Scottish Women's Hospitals has once more gone forward, this time in the wake of the victorious Serbian army. The unit is within a few hundred miles of its Russian campaign with the Jugo Slavs in the Dobruja in 1916, but it has reached its present position coming from the Macedonian front via the Adriatic. The Serbians have placed a large building at the disposal of the unit at Sarajevo,

where there are large numbers of sick soldiers to be tended. The transport column attached to the unit followed the offensive of last autumn as far as cars could go, and did almost incredible work in conveying wounded from the front to the hospitals, up and down the mountainous roads.

Scotland.

CHAIR OF MENTAL DISEASES AT EDINBURGH.

A SCHEME has been drawn up by the Board of the Royal Edinburgh Asylum for the Insane (Morningside) for the establishment of a chair of mental diseases in the University of Edinburgh, including the offer of an endowment fund of £10,000 towards the salary of a professor. The Court of Edinburgh University at its last meeting gave approval to this scheme.

ENDOWMENT OF THREE PROFESSORSHIPS IN GLASGOW UNIVERSITY.

At the meeting of the Glasgow University Court on January 9th, Principal Sir Donald MacAlister was in the happy position of being able to announce that two well known shipowners of Glasgow, Mr. W. Guthrie Gardiner and Mr. F. C. Gardiner, desired to endow three chairs in the university—one in bacteriology, one in organic chemistry, and one in physiological chemistry. It was their intention to provide £20,000 for each chair, or £60,000 in all. The Court's grateful acceptance of the handsome gift followed as a matter of course, as did the acceptance of the proposal that the new professorships should be named the "Gardiner chairs"; in these feelings the much larger body of medical and public opinion will heartily join.

It is to be hoped that what has occurred in Glasgow may not be limited to Glasgow. National thanksgiving for the successful issue of the great war may, and will, take several forms; but the endowment of greatly needed professorships in the newer departments of medicine makes a very special appeal to the imagination as well as to practical common sense of the band of potential princely donors which has formed during the progress of hostilities. The immediate medical needs of the country, especially in regard to the wounded men coming back more or less permanently disabled, have been quickly and nobly met by public and private grants and gifts, but the Glasgow merchants have looked wisely to the requirements of the more distant future when a far more persistent enemy than even the Central Empires—we mean disease and death—will still withstand the progress of scientific medicine and defy her trained battalions.

The endowment of the Glasgow chairs is sufficient to produce, at 5 per cent., a sum of £1,000 a year for each; and if this sum be drawn upon to provide the salaries of both a professor and an assistant or associate professor neither of these officials will receive dangerously high emoluments. One must not forget what Goldsmith said of the risk of opulence in universities, in his *Enquiry into the Present State of Polite Learning in Europe* (1759). He was talking with Gaubius of Leyden, who complained that "all the English students who formerly came to him now went entirely to Edinburgh; and the fact surprised him more, as Leyden was now as well as ever furnished with masters excellent in their respective professions." Gaubius concluded by asking Goldsmith if the professors of Edinburgh were rich. "I replied," wrote Goldsmith, "that the salary of a professor there seldom amounted to more than thirty pounds a year. 'Poor men,' says he, 'I heartily wish they were better provided for; until they become rich, we can have no expectation of English students at Leyden.'" At the present value of money the rewards offered to university teachers in Britain are hardly such as to lead to inefficiency by opulence and so to cause the transference of students to the universities of the Continent. "Authors," said Goldsmith again, "like running horses, should be fed not fattened"; and for "authors" one may read "teachers." Now the occupants of our university chairs may run no very serious risk of being "fattened," but there is a real danger that the teachers of sub-professorial rank may fall short of being sufficiently "fed." There is a sphere for the munificence of our merchant princes in the provision of adequate salaries for the younger men in the universities who for the love of science

and the fascination of teaching have deliberately put aside more remunerative posts in general practice or in the services.

Further, the endowment of universities must not outstrip the necessary extending and equipping of hospitals. The flow of benefactions to general hospitals at the present time is diminished as a whole, although there are exceptions. Edinburgh Royal Infirmary received in legacies and donations during 1918 the large sum of £40,500. Some classes of hospitals, however, have not in the past had the happy knack of unloosing the purse strings of the wealthy donor. Maternity institutions, for instance, have not been fortunate, though on them depend not only an important part of the teaching of the undergraduate but also in no small measure the health and well-being of the population. Another department of medicine which ought to be considered favourably by the prospective donor is that of post-graduate teaching. If young graduates are to gain some at least of their special training in the British Isles aid must assuredly be given to the various bodies which are at present re-establishing the post-graduate work suspended when the war broke out, and not only of re-establishing but of extending and further developing it, making it suitable not only for the medical men who always require to be made acquainted with new methods and discoveries, but also for the men who were needed at the front as soon as they had graduated and who, consequently, were unable to avail themselves of the various posts in hospitals and other institutions at home usually held by them in normal times. It is gratifying to know that Government has it in mind that grants for the universities and other teaching bodies, including, it is to be hoped, post-graduate schools, are urgently needed; but in many directions there is room, and more than room, for the well-chosen benefactions of the merchant prince who has a love of science, an admiration of the healing art, and gratitude for the wonderful victory which has been vouchsafed to the nation's arms.

England and Wales.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on December 19th, Sir Francis Champneys presiding. One midwife was struck off the roll on a number of charges of general breaches of the rules. Judgement was adjourned for reports in three and six months in another case, and in one case, as to which a final report had been received, a further period of probation was granted. In this case a patient of the midwife had died from septic poisoning following an illegal operation performed to procure abortion; the midwife's solicitor was of opinion that the engagement of the midwife had been merely a "blind" to cover the whole proceedings. An application for restoration to the roll was granted.

Draft rules were approved for submission to the Privy Council relating to:

1. The regulation of the payment of expenses incurred by members in respect of their attendance at meetings of the Board.
2. The conditions under which midwives may be suspended from practice in penal cases by (a) the Board, (b) the local supervising authority.
3. The rules requiring a midwife to notify the local supervising authority when she has advised artificial feeding.

The secretary, in his report on the recent examination, stated that a much higher percentage of the candidates had signified their intention to practise.

RABIES IN THE WEST OF ENGLAND.

The provisions made by the medical department of the Local Government Board for the administration of specific antirabic treatment at Plymouth were announced in last week's JOURNAL (p. 54). According to a statement made on January 14th at the Ottery Petty Sessions by an inspector of the Board of Agriculture, the situation is regarded as extremely serious by the authorities. More than 100 cases of rabies in animals have been confirmed in Devon and Cornwall during the present outbreak, and many suspected cases are under observation. Twenty-five persons have been bitten by rabid animals but no case of hydrophobia has been reported as yet. Arrangements

have been made by the Local Government Board, with the co-operation of the Board of Agriculture, to secure the early notification to medical officers of health of persons bitten by animals suspected of suffering from rabies, and for their prompt treatment with antirabic material from the Pasteur Institute, Paris, by Dr. Pethybridge, pathologist of the South Devon and East Cornwall Hospital.

Correspondence.

ENDURANCE IN AORTIC INSUFFICIENCY.

SIR,—In respect of the letters of Colonel Rudolf and Sir William Osler on this subject may I say that in many, perhaps in most of these cases, death comes—as in the majority of cases of angina pectoris—by accident. The potential of the state is not worked out. The accidents are of more than one kind, but the mode is the same—a prolonged diastole. The distinction between the endocarditic (rheumatic?) and syphilitic series is, as Sir William says, cardinal. In my book on *Diseases of the Arteries* I have shown how in the syphilitic series the lesion begins about 1 cm. above the valve, and may or may not move downwards—as well as upwards—so as to invade the valve and the coronary arteries. Such syphilitic cases often do run out their capacity, because this is as shallow as the affection of the myocardium is deep. Yet many even of these graver cases are ended by accident—just too long a duration of bulbar anaemia.

On the nature of such accidents—for example, a sudden effort, a startle, some half understood inhibition, as after a full meal, a pipe of stronger tobacco—I need not stay to make guesses; but I would point out that a frequent mode is by extrasystole. The practical hint is that to these patients extrasystoles are very perilous. When in such an one, from this cause or that, a tendency to extrasystole is set up, however unprogressive the lesion of the valve or the state of the myocardium, sudden death is apt to occur. If a case of this syncope could be caught "on the hop" restoration of life might be possible.

I may add two cases of long duration. An academic friend of mine used to come to me every six months to have the dimensions of his heart outlined, and his local and general condition reported on—this for twenty-five years. The state, so far as clinical diagnosis and his own experience were concerned, seemed static. The damage had been done in an effort in rowing. Ultimately he began to have extrasystoles occasionally, and we did our best to provide against these. However one day, while feeling quite well, after lunch he lay down on a sofa to read the paper, and died in an instant. He had been climbing hills in Cumberland a few weeks before. The second case of duration was in a big strong man who came under me at various dates in Addenbrooke's Hospital for aortic insufficiency and failing heart. He died with the usual symptoms of heart failure: dilatation, dropsy, dyspnoea, etc. He had suffered from rheumatic fever seventeen years before; on discharge from hospital he returned to his work as a coal porter—about as hard labour as is to be found in the market; yet without any break he had followed this laborious occupation for those seventeen years. The heart (at necropsy) was of course big and dilated.—I am, etc.,

Cambridge, Jan 13th.

CLIFFORD ALLBUTT.

EXCISION OF A CARTILAGE IN MILITARY SURGERY.

SIR,—I have read with great interest Mr. Hammond's article on the operation for the excision of a cartilage (BRITISH MEDICAL JOURNAL, December 28th, 1918, p. 715), in which he runs a tilt against the medical officers of command and regimental dépôts. Much of what he says in this connexion is doubtless true, but would be more convincing if he had had an opportunity of examining these cases before committing himself to the statement that "95 per cent of the cases operated upon should have been placed in Class A."

I have no experience of dépôt work at home, but, like many others, am by no means convinced of the invariable success of this operation, even in the most competent hands. Previous to the war I saw the results in seven

cases operated upon by surgeons of repute, and in but three of these was the result completely satisfactory, the complaint of undue fatigue, attacks of synovitis, and in one case recurrent locking, being made in the others; the results in four other cases, who were treated by massage and exercises, compared extremely favourably.

During my work as regimental medical officer and at a base hospital in France I had further opportunities of seeing such cases after operation, and from one unit alone in six months I had to admit four cases to hospital suffering from internal derangement after operation.

While offering this criticism of the operation, I am in complete agreement with all that Mr. Hammond says about not accepting subjective symptoms in the absence of physical signs, and that not only in the case of joint troubles, but the small number of active malingerers in the Western Command (51 out of 283 in three years) speaks a great deal not only for the moral of the army but also for the efficiency of the medical supervision.—I am, etc.,

GEORGE F. R. SMITH,
Captain R.A.M.C.(F.R.C.).

Liverpool, Dec. 29th, 1918.

SIR,—In your issue of December 28th, 1918, Mr. T. E. Hammond, F.R.C.S., asserts that with proper supervision 95 per cent. of cases of excision of the internal semilunar cartilage should have been placed in Class A. He also states that cases sent to command dépôts, after a short stay, should have been discharged as fit for general service.

This is rather a sweeping statement, and we should like through your columns to express our views based on the experience gained in the after-treatment of a large number of these cases. A certain proportion showed definite chronic synovitis with effusion after exercise; this effusion invariably disappeared after a few days' rest but equally invariably returned when slight exertion was renewed. It was manifestly impossible to mark these men Class A on account of the recurrent effusion. A certain proportion were admitted with the knee-joint apparently normal, with no swelling and full movement. After a few days' graduated exercise and a route march of a mile at their own pace the joint showed a marked effusion with pain. Exercise had to be discontinued. A number with apparently normal knee-joints on arrival after graduated exercise of the most light variety developed a definite acute synovitis and had to be admitted to hospital.

It is our experience that many of the cases operated upon for excision of the internal semilunar cartilage are not improved from the army point of view, though possibly perfectly fit for civilian life.

We consider that in the light of these experiences the strictures of Mr. Hammond on command dépôt treatment are hardly justified.—We are, etc.,

FRANK RADCLIFFE,
M.O. 1/c Treatment Depts.

A. W. T. WHITWORTH, Capt. R.A.M.C.,
Asst. M.O., Treatment Depts.

Command Dépôt,
Heaton Park, Manchester.

THE PAST AND FUTURE OF THE CRUSADE AGAINST TUBERCULOSIS.

SIR,—I fear Dr. Tottenham is speculating in a field of inquiry full of complexities, paradoxes, and mysteries, and an extract from a summary is dangerous ground for debate. Horace warns us against summaries:

Brevis esse laboro, obscurus fio.

Anaphylaxis is a technical term for widely different phenomena. The classical and familiar example of anaphylactic shock in a guinea pig is very different from the effects of a tuberculin reaction either in the guinea-pig or man. The symptoms, changes in tissues and organs and causation have nothing in common. The tuberculin reaction in the guinea-pig and man requires that living tubercle bacilli should prepare the way. As the converse of this proposition, I have stated in my book that in the great majority of cases a tuberculin reaction is evidence of the presence of living tubercle bacilli in a focus of disease, and in harmony with this idea, every year's experience brings me stronger and stronger con-

viction that a tuberculin reaction, properly controlled and rightly interpreted, is the best clinical test in cases of doubtful tuberculosis in any organ, especially in the early stages of the disease.

Many authorities have recorded that newborn babes do not react to tuberculin. Even when born of a mother in a late stage of tuberculosis, when tubercle bacilli circulate in her blood vessels, the infant will not react, unless a tuberculous focus has developed in intrauterine life or tubercle bacilli have passed into its blood vessels some time before birth. A *sine qua non* for a tuberculin reaction in the babe is not a quality of blood acquired from the mother, but the presence of tubercle bacilli or a tuberculous focus; this can only be actually proved by examining a number of babes born of women in an advanced stage of tuberculosis. It would be an interesting inquiry needing years of observation at special hospitals.

The idea that the single spermatozoon of a father could convey to the ovum a substance that would prepare the way for anaphylaxis is, if not impossible, at any rate inconceivable.

Thanking Dr. Tottenham for this opportunity of explaining my views on the nature and clinical importance of a tuberculin reaction.—I am, etc.,

W. CAMAC WILKINSON, M.D., F.R.C.P.

London, W., Jan. 11.

THE EARLY TREATMENT OF WAR WOUNDS.

SIR,—I am grateful for the very kind and, may I say, sympathetic notice of my book on the above subject, which appeared in the *BRITISH MEDICAL JOURNAL* of January 11th. I wish to point out, however, that in two important instances the writer of the review ascribes opinions and practice to me which I have striven against constantly.

(a) "... the opinion expressed, that acidosis is the cause and not an accompanying feature of shock, will not meet with general acceptance." On page 88 of the book, one reads, "As a result of shock and of haemorrhage, the body suffers two great losses, the loss of its fluid reserves, and the loss of its alkalis." Again, on page 92, "Although the resulting acidosis is without doubt a secondary, rather than a primary phenomenon, it is advisable to combat it with the early administration of sodium bicarbonate."

(b) "No mention is made of any attempt to maintain the flaps in apposition over the stump of the bone by extension applied to the soft tissues where suture is not deemed advisable." (Presumably primary suture is meant.) This matter is discussed on page 245, where methods of preventing contracture of flaps, by suture or strapping over gauze packs, etc., are indicated, and these are applicable under ordinary circumstances at casualty clearing stations.—I am etc.,

London, W., Jan. 12th.

H. M. W. GRAY.

ACIDOSIS.

SIR,—I have had several letters of inquiry as to our test for acetone (December 14th, 1918, p. 655), the doses of sodium bicarbonate mixture, and any further information I can give on the subject.

I find it very difficult to get a true history of the incubation period, diet, etc., but from the well-nourished condition of most of the patients I do not think a want of carbohydrates in the diet is altogether to blame, though this may help. From the number of cases coming into the hospital, in bunches, at various intervals, somewhat like a small epidemic, I have conjectured that there might be some bacterial influence at work causing the fermentation of organic matter in the body producing autointoxication. That there is a diversity of opinions on this subject only shows the great scope for physiological research.

The test we use is, to half a test tube of fresh urine saturated with ammonium sulphide add a few drops of sodium nitroprusside, then liq. ammonia 5ss, shake, and allow to stand. The result is a port wine colour varying in intensity with the amount of acetone present. The mixture we give is sodium bicarbonate gr. x, liquid glucose 5ss, water to 5i, every four hours for a child of 5 years, increasing the dose with age.

In answer to Dr. Stark's letter (December 21st, 1918, p. 700), my custom has always been to find out the cause of any disease, and, if possible, remove it. I know that a trace of acetone is found in many diseases, and after anaesthetics or operation, but not in anything like the quantity as found in acidosis or in diabetic coma. In this

hospital it is the custom to test the urine of every patient, and out of about 150 cases of genuine influenza pneumonia only in two were traces of acetone found. I have had over thirty recent cases, some very bad, and only one death—which is worth recording for the peculiar turn it took.

A child, aged 10½ years, admitted December 10th, 1918, was quite comatose. Pupils very much dilated; temperature 101°, pulse 96; could not be roused; trismus present; Kernig's sign absent; reflexes normal; had incontinence. Was catheterized and urine found loaded with acetone. Had to be nasal fed with milk and the sodium bicarbonate mixture. Four days after that treatment she became conscious, began to take food by mouth, and she was able to recognize her people. On December 18th she became comatose again, and had to be nasal fed. She died from cerebral haemorrhage December 20th.

If Dr. Stark will read that interesting account of the Medical Research Committee on acidosis and shock he will find we have still a great deal to learn about this insidious disease.—I am, etc.,

London, N., Dec. 26th, 1918.

K. J. DOUGALL.

THE ADMINISTRATION OF ANAESTHETICS TO SOLDIERS.

SIR.—Dr. Mills appears not to grasp the fact that the method of inducing anaesthesia practised by me is one in which "the administration is begun with a dilute vapour gradually strengthened, and whereby anaesthesia can be produced without cyanosis." Being practically open it is, of course, more likely to meet these requirements than the closed method he advocates. In the few rare cases in which cyanosis arises it is the result of spasmodic respiratory complications and not the cause thereof.

The method has stood the test of nearly fifteen years in my practice, and I am convinced that, so far as safety and simplicity are concerned, it has more to recommend it than any other method of induction—a matter of great practical importance to those who are only occasionally called upon to administer anaesthetics.—I am, etc.,

London, W., Jan. 13th.

G. A. H. BARTON.

GONORRHOEA AND DEMOBILIZATION.

SIR.—At the present time there is much discussion regarding the avoidance of widespread venereal disease consequent upon demobilization. It is obviously impossible to examine every man before passing him into civil life, but any approximately accurate test would be of great value. In the case of gonorrhoea, I beg to suggest that each man before demobilization should be compelled to pass an early morning sample of urine into a clean urine-glass in the presence of a M.O. The presence of threads in such an urine should be held to be highly suspicious of gonorrhoea. It is well known, of course, that gonorrhoea may be present and yet no threads occur in the urine, and also that threads may be present from causes other than gonorrhoea. Yet I think that this forms the most practical rapid examination possible, and would detect the vast majority of infected men and do injustice to very few. A more complete examination of this limited number of suspects would be manageable.

Following upon such a diagnosis it rests with the authorities to decide whether they will deal with the patient by:

1. Compulsory detention for further treatment.
2. Offer of voluntary treatment before demobilization.
3. Demobilization with advice as to his condition, and recommendation to apply for treatment at a venereal clinic.—I am, etc.,

JAS. B. MACALPINE, F.R.C.S.Eng.

Honorary Surgeon, Salford Royal Hospital;
Surgeon in charge of Genito-Urinary Department,
Salford Royal Hospital.

Manchester, Jan. 9th.

THE LABOURER AND HIS HIRE.

SIR.—Special Reserve medical officers who joined before the war are now being offered regular commissions in the R.A.M.C. I have refused the offer for the following reasons:

1. We were promised on taking commissions that in the event of mobilization we would be offered regular commissions on "advantageous" terms.

2. Compared with the temporary commissioned officers, we have suffered financially during the whole war. The difference in my own case from that of a temporary officer mobilized the same date is as follows:

Less pay and allowances	...	£100
Loss of allowances on leave and ships	...	16
Less outfit allowances (I received £20 in 1912)...	...	30
		146
Deduct difference in income tax	...	29
		£115

3. The temporary man has received a gratuity of £60 yearly—that is, £240 (+ interest about £50), and is due to receive another £60 for any part of this year—total about £350, less income tax. Our gratuity for the same period will be £270, but is not paid till demobilization, and is forfeited altogether if we take regular commissions.

Thus if we do not take a regular commission, we are less well off than the temporary man to the amount of £195. If we do take a regular commission, we lose all our gratuity, the temporary man keeps what he has received, and we are down to the tune of over £400.

4. For promotion, and retirement as captain, we stand exactly the same as the temporary man who mobilized the same date. The sole counterbalancing advantage we receive is the opportunity of retiring with pension earlier (two years in my case.)

I would like to point out that we who trained ourselves before the war (the three months' training is identical with that of regulars), who were ready and mobilized as trained men when war broke out, leaving our post-graduate studies or practices without warning or option, have a claim to be offered regular commissions upon at least as good terms as the temporary untrained men, who had the chance of settling their practices or finishing their examination courses.—I am, etc.,

December 19th, 1918.

"SPECIAL RESERVE OF 1912."

GRATUITIES OF TERRITORIAL MEDICAL OFFICERS.

SIR.—I am glad to note, in the SUPPLEMENT to the JOURNAL of January 4th, that you have had many communications from Territorial medical officers with regard to the injustice done to us about our gratuities.

May I add my note to the general outcry? I am in a T.F. division in which the feeling on the matter is intensely bitter. Not only do many of us lose heavily financially, especially in these days of high prices, but we feel that a definite promise has been broken, as the gratuity was to have been paid according to the rate of pay drawn on the last day of mobilized service. I trust that, as you say, the matter will not be allowed to drop. We feel, rightly or wrongly, that the promise was broken deliberately; if not, it is, as you suggest, at least a very curious coincidence that the order appeared just after the armistice.—I am, etc.,

January 11th.

CONTEMPTIBLE T.F., M.O.

MEDICAL RESETTLEMENT.

SIR.—The question of the equitable treatment of the doctors who have had to leave their practice in order to join the forces must have furnished much food for thought to those of us who have stayed at home, but, as far as I am aware, no general action has been taken.

It is not possible, within the limits of a letter, even to touch on all the problems with which the subject is beset, but two classes of patients can be clearly distinguished: (1) Those who were on the doctor's books before the war, and (2) those who would probably have been added during the war.

With regard to the first class there need be no great difficulty; they will be handed over to their own doctor while the arrangement whereby the absent doctor receives half the fees earned during his absence seems fair and reasonable, and has been largely adopted. The second class is not so easy to deal with; an absence of three or four years, especially in neighbourhoods where the population changes rapidly, will make a great difference to a doctor's list and the absentee will find on his return that his practice is considerably smaller than it was even though his interests have been most scrupulously guarded. Loyalty and tact will achieve much, but patients may, not unnaturally, object to being transferred from a doctor they know to one whom, perhaps, they have never seen.

The Sydenham District Medical Society has considered this aspect of the question at several meetings and has recently unanimously resolved:

That, subject to any mutual arrangement between the practitioners concerned, where a doctor (A), during the war, acquires patients who would presumably have gone to an absent colleague (B), he is at liberty to continue in attendance on payment to B of a purchase price equivalent to the fees earned during the last completed year of B's absence, with the addition of 25 per cent.

It is fully realized that the resolution of a local medical society can only be binding on its own members, but it is hoped that its publication may lead to a wider discussion, and if the scheme meets with approval to its general adoption.—I am, etc.,

H. M. STEWART,

Honorary Secretary, Sydenham District Medical Society.

Dulwich, Jan. 14th.

MEDICINE AND THE LAY PRESS.

SIR,—You have opportunely and effectively rebuked "Our Medical Correspondent" of the *Times*, on account of the harm he may have done or may do, by publishing in the lay press his somewhat undigested and perfunctory opinions on medical theories of disease; yet it seems to me one may read these views of his, however misleading, with equanimity, knowing how little they will affect medical opinion as a whole. But when "Our Medical Correspondent" deals with matters of public policy, such as the proposed Ministry of Health, or the question of handing over the medical officers of the R.A.M.C. holus bolus to the tender mercy of his new found friend the Director of Medical Services to the Ministry of Pensions, I am much more concerned as to the amount of harm which he may do.

However unreasonably, the public is apt to take the views of this anonymous member of the medical profession as representing the considered opinion of the profession as a whole upon matters which (to our discredit be it said) we have discussed little, and as to which we have as yet decided nothing.

Two thoughts arise: (1) The British Medical Association should at the earliest possible moment reconsider and redefine its policy on such vital matters as the establishment of a Ministry of Health, a State Medical Service, and the future treatment of our war-disabled men. (2) Some means should be found of rendering innocuous such pronouncements as those of "Our Medical Correspondent" in the *Times*.

As expressions of opinion, if published in a medical journal, "Our Medical Correspondent" might quite justifiably state his views, over his own signature. The medical profession would know how to appraise them, but published in a great newspaper to the public, who may regard them as authoritative, serious harm may result to the State and to the medical profession. My temporary employment in the R.A.M.C. prevents me from signing my name.—I am, etc.,

January 12th.

"SAMOTH."

The Services.

TEMPORARILY COMMISSIONED OFFICERS AND ACTING RANK.

In the JOURNAL of March 16th, 1918, p. 330, the substance was given of a General Routine Order applying to the Expeditionary Forces, which laid down that an officer of the R.A.M.C. (Regular, Special Reserve, Territorial Force, or Temporary) below the rank of major, holding an appointment definitely assigned to a major in war establishments, might be granted the acting rank of major to fill a vacancy. Temporarily commissioned officers granted such acting rank would receive the pay and allowances of a major with special provision for the adjustment of their gratuity.

In reply to various inquiries, we understand that the following is a correct statement of the special provision in question:

In the case of a temporary officer given such acting rank he will be granted the pay and allowances of major. As regards his gratuity, no further contract gratuity will be issued while the officer holds the acting rank of major. If the officer's services are terminated while the acting rank is still held, the gratuity will be calculated as laid down in Art. 497 (c) of the Pay Warrant, and

that amount will be issued less the amounts already received under the contract. In the event of the officer ceasing to hold the acting rank, the contract conditions will again apply, and any gratuity that may have fallen due under these conditions will then be issued.

OFFER OF REGULAR COMMISSIONS R.A.M.C.

We believe that in 1916 medical officers serving temporarily in the army were invited to apply for permanent commissions in the R.A.M.C., and a number of those who applied were subsequently chosen for this purpose on the recommendation of their superior officers. At the close of last year commanding officers of medical units abroad were, we understand, again instructed to furnish lists, arranged in order of merit, of Special Reserve, Territorial Force, and temporarily commissioned officers R.A.M.C., who desired permanent commissions in the corps, and could be specially recommended. The terms of appointment were announced to be as follows:

1. Officers will be appointed in the permanent rank of lieutenant, but if already holding the rank of captain will be granted the temporary rank and pay of captain for the period of the war. If holding the rank of lieutenant, they will be promoted to the rank of temporary captain for the period of the war on the completion of one year's service in the usual way.
2. Commissioned mobilized service as a medical officer rendered since the beginning of the war will be permitted to reckon for substantive promotion to captain.
3. Previous service will count towards retirement on retired pay or with gratuity under the provisions of Article 540 (11) Pay Warrant.
4. Officers who have drawn a gratuity will not be required to refund it, but no further gratuity will be issuable.
5. The limit of age is 28 years, but approved candidates will be allowed to deduct from their age the period of their mobilized service if such deduction will bring them within the age limit.

Universities and Colleges.

UNIVERSITY OF LIVERPOOL.

The following candidates have been approved at the examination for the diploma in Public Health:

Shaikh Ghulam Mohamed, P. P. Wright.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on January 9th, when Sir George Makins, president, was in the chair.

Donations to the Library.—The thanks of the Council were given to Mr. Alban Doran for presenting to the library five volumes of his literary contributions, together with five other volumes of pamphlets and articles, mainly on anatomical and gynaecological subjects.

Practical Anatomy.—The Council adopted the following resolution, proposed by Mr. H. J. Waring:

That, in pursuance of the action taken by the Council in 1915, the president be requested to represent to His Majesty's Government that, in any legislation relating to the promotion of the public health, provision should be made for ensuring an adequate supply of material for the anatomical and surgical instruction of students and practitioners of medicine.

Obituary.

DR. WILLIAM LONGBOTTOM, who died at Sheffield on December 12th, 1918, was born at Leeds in 1858; he studied at Edinburgh in medicine in 1880 and soon after taking the diplomas of L.R.C.P. and S.Edin. settled in Sheffield. He built up a large practice there, and held appointments under the Sheffield Board of Guardians from 1883 until his death; he held also the honorary appointment of medical officer to the Girls' Orphanage of the National Union of Teachers. During the period of the war, Dr. Longbottom, though not in robust health, refused to spare himself, and continued to work at full pressure; thereby he enabled others, younger and more fit than himself, to undertake military work elsewhere. His exertions during the last four years shortened his life, and he was laid aside from work for a few months before his death. Dr. Longbottom had a striking personality. He was always ready to champion any cause that had to do with the uplifting of his profession, and his straightforwardness was the admiration of all who knew him. Naturally of a cheerful disposition he had a great influence for good, and was beloved by all who came in touch with him. Dr. Longbottom is survived by a widow and three daughters.

DR. JOHN ROBERTSON, who died at his residence in Brixton Road on January 8th after a short illness, was born in Scotland in 1849, and received his medical education at Aberdeen University. He took the diplomas of L.R.C.P. and S. Edin. in 1878, and after a period of practice in Aberdeen he removed to London, where he continued to work until his death. He was a member of the British Medical Association and of the Aberdeen Medico-Chirurgical Society. He had in recent years devoted himself entirely to x-ray and electro-therapeutic work. During a Zeppelin raid in September, 1916, Dr. Robertson's house was destroyed by a bomb, and he sustained injuries from which he never fully recovered.

Medical News.

MAJOR-GENERAL SIR M. P. C. HOLT, K.C.M.G., A.M.S., has been appointed a Knight of Grace in the Order of St. John of Jerusalem.

DR. G. I. AWBURN of Mottram-in-Longdendale, Cheshire, has been appointed a Commissioner of the Peace for the county of Chester.

THE United States Public Health Service has asked for appropriations amounting to £5,200,000 for the erection of hospitals providing 13,000 beds for sick and wounded discharged from the army.

THE New York Diagnostic Society, which was founded a year ago, intends to establish a hospital for diagnosis in New York. The building, to consist of six stories and a basement, will be provided with the most modern equipment for diagnostic investigations and tests. The institution is to be self-supporting. The cost of the site and building will be £50,000.

AT a special meeting of the Faculty of Insurance to be held on Tuesday, January 28th, in the Central Hall, Westminster, at 7 p.m., Mr. E. B. Turner, F.R.C.S., chairman of the Medical Committee of the National Council for Combating Venereal Disease, will deliver an address on Venereal Disease, an Urgent Health Problem. The chair will be taken by Sir Kingsley Wood, M.P., and a discussion on prophylactic treatment will be opened by Mr. P. Rockliff, president of the Faculty. Tickets may be obtained at 3 and 4, Sicilian House, Southampton Row, W.C.1.

SEVERAL courses of lectures and demonstrations, arranged by the Royal Sanitary Institute, will begin next month—the sanitary officers' course on February 17th, the course for women health visitors, tuberculosis visitors, school nurses, and school teachers on February 21st, for maternity and child welfare workers on February 24th, and for candidates preparing for the examination for inspectors of meat and other foods on February 21st. The courses are all well arranged and thoroughly practical. Further information can be obtained on application to the director and secretary, 90, Buckingham Palace Road, S.W.1.

THE Home Secretary has issued a scheme of compensation under the Workmen's Compensation (Silicosis) Act, 1918, for the refractories industries. The scheme provides for the payment of compensation in the case of the death or disablement of a workman caused by silicosis or by silicosis accompanied by tuberculosis, in all processes in the getting, handling, moving, breaking, crushing, grinding, and sieving of refractory material containing not less than 80 per cent. of silica. It applies to all mines, quarries, factories, and workshops at which any of the processes are carried on with a view to manufacture or sale, except mines or quarries in which such material is only occasionally worked. Copies of the scheme can be purchased through any bookseller.

THE Tuberculosis Society has arranged a conference of tuberculosis officers in the United Kingdom to discuss the scope of their work, the status of the personnel, the relation to existing public health service, remuneration, security of tenure, and superannuation. The conference will take place on Saturday, January 25th, at the Royal Society of Medicine, 1, Wimpole Street, London, at 7 p.m. The Tuberculosis Society submitted a memorial to the Prime Minister, the President of the Local Government Board, and to the Treasury in 1914, and it is suggested that this should form the basis of the discussion and resolutions at the meeting. The memorial recalls the recommendation of the Departmental Committee on Tuberculosis, 1913, that tuberculosis officers should be specialists in the work, and states that the recommendations of the

Committee were generally endorsed by the Local Government Boards. The memorial represented that it was important that from the outset tuberculosis officers should be ensured satisfactory status and security of tenure. Dr. Dundas Grant will give an address on tuberculosis in relation to the upper air and food passages at a meeting of the Tuberculosis Society on Monday, January 27th, at 8.30 p.m., at 1, Wimpole Street.

THE Director of the Natural History Museum has added to the list of economic leaflets and posters a poster on "the louse danger," illustrated by a drawing of the clothes louse. The infection of relapsing fever, typhus and trench fever are enumerated as those proved to be conveyed by the louse, and directions are given for avoiding infestation. It is pointed out that regular washing of underclothing and bed linen, weekly if possible, will prevent lice from thriving, even should casual infestation occur. Hospital workers and others brought into frequent contact with verminous persons are advised to wear white linen overalls and to use undergarments impregnated with an efficient insecticide, but the substance to be preferred is not stated. The value of dry heat in the disinfection of clothing or bedding is indicated, and it is stated that a temperature of 131° F. maintained for twenty minutes is fatal both to lice and nits, but the clothing must not be bundled. It is added that ironing with a hot iron, paying particular attention to the seams, is also effective. The insecticides recommended are light oils such as kerosene or petrol, which will be more effective against the nits if a small percentage of some essential oil such as sassafras be added. For immersion of garments a solution of lysol or cresol soap (soft soap 1½ lb., water 10 gallons, Jeyes' fluid 1½ oz.) is advised. Immersion for five minutes in a 2 per cent. solution is adequate for temperatures above 41° F. As to naphthalene, it is stated that the crude material retains its efficiency longer than the flaked product, and that evaporation is retarded if the naphthalene be mixed with soft soap and used as an ointment. Copies of the poster can be obtained from the Director of the Museum (South Kensington, S.W.7), price 3d., or free by post 1d.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notices to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology*, Westrand, London; telephone, 2531, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2530, Gerrard.

3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2534, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

INCOME TAX.

Allowable Deductions.

II. F. G. inquires as to whether "general" expenses are allowable for tax purposes in computing the assessable income.

*. The answer is in the affirmative, provided that such expenses are reasonably attributable to the conduct of the practice, and do not represent an outlay of further capital. For instance, expenditure on drugs would be allowable if incurred for clients' prescriptions, but not if for special research work; on light and heat to the extent to which it referred to the professional and not to the domestic rooms, and so on. As to motor expenditure, see answer to "W. J. F." below; running cost is of course allowable.

W. J. F. inquires as to the basis of the allowance for the cost of renewing his car, having regard to present enhanced prices.

*. The question is one of distinguishing between "capital" and "revenue" expenditure. The first vehicle purchased

represents capital expenditure purely; a subsequent expenditure on renewal would be "revenue" expenditure, except to the extent to which it increased the total capital outlay. Thus, taking our correspondent's figures, the allowance should be:

Total capital outlay: First car	£135
Second car	£250
	£385
Deduct amount received on sale of first car	£110
	£275
Value of second car at time of purchase	£250
Difference, being amount attributable to revenue expenditure	£25

There is a latent hardship in this case, arising from the fact that the value of the £250 car may fall, but that is inseparable from the fact that depreciation is not allowed in assessing professional profits. If the value does not fall there is no hardship; in any case the £25 is correct as the amount of "renewal" expenditure.

Army Pay.

H. W. F. asks for information as to the expenses he is entitled to deduct from his army pay.

* * The expenses referred to, for example, accommodation for wife and children, excess on kit allowance and travelling, are, according to the judicial interpretation of the Acts, incurred not so much "in the performance of his duties" as in order to put our correspondent in a position to begin that performance, and are not allowable. We presume that he has had the appropriate annual allowance of £25 or £30 from the assessment for the upkeep of his kit.

LETTERS, NOTES, ETC.

MINISTRY OF PUBLIC HEALTH.

DR. J. BRINDLEY JAMES, President of the Association of Members of the Royal College of Surgeons of England (London, S.W.13), writes: Several members of our profession are claiming to be the first to suggest the appointment of a Minister of Public Health. Now you will find on referring to your JOURNAL of August, 1889, that I read a paper on that subject at Leeds. Since that time several writers have taken up the subject, and I am pleased our Government is now alive to the necessity of such a Minister to look after the welfare of the community at large. I may say *en passant* that one of my reasons for advocating a Minister of Public Health was to have our profession more recognized by the State. Since I read my paper at Leeds we all have witnessed the advances made in surgery, hygiene, and medicine, and how those advances have combated and alleviated the sufferings of the public, but more especially those men who have been fighting in this great war and whose lives have been saved by this triune. Of all the learned professions, medicine stands first for learning and scientific research, and I can say without contradiction has been the least recognized by the State.

VENEREAL DISEASE AND PROFESSIONAL SECRECY.

DR. L. BOUSFIELD (Khartoum) writes to draw attention to the statement by Mr. E. B. Turner at the annual meeting of the National Council for Combating Venereal Disease that "if a doctor, knowing that a patient suffering from venereal disease was about to be married, spoke of it to the other contracting party or to his or her parents or guardians, he laid himself open to an action for libel, and, what was even a greater deterrent, he violated the confidence of the consulting room. It was no use to alter the law of libel in this matter, as had been suggested, so long as the professional ethics in the case remained as they were. No doctor would violate confidence unless it was laid upon him as a statutory obligation to do so." (BRITISH MEDICAL JOURNAL, June 22nd, 1918, p. 700). Dr. Bousfield argues that if an action for libel in such a case can be maintained, the quicker the law is changed the better; and that if professional ethics require a doctor to keep silent in such cases, no words are strong enough to condemn professional ethics in this respect. In most matters, he agrees, the confidence of the consulting room must be most rigidly maintained and guarded; but the man or woman who, after due warning by a medical man, persists in marrying while actively infected, must be devoid of all decent feeling—in fact, criminal—and therefore should not be protected by the law or by our profession.

VENTILATION AND DIET IN INFLUENZA.

DR. JOHN HADDON (Hawick) writes: In the BRITISH MEDICAL JOURNAL of November 16th, 1918, p. 562, Dr. Atkinson says he had no cases of pneumonia, "perhaps because as soon as I got into the bedrooms I opened the windows wide and insisted on their being kept so." The memorandum on influenza by the Royal College of Physicians in the same

issue of the BRITISH MEDICAL JOURNAL, p. 546, while advocating good ventilation, says, "draughts are due to unskilful ventilation and are harmful." There is sure to be a draught in a bedroom with both window and door open, and mine are never closed. Miss Florence Nightingale, in her lectures to her nurses, says they should feel the air on their cheeks in the hospital ward, and I think she was right. It is not the draught that does harm but the polluted atmosphere, which stops elimination by the skin and lungs and poisons the system. The Anglo-Saxons would not meet under a roof, declaring that there were evil spirits there, and it would be well if in the houses that are to be built provision would be made to have a draught through every room.

Dr. Atkinson further says that he advised his patients to remain in bed, to eat nothing, and to drink plenty of water. The late Dr. George Keith, after long experience, insisted on cases of influenza fasting from all food; this, he said, prevented secondary symptoms. I read in some old book of one member of our House of Commons complaining to another that he could not stand the atmosphere of the House, and the other said, "I can stand it well enough if I don't eat too much," and in that observation there is great wisdom. The more we eat the more we have to eliminate, the less we eat the less; and seeing that the skin and lungs alone eliminate the waste products of the tissues, one can understand how important it is that the function of organs of such importance to health should not be overtaxed. The only way one can account for such a world-wide epidemic as this of influenza is on the theory that the primary cause is in the atmospheric conditions of which we know so little. That such conditions alter our power of elimination by the skin and lungs I am quite sure from my own personal experience. Our first hard frost raised my weight half a stone, due to retention of fluid in the system, very evident in the skin, which alters one's features entirely. To prevent influenza, then, we must eat less, and avoid a stagnant atmosphere.

THE EXAMINATION FOR THE M.D. BRUSSELS.

DR. ARTHUR HAYDON, Honorary Secretary, Brussels Medical Graduates' Association (St. Aubyns, Swanmore, Ryde, Isle of Wight), writes: I have received a communication from the Secretary of the University of Brussels to the effect that the university will reopen in February, and that the first examination for the M.D. will take place in March or May. It will be on the same lines as formerly. I shall be pleased to send full particulars to any candidates who may wish to enter for the examination.

THE EXTINCTION OF FIRES.

THE British Fire Prevention Committee (8, Waterloo Place, S.W.1) has issued a small red book on *How to Deal with Different Kinds of Fires* (3s. 6d., post free 3s. 8d.), by Mr. Sidney G. Gamble, formerly of the London Fire Brigade, and the author of a *Manual for the Use of Fire Brigades*. The first part of the book gives general information as to fires and the effect of water, steam, and chemicals applied from different forms of fire appliances. The second part deals alphabetically with a number of materials and various kinds of fires, including those due to chemicals and explosives.

BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

Subscriptions to the Second Appeal.

The following subscriptions have been received up to Monday, January 13th:

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Mr. E. Spencer Evans	...	Mr. J. F. Cowrie	1 1 0
(monthly)	0 10 0	Dr. C. Buttar	3 3 0
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Commission for	...	Dr. E. S. Green	1 1 0
Belgium (monthly)	200 0 0		

Subscriptions to the Fund should be sent to the Treasurer, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W.1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

THE following appointments of certifying factory surgeons are vacant: Alford (Aberdeen), Heckington (Lincoln), Ilminster (Somerset).

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

HERPES ZOSTER: ITS CAUSE, AND ASSOCIATION WITH VARICELLA.

BY

R. CRANSTON LOW, M.B., F.R.C.P.,

ASSISTANT PHYSICIAN TO SKIN DEPARTMENT, ROYAL INFIRMARY, EDINBURGH.

BEFORE passing to the discussion of the probable cause of herpes zoster and the relation of that disease to varicella, I shall give a short note of cases which have come under my notice. My experience is limited to three observations.

CASE I.

In October, 1915, I was asked to see a gentleman suffering from herpes zoster affecting the skin area supplied by the first division of the fifth nerve of the right side. He had a very severe attack, the whole right side of the face being swollen and oedematous, the right eye completely closed, and the right side of the forehead and anterior part of the scalp covered with a sloughing and suppurating crusted eruption. Although the eyelids were very swollen and the conjunctiva oedematous and injected, there was no eruption on or ulceration of the cornea. The pain was intense, accompanied by sleeplessness and a general feeling of depression. The patient was a strong otherwise healthy man, aged 43. He made a slow recovery, the eye giving trouble for some time. Now (three years later) a scar is visible at the site of the previous eruption, and there is still a considerable degree of anaesthesia of that area. I inquired as to whether he had been in contact with a case of herpes zoster or varicella, but could trace no source of infection. He had never suffered from chicken-pox. Thirteen days after the patient showed the first signs of herpes zoster two of his children developed typical chicken-pox, and a fortnight after that other two also showed the same disease. These children were attending school when attacked, but so far as is known had not been in contact with any case of chicken-pox.

CASE II.

Some months ago a patient under Dr. Norman Walker's charge in the skin wards of the Royal Infirmary, Edinburgh, suffering from lupus vulgaris developed a typical right-sided thoracic herpes zoster. Two days later a child in the same ward suffering from seborrhoeic dermatitis developed chicken-pox. Both these patients had been in hospital for several weeks previously, so that the infection was probably brought into the ward by visitors.

CASE III.

On October 24th, 1918, a child was admitted to the children's ward of the Deaconess Hospital suffering from typical herpes zoster on the right side of the body. On November 12th (that is, nineteen days later) another child in the same ward developed typical chicken-pox. This child had been in the ward since October 21st.

These three observations are very similar to many which have been recorded within recent years. Bókay³¹ of Budapest was the first to draw attention to the possible association of herpes zoster and varicella. In 1892 he suggested that the virus of varicella might in certain circumstances, instead of producing a generalized eruption, cause a zoster eruption, and in 1909 he reported further cases (nine in all). In all these nine cases one member of a family or patient in a ward developed herpes zoster, and at intervals varying from eight to seventeen days one or more members of the same household or ward developed chicken-pox. Since Bókay's observations similar cases of herpes zoster followed by varicella have been reported by Hepworth,¹ Orr,¹⁶ Heim,²⁸ Cressy,⁸ Bruce,⁵ Roberts,⁶ Harrison,⁷ Oakes,⁸ Contes,⁹ Wilson,¹⁰ Milne,¹² Busfield,¹⁴ Bartlett,¹⁶ Coleman,⁴⁰ and le Feuvre.³⁵ The number of such cases must be well over fifty by now. In all, no other source of infection except the herpes was to be found. This is particularly noticeable in le Feuvre's nine cases, some of whom lived in the country many miles from the nearest town. In all the recorded cases the chicken-pox eruption appeared in from eight to twenty-one days after contact with a case of herpes zoster—that is, within the ordinary incubation period of chicken-pox.

The converse condition, namely, a case of chicken pox followed by a case of herpes zoster, has also been observed, although not so frequently. Such cases are recorded by Dando,¹⁵ Hepworth,¹ Aikman,³⁴ and Savill.¹¹ In these cases one member or members of the household had chicken-pox, and another developed herpes zoster later. Assuming the chicken-pox to be the source of infection the herpes zoster developed in most cases in from two to five weeks after exposure to the chicken-pox.

Further, the cases of herpes zoster and a varicella-like eruption occurring in the same individual must be mentioned. Such cases have been recorded from time to time

in the medical literature under the title "herpes zoster generalisatus." One of the most typical of these cases is that published by Pernet³⁰ in which a typical left-sided herpes zoster affecting the third, fourth, and fifth dorsal segments occurred. In addition aberrant vesicles occurred in large numbers on the trunk, limbs, scalp, and face. This general eruption was described as looking like a bad attack of varicella. Parkes Weber,²⁵ le Feuvre,³⁵ Colombini,⁴⁷ Leredde,⁴⁰ Molonić,⁴⁸ Haslund,⁴⁹ Jeanselme,⁵⁰ French,⁵⁰ Arkwright,²⁹ Beyer,³² Fasal,⁵³ Nobl,³⁷ Minet and Leclercq,⁴⁶ Touraine,⁴⁴ Tryb,⁴⁹ and Fischl,¹³ have reported similar cases. In nearly all the herpes zoster appeared first and was followed in four or five days by a general vesicular eruption. In almost all the reports the lesions are described as indistinguishable from those of varicella.

Taking into consideration the facts above stated—namely, (1) that herpes zoster in a household is frequently followed by a case or cases of chicken-pox, (2) that cases of chicken-pox may be followed by cases of herpes zoster in the same house, and (3) that cases of herpes zoster, in addition to the ordinary lesions, may show an eruption similar to chicken-pox—one is almost forced to conclude that these two diseases are probably due to the same virus. I would go further, and suggest that in herpes zoster the infection is probably local, through the nose, along the lymphatics, round the olfactory nerves, as has been shown to be the mode of infection with the virus of anterior poliomyelitis, a disease which has many points of analogy with herpes zoster. Once the virus reaches the meninges and cerebro-spinal fluid it is easy for it to get to the ganglia on the sensory nerve trunks. In chicken-pox there is probably a blood infection with the virus. In the cases which show both herpes zoster and a varicella-like eruption, the virus probably attacks the ganglia first, and thence, four or five days later, gets into the general circulation, producing the generalized eruption.

There are certain facts which point to the eruption in varicella not being, primarily at least, due to the virus settling in the end capillaries of the skin but in the nerve endings or minute nerve twigs in the skin. Microscopically the vesicle in herpes zoster is somewhat similar to that seen in the early stages of varicella. The lesions in chicken-pox often occur in groups, suggesting that a small branch of a peripheral nerve is the seat of a focus of infection. Many of the chicken-pox lesions also show a vesicle with no inflammatory halo around it. This same kind of lesion is seen in pemphigus and dermatitis herpetiformis, which are generally considered to be toxic nerve lesions.

As yet in neither herpes zoster nor varicella has any definite causal organism been discovered. In a list of diseases due to filter-passing ultra-microscopic viruses Flexner in his Huxley lecture²¹ mentions poliomyelitis and vaccinia. The first of these is analogous to herpes zoster in many particulars, and vaccinia lesions in their early stages are similar to those of chicken-pox. Therefore it is possible that the virus of herpes zoster and of chicken-pox belong to the same group of organisms.

The question of epidemics of these diseases must now be considered. It is, of course, admitted that chicken-pox occurs in epidemics. Similarly, no one will deny that herpes zoster also occurs in epidemic form. If herpes zoster and varicella have a common origin, one would expect simultaneous epidemics to occur. Unfortunately, there is very little information to be got on this point. The only instance I can find in the literature is that recorded by Heim.²⁸ He reported simultaneous epidemics of herpes zoster and varicella in Budapest during April and May, 1912. As neither disease is notifiable, statistics on which to base an opinion are wanting, and the fact that Heim's report is the only one on record is no proof that such simultaneous epidemics do not frequently occur.

The question of the immunity produced by an attack of herpes zoster or varicella is important. An attack of chicken pox usually conveys immunity to that disease for life. Similarly, one attack of herpes zoster is rarely followed by another. Most of the recurrent attacks of herpetic eruption are not true herpes zoster due to an acute lesion in the ganglion, but are recurrent attacks of peripheral neuritis due to pressure by a tumour on nerves, causing an eruption in the distribution of these nerves.

If herpes zoster and varicella are the same infection, it might be expected that an attack of the one disease would produce immunity against the other. A certain number of cases are recorded, and I have myself seen one a few days ago, in which an adult, who had suffered from chicken-pox in childhood, developed herpes zoster, so that it must be admitted that an attack of varicella does not necessarily protect the individual against herpes zoster. I can find no record of a case of herpes zoster developing chicken-pox later on, and in no case of herpes zoster associated with a generalized varicella-like eruption has a previous attack of chicken-pox been recorded. That might mean that an attack of herpes zoster protects the individual against chicken-pox, but individuals who have herpes zoster are in many cases past the age when they are likely to take chicken-pox.

Further knowledge on this question of immunity is required. As both varicella and herpes zoster are seen more frequently by the general practitioner than by the dermatologist, much light might be thrown on the subject if practitioners made a point of inquiring in all cases of herpes zoster and chicken-pox as to previous attacks of either disease.

When discussing the cause of herpes zoster the cases which occur whilst arsenic is being taken must not be ignored. In such cases the question arises whether the arsenic produces an arsenical neuritis with the eruption in the distribution of the nerve or whether the arsenic makes the individual's nervous system more susceptible to infection with herpes zoster. The latter would seem to be the more probable explanation, because even although the patient continues to take the arsenic, the herpes zoster runs a normal course, heals up, and does not recur, as one would expect, if an arsenical neuritis were the cause. Further, Parkes Weber²⁵ reports an instance in which a patient was taking arsenic and developed herpes zoster with a generalized varicella-like eruption, and another patient from the same ward developed chicken-pox fifteen days later. Therefore I am inclined to consider arsenic, like exposure to cold, worry, and so on, as merely a predisposing cause to infection with the unknown virus.

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- ⁵ E. J. Brice, August 30th, 1913. ⁶ G. E. Roberts, August 30th, 1913.
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- ⁹ W. H. Coates, August 30th, 1913. ¹⁰ H. S. Wilson, August 30th, 1913.
- ¹¹ A. Savill, October 4th, 1913. ¹² J. A. Milne, October 4th, 1913.
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PUBLIC MEASURES FOR THE PREVENTION OF TUBERCULOSIS.

BY

LIEUT.-COLONEL NATHAN RAW, C.M.G., M.P., M.D.,
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THE spread of tuberculosis in any community can only be checked by public measures forming a co-ordinated scheme for attack on the disease. Tuberculosis being to a large extent a disease of ignorance and misery, our efforts to prevent it must be directed towards the social conditions and insanitary surroundings of the poor. It is essential to establish very close co-operation between voluntary action and Government and municipal efforts.

The general measures for the control of tuberculosis may be stated under the following heads:

Voluntary and Compulsory Notification.

Tuberculosis being essentially an infectious disease it is desirable that complete notification of all cases should be made to the officials who are responsible for the public health, so that they may be informed as accurately as possible as to every person infected with the disease.

In England voluntary notification has been superseded by compulsory notification, at least as far as pulmonary tuberculosis is concerned, and although it is open to question whether it is desirable to notify the private patients of a medical man, yet if a certain amount of discretion is exercised there can be no doubt that compulsory notification is in the general interest of the community, although it may press hardly on individuals. An order from the Local Government Board for England and Wales compels the notification of every inmate of a public institution suffering from any form of tuberculosis. This notification must be made on special forms by the physician attending the case; for this he receives the small fee of 1s. As soon as notification is received by the health officer a visit is paid to the home of the patient, and a careful inquiry as to his personal condition and surroundings made. If, in the opinion of the health officer, his home surroundings are such as to make it unsafe for him to remain, power is given to remove the patient to some institution, but this power is very rarely exercised.

In large cities where a great amount of overcrowding exists, the treatment of the advanced case of tuberculosis is of supreme importance. If he is allowed to live in the same dwelling and share the same room as his wife and children, it will almost certainly happen that one or all of his family will become infected. Therefore it is absolutely necessary that he should be removed to some safer surroundings unless he is able to have a room to himself and to look after his own personal cleanliness. It is no use to keep a patient in a sanatorium for six months and then discharge him as incurable, to spend the rest of his life in an overcrowded cottage or tenement where he may spread the infection to a new generation. Provision ought to be made, either by Government or by the municipality, for the detention and comfortable treatment of all cases of incurable tuberculosis. I am not in favour of exercising compulsory powers of removal from a man's own home, but if it is for the protection of healthy people, then removal ought to be made compulsory; but I think it will be some time before public opinion is ripe for such measures.

The health authority will disinfect and clean the clothing and bedding of any notified case, and then will also carefully disinfect the house in which he has lived. Very often the patients complain of this attention to their homes and their clothing, but it is essential that it should be done for the protection of the future residents of the house. It is also the practice to notify to the health authorities any change of address of a tuberculous person, so that they may keep in touch with any house in which he may live.

On the whole, compulsory notification will prove useful in the fight against the disease, but it should only be used in a wise and gentle manner, as otherwise it is liable to cause personal discomfort, and may have the effect of ostracizing the patient from society. If it is pushed too far it may also have the effect of preventing him from earning his livelihood by reason of his fellow-workers having a fear of infection in the workshop or factory. Although many countries are still doubtful as to the wisdom of enforcing compulsory notification, yet from the point of view of suppression of an infectious disease it cannot be denied that with care and consideration the compulsory notification of tuberculosis is bound to do good.

Removal of Affected Children from School and Home.

The medical inspection of school children is now thorough and complete in Great Britain, as in many other countries, with the result that a fair number of children of school age are recognized as suffering from pulmonary tuberculosis, although this number is not so large as one might be inclined to expect. Pulmonary tuberculosis is comparatively uncommon amongst school children; the other forms of tuberculosis are more often seen. A child suffering from open tuberculosis should at once be removed from school, mainly for the protection of the other

children, as it is possible for one child in an overcrowded and badly ventilated schoolroom to infect several of its fellows. In a family the infected child should, if possible, always be provided with separate accommodation; or, better still, removed from the family circle until recovery has taken place; on no account should the child sleep with any other children, or even with its parents.

Treatment of Children in Special Children's Sanatoriums.

The provision of special sanatoriums for children is, I am glad to say, in England making steady and rapid progress; many of these sanatoriums have been provided by the education authorities, with excellent results. It has been found undesirable for children to be treated in a sanatorium for adults; hence it is necessary to provide special institutions for them. The children's sanatorium has the double advantage of continuing the education of the child and at the same time providing the means of cure of the disease. In countries where the climate is more suitable for this treatment a great many such sanatoriums have been provided, and in Great Britain much success has attended their adoption.

Education of the General Public with Regard to the Disease.

The main point in the campaign against tuberculosis must be the education of the general public with regard to the disease. The National Association for the Prevention of Consumption aims almost entirely at this part of the work; it has numerous branches in most of the large cities and towns of the British Isles, where the work of education of the public is steadily pressed forward. A travelling exhibition, provided with models of everything necessary in the treatment of the disease, is constantly moving from place to place; demonstrations are given by competent teachers on the management and nursing of children and the prevention of tuberculosis, and popular lectures are given each evening by experts. In this way an enormous amount of information is steadily disseminated. Education of school children is constantly going on, and the teachers themselves are instructed in the methods of prevention and treatment of tuberculosis. Literature is scattered broadcast throughout the land, and illustrated posters are affixed in every town, so that all possible means are used to convey to the public the information so much required.

Provision of Municipal Dispensaries in Every Community.

The public dispensary has been proved to be of value in the treatment of poor persons afflicted with tuberculosis, and it is suggested that in every town the health authority should provide municipal dispensaries where the poor may receive attention and where the most careful inquiry can be made with regard to their families. The house of every infected person is carefully inspected and the accommodation noted. Advice as to nursing, isolation, and treatment is given in every case, and, where necessary, rigorous action is taken by the health inspectors. In this way it is hoped that every affected person may have the opportunity of receiving advice and treatment, together with assistance to his family if necessary.

In the case of insured persons transferred to a sanatorium under the National Insurance Act, dependants of the family will receive 10s. a week for six months, and, if necessary, further assistance will be given to the affected person. This is a great step in advance, and will undoubtedly induce a great many of the working class to accept treatment in a sanatorium, knowing that their family will be provided for in the meantime.

Provision of Sanatoriums for the Cure of Early Cases.

The provision of sanatoriums for treatment and cure is a vital necessity. Tuberculosis in its early stages responds admirably to sanatorium treatment, and it must be our aim in the future to obtain the cases at the earliest possible moment, so that they receive special treatment with a view to cure, and also receive special education and instruction with regard to their manner of living in the future. The sanatorium itself should be reserved for early cases of tuberculosis; it cannot be expected to do much good in advanced cases, and being of a very costly character

its resources should be reserved for hopeful and curable patients. In the national insurance scheme such sanatoriums will be erected in every locality, and every suitable case will have opportunity of cure. The results of sanatorium treatment have been excellent, and it is hoped that they will be still further improved as a better selection of patients is made.

Institutions for Advanced Cases.

In my opinion the most potent factor in the spread of tuberculosis is the advanced case who is not under proper supervision. The man in the final stages of consumption, who is pouring out millions of bacilli from his lungs each day and who has not physical strength to look after himself or take ordinary care, is a serious danger to the community. These are the people who require the most rigorous supervision and who as a rule are neglected by everybody. The late Professor Koch often said that he attributed the steady decrease in tuberculosis in England to the fact that such a large number of advanced cases of tuberculosis were isolated and treated in the Poor Law institutions of Great Britain. This opinion is undoubtedly true; the very fact that so many were constantly segregated must have had a great influence in the decline of consumption. Special institutions should be provided for advanced cases where they may be made comfortable and happy to the end, but it is doubtful if it would be wise at present to enforce isolation of such cases, although I have no doubt that in the future this will have to be done.

Home Training and Supervision amongst the Working Classes.

Tuberculosis being a disease of long standing, those who suffer from it should be instructed in the manner of living at home. The working man or working woman must attend to daily duties, in many cases for years, whilst suffering from the disease; hence the sufferer, if he is to live at home with safety, must know how to protect the other members of the family. There is a strong prejudice in England against the working man using a sputum flask in the workshop or factory, so that there is every temptation to conceal the disease. It is not desirable, however, that a workman should be treated as a leper because he happens to be infected with tuberculosis, otherwise he is in danger of losing his ordinary place in the labour world, and becoming a burden on the community. It is much more necessary that he should be instructed how to take care of his expectoration, and how to prevent the slightest tendency of infection to the healthy members of the community; if this is done there is no reason whatever why he should not attend to his daily work and associate in ordinary social life. There is a great danger of frightening consumptives, and our efforts must be towards removing that fear, and educating the general public in the right direction.

Rigorous Supervision of the Milk Supply.

The question of a pure milk supply is of the first importance in every community, and of urgent importance, as it is the staple food of infants and children. Notwithstanding what has been said by many experts in different countries, there can be no doubt that a large amount of tuberculosis is conveyed to children by infected milk and food. Tuberculosis is very common amongst dairy cows in Great Britain and Ireland—in fact, about 20 per cent. of cattle are infected with the disease at the present time. Cows with tuberculosis of the udder are, however, by far the most dangerous, and hence only about 2 per cent. of the infected cows are highly dangerous to children. It is the practice, however, in this country to mix all the milk from a herd of cows, so that one cow with disease of the udder may contaminate the whole milk supply. Whilst consumption is steadily decreasing in this country, the same cannot be said for tuberculosis in children. A very large number of the lesions occurring in children are the result of infection from tuberculous animals in the form of food, and every step must be taken to prevent such contamination.

Legislation has recently been introduced in England with a view of establishing a pure milk supply; it is proposed that all persons offering milk for sale should be registered and their premises periodically inspected. Every cow supplying milk will be under rigorous inspection

by the health authorities, and compensation will be paid to the owner of any cow which is found to be suffering from tuberculosis. In the meantime the public are advised to sterilize the milk before being given to infants, with a view to destroying tubercle bacilli and other organisms. In Liverpool a great amount of special care has been taken by the health authority to safeguard the milk supply. Special powers have been obtained to inspect the source of all milk coming into the city, and the result has been that I have myself observed a steady decrease in hospital of children suffering from tuberculosis.

The amount of disease conveyed from animals to man seems to vary in different countries. In Scotland there is more than in England; whilst in the British Isles there appears to be more tuberculosis conveyed by milk than on the Continent, where it is almost the universal practice to pasteurize the milk before drinking. Whether this be so or not, we are all agreed that in the campaign against tuberculosis every effort must be made to eradicate the disease from dairy cows. This, I admit, is a very costly undertaking, and millions of pounds would be required to do it effectively in England alone. The scheme suggested by Bang has had excellent results in Copenhagen, and a similar process should be gradually introduced into every country.

Assistance to Family in the Absence of the Bread-winner.

The question of providing assistance to the family in the absence of the bread-winner during his stay in a sanatorium has been to a great extent solved by the provision in the National Insurance Act already referred to, but this work requires further extension, and a central fund ought to be provided in every community for the special purpose of looking after the family when the parent is undergoing cure; otherwise it is impossible to expect him to give himself up to treatment for any prolonged time.

Provision of Suitable Employment in Cured and Arrested Cases.

The question of providing suitable employment for cured cases, and for those in whom disease is arrested, is one of great difficulty, although of immense importance. Very many private employers are now giving such workers out-of-door, easy employment, as it is only in this way that they can be expected to remain well and fight the battle of life. We wish to extend this practice, and appeal confidently to those employers of labour who have the opportunity of making such provision for their workers.

By adopting a combination of measures such as those enumerated, we can confidently hope slowly but surely to exterminate the disease which ought not to be in our midst, but is provoking such an amount of havoc, misery, and loss of human life. The new Ministry of Health, by co-ordinating and controlling all the necessary measures for the prevention and control of tuberculosis will be the means of saving an enormous amount of suffering and wastage of valuable human lives.

An Investigation

INTO

THE INCIDENCE OF ALBUMINURIA AND CASTS IN BRITISH SOLDIERS DURING TRAINING,

AND THE RELATIONSHIP OF THIS CONDITION TO WAR NEPHRITIS.*

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THE question of the incidence and significance of albuminuria in the soldier has in the past received very little attention, and the literature contains but scanty information as to the extent to which kidney deficiency is present in the army. Though the recruit is supposed to be physically fit, little provision is made for the testing of his renal function at the time of his medical examination, with

the result that the milder cases of nephritis without objective symptoms are likely to be drafted into the army. The outbreak of acute nephritis (so-called war nephritis) which began at an early stage of the war and still continues, rendered it necessary to investigate more fully the incidence of albuminuria and possible kidney lesions in the fighting forces, and it was in this connexion that the present investigation was carried out.

The original idea was to examine the urines of large numbers of men before they took part in active operations, and later on to correlate the information gained with the official returns of nephritis obtained from these men. It would thus be ascertained whether or not the majority of the cases ultimately returned as suffering from war nephritis had albuminuria at an earlier period. Such an investigation, though difficult and laborious, was obviously essential if any real light was to be thrown on the etiology of war nephritis, for in each case of nephritis that appeared one was always confronted with the unanswerable question: Has he had some kidney defect previously, and is this merely an exacerbation brought on as the result of the conditions of warfare, or has it arisen *de novo*? In the majority of cases an answer to this question could not be furnished by any clinical observations made on the patient while actually suffering from the disease, for the problem of pre-existent renal trouble is a most difficult one, and in many cases incapable of solution. It is perhaps not sufficiently recognized that renal disease may be present with few or no clinical symptoms, though evidence can often be obtained by careful laboratory investigation. (On the other hand, it is now acknowledged that an acute attack may in a short time result in certain cardiac and other changes strongly suggestive of chronic disease.

If, however, it were found that the great majority of war nephritis cases were suffering from albuminuria when examined at an earlier stage, then one might say with confidence that war nephritis was probably dependent on a pre-existing kidney lesion, which, though perhaps originally slight in degree, yet gave rise to an acute inflammatory process as the result of the necessary exposure and fatigue of the campaign.

The question of the possible relationship of albuminuria to war nephritis was, however, only one of the many points on which it was hoped to obtain much-needed information. Various problems, such as the effect of training, the part played by previous diseases, the influence of age and other factors on albuminuria, were investigated.

In all, 60,000 men were examined. Of these, the first 50,000 were men who had finished their course of training in England and had come to a base in France for a short period—generally nine or ten days—to complete their training before going to the front. Some of these, of course, had been in the line before, and were returning after being wounded or sick, but these constituted only an insignificant proportion of the total. The last 10,000 men were examined at Aldershot, and chiefly represented recruits who had undergone little or no training. They gave practically similar results to the other 50,000.

General Procedure in Examination and Collection of Urine.

In any investigation of albuminuria it is necessary to ensure the collection of specimens under suitable and comparable conditions. The incidence of albuminuria in a group of soldiers is often increased by as much as 100 per cent. or more as the result of a few hours' active exercise, so that a series of samples taken from the same men in the morning and at night would show very marked differences. Specimens should always be taken in the morning, since in this case the results are comparable, and really indicate the minimum incidence of albuminuria in any group of men at a given time. All the urines examined were, therefore, taken early in the morning, and, where possible, consisted of the first specimen passed. Various special arrangements, which need not be detailed here, were necessary to obtain particulars of the men for future identification.

Tests used for Protein and Methods of Grading Urines according to Amount of Albumin.

The testing reagent used in this investigation was salicyl-sulphonic acid. Of all the protein tests this is undoubtedly one of the most reliable and delicate; it is so easily applied that

* Summary of a report to the Committee on War Nephritis of an investigation carried out under the auspices of the Medical Research Committee.

any intelligent orderly can be taught to use it in a very short time, and it gives very accurate results. In the rough preliminary testing, six drops or more of a saturated solution of salicyl-sulphonic acid in distilled water were added to about half an inch of urine in an ordinary test tube. In urines containing a considerable amount of protein a dense white precipitate was at once formed, but any urine giving the faintest opalescence with the reagent was provisionally taken as positive.

In the laboratory the positive specimens were further examined by means of salicyl-sulphonic acid, and, in cases in which any doubt arose, by heat coagulation and by cold nitric acid as well. A rough estimate of the amount of protein present was made, based on the amount of precipitate obtained with salicyl-sulphonic acid. For convenience in tabulating results, six different grades of albuminuria were recorded as A, B, C, D, N, NN; these letters refer roughly to the quantities of albumin indicated in the table.

TABLE I.

Grade.	Rough General Description of Precipitate as given by Salicyl-sulphonic Acid.	Rough Quantitative Estimation of Amount of Protein Present.
A.	Very marked	200 to 300 mg. or more per 100 c.cm.
B.	Marked	80 to 200 mg. per 100 c.cm.
C.	Fairly well marked	20 to 80 mg. per 100 c.cm.
D.	Very distinct	5 mg. or less to 20 mg. per 100 c.cm.
N.	Faint	—
NN.	Faint trace	—

As no exact quantitative estimations were possible, it is obvious that the above grades of albuminuria are only rough general indications of the amount of protein present. In urines marked A, B, and C, the protein reaction was always well marked, and in D it was always quite distinct, so that a definite positive result was obtained by the ordinary tests (heat coagulation and cold nitric acid tests) as well as by salicyl-sulphonic acid. Urines of grade N sometimes gave the heat coagulation test directly, but more often after the addition of salt and of a trace of acid in some cases. In grade NN no definite results were generally obtained either on boiling or by the cold nitric acid test, though salicyl-sulphonic acid gave a definite slight opalescence. It is, of course, possible that not all the urines in the lower grades contained true protein; they are indicated here merely as giving results with salicyl-sulphonic acid.

In short, any urine of grades A, B, C, D contained sufficient protein to give a definite well marked reaction with any of the ordinary protein tests, while grades N and NN did not generally do so unless very carefully examined, and even then, in NN samples, negative results were the rule.

INCIDENCE OF ALBUMINURIA IN 50,000 MEN EXAMINED AT THE BASE.

All the men examined were, of course, marked "Active Service," and at the period of examination were undergoing a fairly strenuous course of training. The investigation took place during the summer months; it began about the end of May and was completed about the beginning of October, 1917.

In certain cases of albuminuria the presence of spermatozoa or pus in the urine indicated at once the probable cause, but it is important to note that in several cases definite epithelial, as well as hyaline, casts were present. It is generally stated that when spermatozoa are found in the urine certain bodies closely resembling hyaline casts are also met with. As these bodies do not come from the kidneys they are of no significance, but it is often very difficult to distinguish between such bodies and the delicate clearer variety of hyaline cast. When epithelial casts are present, however, there can never be any doubt as to their origin. In order to make all allowances for complications of this kind, the total number of men suffering from albuminuria of all varieties was ascertained, and the cases showing any possible cause for the presence of the albumin were noted. The examination of the morning specimens of urine certainly suffers from the disadvantage that spermatozoa are fairly common, but as these bodies are easily found on examination with the microscope, the condition does not give rise to any great difficulty.

The men were examined in groups of 10,000; the various results are recorded in Table II, in which the intensity of the albuminuria is also indicated. It will be seen that the

comparable figures obtained in the different groups agree remarkably well on the whole.

Roughly speaking, the total percentage of albuminuria unaccounted for by any of the conditions already mentioned (pus, spermatozoa, blood, etc.) was found to be about 5 per cent.; of this, only about 2 per cent. represented gross albuminuria of the A, B, C, D grades, while the other 3 per cent. was of the less marked variety.

The actual figures in the 50,000 men were as follows:

Total number with albuminuria...	... = 6.48 per cent.
Number with albuminuria after allowing for pus, spermatozoa, etc. ...	... = 5.62 "
Number with gross albuminuria (A, B, C, D grades) ...	... = 2.55 "
Number with gross albuminuria after allowing for pus, etc. ...	... = 2.19 "

TABLE II.—Showing Incidence of Albuminuria in each of Five Groups of 10,000 Men Examined.

Groups of 10,000 Men.	Percentage of Total Number with Albuminuria.	Percentage with Albuminuria after Allowing for Pus, etc.	Percentage with Gross Albuminuria (A, B, C, D Grades).	Percentage with Gross Albuminuria after Allowing for Pus, etc.	Percentage with Slight Albuminuria (N and NN Grades).	Percentage with Slight Albuminuria after Allowing for Pus, etc.
Group 1 ...	5.88	5.26	1.80	1.63	4.08	3.63
Group 2 ...	6.53	5.81	1.77	1.53	4.76	4.28
Group 3 ...	6.95	5.85	3.02	2.50	3.93	2.35
Group 4 ...	6.27	5.05	2.78	2.23	3.49	2.82
Group 5 ...	6.77	6.16	3.40	3.08	3.37	3.08
Average ...	6.48	5.62	2.55	2.19	3.92	3.23

On account of the large numbers of men examined the results obtained may be taken as a measure of the incidence of albuminuria in the British army during training. Our information regarding the incidence of albuminuria among soldiers in the trenches is very scanty, but, according to Ameuille and MacLeod,¹ appear to be more or less of the same order as was found in the present investigation.

PRESENCE OF CASTS IN ALBUMINOUS URINES.

All the specimens of urine which contained albumin were examined for casts. About 25 c.cm. of urine were centrifuged for a few minutes and the deposit examined under the microscope. As the vessels containing the urine had generally stood for several hours before the examination for casts could take place, most of the solid constituents present were by this time in the lower layers of the urine or on the bottom of the vessel. The upper layer of urine was therefore poured off as carefully as possible, and when only about 30 c.cm. to 40 c.cm. remained, this was shaken up and 25 c.cm. used for centrifuging.

In examining the deposit it was found most convenient to pipette about $\frac{1}{2}$ c.cm. of material from the bottom of the centrifuge glass, and to spread this in a thin layer over the greater part of an ordinary microscope slide. It was then examined quickly with a low power. When necessary, for purposes of identification of casts and their structure, higher powers were employed.

Almost all the casts found were either epithelial or of hyaline nature; very few blood casts were encountered. The epithelial casts varied much in the stage of degeneration presented by the epithelium, but the majority of them showed the usual appearances seen in acute nephritis, where the outline of the individual cell is often fairly distinct. The hyaline casts also comprised many of the ordinary clear ill-defined variety, but a very considerable number were definitely granular in structure, and might be referred to as hyalo-granular casts. All stages of granularity, from many comparatively large well marked particles to a very few small ill-defined granules, were observed, but in all such cases the matrix of the cast presented a definite hyaline appearance.

For statistical purposes the casts were therefore divided roughly into two classes, epithelial and hyaline, and were characterized entirely on the appearance presented by

unstained specimens, since the large number of deposits examined did not permit of a more detailed examination.

In the great majority of cases where epithelial casts were present, hyaline casts were found as well, but in many specimens hyaline casts alone were found. While many authorities believe that the presence of epithelial casts—at any rate, in moderately large numbers—is pathological and indicates some definite lesion of the kidney, it is often supposed that the hyaline variety is of little significance. From what we see, however, in the urines of patients who are suffering from acute nephritis, it is certain that the hyaline variety may in many cases be the only casts present. In such patients, even when the disease is well marked, as indicated by the usual symptoms, it often happens that the urine contains only a few small hyaline casts, while in other cases very large numbers of this variety of cast may be present. On the other hand, it may be quite impossible to find epithelial casts.

The presence of casts was by no means confined to urines exhibiting a high grade of albuminuria, for, in several cases, urines with only a trace of albumin contained large numbers of epithelial casts, while in other cases many hyaline casts were found. Such results are by no means rare in ordinary practice where they are generally associated with a condition of chronic interstitial nephritis. In practically all such cases which the writer has seen in hospital practice the kidneys were found to be markedly defective, as indicated by the diastatic test. In the cases found in soldiers in France, however, the combination of large numbers of casts with mere traces of albumin was not apparently associated with any appreciable degeneration of the renal tissue, for the diastatic reaction was normal in the great majority of the cases in which it was used. The very large numbers of urines dealt with in this investigation precluded the possibility of applying this test to all such urines, but a considerable number were examined. With the exception of a very few cases, the diastatic reaction was between 15 and 25—figures practically identical with those obtained from normal urine.

It is not improbable that casts may sometimes occur in urines which are free from albumin, but it is certain that this is very rare, for in 100 specimens of normal urine examined no casts of any kind were found. This view is further borne out by the fact that the percentage of urines with a very small amount of protein which contained casts was comparatively small; in this connexion it was observed that urines which gave only an exceedingly faint reaction with salicyl-sulphonic acid (certain of the urines of grade NN) rarely contained casts. In no case were epithelial casts found in such specimens, and in the few cases in which hyaline casts were observed the number was usually limited to one or two. In order to settle the question definitely it would, of course, be necessary to examine several thousands of protein free urines, but there was no time for this during the present investigation.

With regard to certain of the urines stated to contain hyaline casts only, it is possible that a few of them might have contained a very small number of epithelial casts as well, but it is certain that this could be the case only in a very few instances, since the examination for casts was carried out very carefully, several specimens of deposit from the same urine being sometimes examined.

Occasionally a few blood casts were found associated with epithelial casts, but the former were of such infrequent occurrence that no special record of them was kept.

Along with casts several other elements were found in the deposits, but nothing abnormal was observed. The extremely common occurrence of calcium oxalate crystals, which at some periods were present in large amount in almost every urine examined, is perhaps worth noting. No explanation of this phenomenon could be found in the nature of the diet partaken of at the particular period.

General Results Obtained.

For the 50,000 men examined, the average percentage of urines found to contain casts was 1.87; of this number 0.84 per cent. had definite epithelial casts, while in 1.03 per cent. hyaline casts only were found. The percentage of casts in the various groups of 10,000 men is indicated in Table III. It will be seen that the figures in the different groups correspond fairly well.

TABLE III.—Percentage of Casts in Five Groups of 10,000 Men each.

	Percentage with Casts.	Percentage with Epithelial Casts.	Percentage with Hyaline Casts.
1st group of 10,000 men	1.60	0.75	0.85
2nd	1.52	0.88	0.64
3rd	2.01	1.00	1.01
4th	2.13	0.9	1.23
5th	2.10	0.65	1.45

As might be expected, the percentage of albuminuric urines containing casts was highest in those cases where the albuminuria was well marked. Thus, in the 50,000 cases, the percentage of albuminous urines of grades A, B, C, D containing casts was 44.6, while of grades N, NN, only 20.3 per cent. had casts.

TABLE IV.—Percentage of Albuminuric Cases showing Casts in Different Grades of Albuminuria.

1st 10,000	Grades A, B, C, D, 50 %	Grades N, NN, 17.1 %
2nd	50.1 %	15.7 %
3rd	37.0 %	22.6 %
4th	46.4 %	24.0 %
5th	39.5 %	22.5 %

Observations on the Amount and Probable Significance of Casts found in Urines.

In certain of the specimens containing casts only very few casts were actually found. Thus, in the case of the epithelial variety, only one or perhaps two were identified in certain urines, while it was fairly common to have urines showing only two or three hyaline casts. As already stated, the significance of the presence of a very small number of hyaline casts is obscure, and the truth probably is that such findings may in certain cases denote definite pathological changes in the kidneys; in other cases they are of little significance. On the other hand, a urine containing albumin, together with epithelial casts in moderate or large numbers, must be regarded with suspicion, and almost certainly denotes, in the great majority of cases, that the renal tissue is the seat of some inflammatory condition which may be progressive in nature and may ultimately lead to well defined renal disease.

From this point of view it was of interest to ascertain the number of cases in the 50,000 men examined which gave urines showing albuminuria and large numbers of casts. Naturally, the figures obtained are liable to considerable variation, since the personal factor plays a great part in estimating what is to be considered as "large numbers" of casts. Probably the best method would be to count the casts in a given number of fields of the microscope, having previously taken the necessary precautions for ensuring approximately accurate results. This, unfortunately, was impossible in the present investigation, as the necessary time could not be afforded. An attempt, however, is made in the following table to indicate as nearly as possible the number of men whose albuminous urines contained casts in sufficient numbers to arouse suspicion. In cases where many hyaline casts were found accompanied by only one or two epithelial, the casts are classified as "hyaline."

TABLE V.—Number of Men in 50,000 Examined whose Albuminous Urines contained large numbers of Epithelial or Hyaline Casts.

Epithelial casts in large amount	271
Hyaline casts in large amount	279
Total with epithelial and hyaline casts in large amount	550
Percentage with epithelial casts in large amount	0.54
Percentage with hyaline casts in large amount	0.56
Total percentage with casts in large amount	1.10

General Results.

From Table V it appears that the total number of men who had albuminuria together with moderate or often large numbers of epithelial or hyaline casts was 550. Of

these, 271 had epithelial casts, while in 279 cases the casts were chiefly of the hyaline or hyalo-granular variety. If the results of the examination of the urine for albumin and casts have any significance, it appears certain that the minimum number of men suffering from definite renal deficiency in the 50,000 cases examined was 550. From this it is probable that the "active service" part of the army contains, during training, at least 1.1 per cent. of men whose kidneys are inefficient and who are suffering from some degree of disease more or less marked.

Since the total number of men suffering from albuminuria accompanied by casts was 936, this number indicates the maximum number of men who gave any indication of kidney disease as the result of examination of the urine. No doubt many of the urines containing only a few hyaline casts were healthy specimens; but, on the other hand, it is exceedingly probable that certain urines containing a few casts were found negative on examination, as it is not always easy to find casts unless they are present in moderate numbers, when there is, of course, little chance of overlooking them. Since, in some of the cases in which casts were apparently absent, the kidneys were probably not quite normal, one may provisionally accept the view that the specimens of urine containing small numbers of hyaline casts, which were not the result of kidney disease, were balanced by the urines from defective kidneys in which no casts were found.

That the renal tissue may be defective and the urine practically free from casts is proved by the fact that cases of acute nephritis may, on convalescence, show neither albumin nor casts, and yet the kidney efficiency as indicated by the diastatic reaction may be very low.

Taking all these points into consideration, we arrive at the conclusion that at least 1.1 per cent. of men on active service are probably suffering from some degree of more or less chronic renal disease, while the maximum number giving any indication of renal deficiency by the ordinary examination is 1.88 per cent.

In round numbers it is possible to state with certainty that not more than 2 per cent. of men give any definite indication of kidney disease, if we allow that kidney disease in general is associated with the presence of albumin and casts in the urine. Fairly definite signs of disease are found in about 1 per cent. of men.

As practically all the men examined had a minimum of four months' training and the great majority of them had over twelve months, it would appear that the presence of albumin and casts in the urine is no indication that the individual is incapable of severe and prolonged exertion.

RELATION OF LENGTH OF SERVICE TO INCIDENCE OF ALBUMINURIA AND OF CASTS.

One of the most important features of the present investigation was to ascertain whether or not the general conditions associated with training for active service tended to have a detrimental effect on kidney efficiency as indicated by the ordinary examination. It is almost certain that any appreciably injurious effect on the renal system brought about by training would be indicated by an increase in albuminuria, if not in the incidence of casts as well. The longer the soldier had been in training the greater should be the amount of albumin found. The importance of ascertaining definitely the effects of training is obvious, since we have here the total result of many factors, such as exposure, severe exercise, food, etc. If it were found that albuminuria steadily increased with the length of service, it would be necessary to analyse these different factors and find out, if possible, the particular cause of the condition.

Fortunately, the problem of the relation of training to kidney efficiency no longer presents any difficulty. Training has no influence whatever either in increasing albuminuria or in causing existing albuminuria to become more marked. Further, the incidence of casts does not increase with length of training. The evidence on which these statements are based is supplied in Table VI.

The men examined were Number 3, 4, and 5 groups already referred to, each group consisting of 10,000 men. No account was taken of men with less than three months' service, since the numbers in this category were too small to be of any importance. Owing to this cause, and the fact that it was impossible, in a very few cases, to ascertain the exact period of service, the actual numbers indicated in each group always fall a little short of 10,000. The total number of men actually examined in this investigation on the effect of training amounted

to 29,607. For each group of approximately 10,000 men the total period of service up to thirty three months is given. Those with a longer period of service than thirty-three months are grouped together, while, as already stated, the few with two months or under are omitted. The total amount of albumin, as well as the incidence of well marked albumin and of casts, is given for each period.

Reference to Table VI shows that the average number per 1,000 suffering from albuminuria in men of from three to five months' service was 69. For each successive period of five months the numbers are exceedingly close, being 69, 71, 68, 73, 62, and 61 per 1,000.

There is neither an increase nor appreciable decrease of total albuminuria with length of training, but the incidence remains practically constant. This would seem to show that training plays no part in the etiology of this albuminuria, and the probability is that the same incidence exists in civil life.

It might be argued, however, that an increase in the total albuminuria might not be expected, since the kidneys which were susceptible to the conditions under discussion would have been already injured in the first two months of training before the men came to France. It might also be argued that kidneys which were not affected in the early period of training were not susceptible, and were sufficiently resistant to withstand any injurious factors associated with training.

On this hypothesis an increase in the total albuminuria would not be expected; but, on the other hand, an increase in the severity of the albuminuria in cases already affected would certainly be looked for. The severity of the albuminuria, however, does not increase. Taking the grades A, B, C, D as indicating well marked albuminuria, the average numbers exhibiting this degree of albuminuria in successive periods of five months' training are 34, 31, 30, 31, 36, 35, and 29 per 1,000. Here again there is neither increase nor decrease, but a constant incidence.

Apparently, service conditions neither originate albuminuria to any appreciable extent nor do they aggravate already existing albuminuria.

Further, the number of urines containing casts remains practically constant during training, the figures for successive periods of five months being 24, 27, 29, 20, 31, 22, and 22 per 1,000.

These results give a final answer to the question of the effect of severe conditions as seen during training on the incidence of albuminuria and of casts.

It appears fairly certain that training is not responsible for the production of any injurious renal effects, for if training entailed conditions actually detrimental to the kidney, one would at least expect some increase in the severity of pre-existing albuminuria.

No doubt, after severe and sudden exertion protein does appear in the urine, but it seems to be a merely transitory phenomenon which soon disappears on resting; it does not appear to exhibit any tendency to become permanent even after thirty-six months or more of training. Pre-existing albuminuria also may be aggravated after severe exercise, but the fact that severe albuminuria is not more common

TABLE VI.—Incidence of Total Albuminuria, Well Marked Albuminuria (A, B, C, D grades), and of Casts in Three Groups of Men at Different Periods of Training.

(Total number of men investigated = 29,607.)

Period of Training in Months, Inclusive.	No. of Men.	Total Albuminuria.				Well Marked Albuminuria.				Casts.			
		Average per 1,000.				Average per 1,000.				Average per 1,000.			
		Group 1.	Group 2.	Group 3.	Average.	Group 1.	Group 2.	Group 3.	Average.	Group 1.	Group 2.	Group 3.	Average.
3 to 7 ...	4,820	62	63	79	69	27	33	43	34	13	17	43	24
8 to 12 ...	4,121	85	57	66	69	34	30	30	31	31	20	30	27
13 to 17 ...	3,743	82	62	69	71	26	27	37	30	27	23	37	29
18 to 22 ...	3,175	78	61	61	68	38	24	31	31	16	14	31	20
23 to 27 ...	2,871	60	61	61	73	30	39	40	36	20	31	40	31
28 to 32 ...	2,660	60	58	51	62	38	37	32	35	14	22	32	22
33 and over	8,215	61	61	61	61	26	28	30	29	18	19	30	22

after thirty-six months' service than it is after three months, indicates that in these cases as well this increase is transitory; on resting, the albuminuria soon returns to its old level.

Results of Investigation into the Possible Relationship of Previously Existing Albuminuria to War Nephritis.

Out of the 50,000 men examined only 161 cases were returned up to March, 1918, as possibly suffering from nephritis. In 29 of these the diagnosis was doubtful, as they were returned as suffering from "albuminuria." In the remaining 132 a diagnosis of nephritis was ultimately obtained in all cases, though in several of these the preliminary diagnosis was also "albuminuria"; in these patients, however, the diagnosis at the base hospitals was "nephritis." It is therefore fairly certain that at least 132 cases of definite nephritis were returned from among the group of 50,000 men previously examined for albumin. As certain of the other 29 cases were also, probably, suffering from nephritis, the total 161 cases may be taken as the maximum number of individuals who developed nephritis within nine months after being examined at the base. It makes little or no difference to the ultimate result whether or not a few of these were erroneously diagnosed. Indeed, there is no reason to suspect that in the great majority of cases there was any doubt as to diagnosis, but, in any case, this factor could not possibly be of sufficient importance to make any real difference to the conclusions based on the returns.

Out of the 161 patients returned as nephritis or albuminuria, only 28 suffered from albuminuria just before going to the front. Of these, 7 had epithelial and hyaline casts, while 8 had hyaline casts only. The exact results obtained together with the grade of albuminuria found, are given in Table VII.

TABLE VII.

Total number of men returned as nephritis or albuminuria	161
Number free from albuminuria when previously examined at base	133
Number with albuminuria when previously examined at base	28
Grade of albuminuria in the 28 positive cases:	
Grade A	2
Grade B	2
Grade C	1
Grade D	6
Grade N	7
Grade NN	10
Total number with casts	15

Thus, out of the total 161 returns only 17.4 per cent. had albuminuria when examined a few months before they developed nephritis, while only 9.3 had both protein and casts.

Out of the 29 cases returned as "albuminuria," 20 were free from protein when previously examined at the base. Nine had albuminuria, 4 of these having definite epithelial and hyaline casts, while one showed hyaline casts only. The grade of albuminuria in these cases was as follows:

A=0. B=1. C=1. D=0. N=3. NN=4.

From these results it is fairly certain that some of these cases at least were suffering from nephritis though returned as "albuminuria."

Taking all these results together, it is now proved that the great majority of the cases that return from the front area as war nephritis do not show albuminuria a few months before contracting the disease. It would therefore seem that previous albuminuria plays little or no part in the etiology of war nephritis. The disease arises *de novo*, and is not an aggravation of some pre-existing kidney defect the presence of which can be ascertained by any of the ordinary methods of examination.

REFERENCE.

¹ *Lancet*, September 9th, 1916.

THE POLICY OF THE OSTRICH.

BY

COLONEL J. G. ADAMI, F.R.S.,

OFFICE OF D.G.M.S., OVERSEAS MILITARY FORCES OF CANADA.

ON New Year's Day I was sitting after lunch with an old friend, in London for the war, who before he joined up enlivened his work as lawyer and financial adviser with an occasional incursion into literature. The afternoon he told me, was his; the Government department which had been so fortunate as to secure his services was being demobilized. Asking him what he proposed to do next, "I am thinking," he said, "of retiring to some quiet spot and putting together a collection of essays upon the 'Dead Hand.' Returning to the Old Country after all these years, more and more each day there is being borne in upon me the extent to which the dead hand of tradition and

customary point of view presses upon society and represses logical and needed advance in every direction." And forthwith he launched upon a succession of modern instances.

PHYSIOLOGY AND SOCIAL DUTY.

I could not wholly follow him when he touched upon sexual relationships: with him I had to admit that physiologically the human male is intended to be polygamous, whereas the social code demands that he be monogamous. But his deductions that therefore the social code was wrong, and that we should acknowledge and admit polygamy, failed, as I pointed out to him, to take into consideration the fact that the family constitutes the unit of society, our whole social and moral code being erected upon that foundation. Polygamy, I continued, has in the past been tried and found wanting, and to-day the Mohammedan nations which give a legal sanction to polygamy are nevertheless in general reverting to monogamy; the social environment of man to-day appears to demand that he be the husband of one wife. The real difficulty lay, not in society, but in the fact that man has not yet become physiologically adapted to his social state: the good of the family indicates one course of conduct, man's constitution impels to another. It is an evidence of progress that, as a community, we place the benefit of the family before the desires and comfort of the individual; but doing this, we are placed in the dilemma that the performance of physiological function, save under the aegis of monogamic marriage, becomes regarded as anti-social, and that an act which the individual in his heart of hearts knows to be in itself natural and desirable has to be regarded and taught to be contrary to good morals. We find ourselves torn asunder between Peter and Paul: the Peter that is within us teaching that what God has given us is clean and to be enjoyed; the Paul, that woman is a snare, and that even a bishop should have but one wife—and scarcely that. And as youth is largely irresponsible, and the sense of social duty is a plant of slow growth, which in some is throughout life choked by the weeds of personal predilection, it has followed that the whole matter of sexual conduct has for generations been surrounded with an atmosphere of insincerity, not to say hypocrisy. We give lip service to public duty; the majority of us strive to uphold the social law, but I imagine that even the best of us, be it in thought, word, or deed, cannot as men wholly throughout our lives escape from the dominance of our natural passions—that is, if we are real men, healthy and virile.

It is the knowledge of this insincerity, which in the past has permeated the whole treatment of the matter, that makes it so difficult for most of us to take up the public discussion. In its incapacity to reconcile the physiological and the moral aspects of the subject, the British public and its leaders have sought the solution of silence—of proceeding as though the problem did not exist; they have written themselves down—ostriches. Here it is that the "dead hand" comes in—the dead hand of a training begun in early childhood, whereby we have been taught to regard the open discussion of sexual matters as "taboo"; the "dead hand" of school-boy "form," according to which public acknowledgement of one's standing in relationship to moral matters, save on the part of those who have donned the cloth and become professional moralists, brands one as either a prig or a humbug.

Happily we are passing out of this phase. The work of the Royal Commission on Venereal Disease, and now the forcible and courageous pronouncement regarding syphilis made recently by the *Times* heralds the ending of the old régime of silence, concealment, and taboo.

VENEREAL DISEASE IN THE ARMY.

What this policy, this submission to the dead hand of custom, has cost the army and the country during the last four years is awful to contemplate.

For our salvation as a nation and an empire we have needed the services of every available man—have needed them at the height of their physical capacity. Time and again during the last four years, owing to our want of man power, it has seemed that the greater concentration of the enemy forces must result in a break through our lines and bring ruin to us. Even without such a break our losses in man power have been large, and to-day it is the Al men who have survived whom we most need to be the father

of sound and fertile families if the country is to maintain its ascendancy in industry and influence—those men we need sound and not infected.

But what has actually happened? Year by year before the war the annual report of the Director-General warned the Government as to the prevalence of venereal disease in the army; a quarter of all admissions to hospital was due to this. No other conditions in peace time competed with the venereal diseases in lowering the efficiency of our soldiers, and it was a commonplace of military knowledge that in war time the prevalence and the loss of efficiency from this cause had in the past undergone a rapid increase. Lord Kitchener, it is true, in a notable communication addressed to the soldiers of the little old army, asked them to respect the womankind of our allies, but not a step was taken to protect our men at home. With camps being created all over the country, no steps were taken to render the regulations against harlotry more rigid. Our men have throughout the war been in venereal hospitals, not by companies, but by battalions. Each case has meant two months or so on the sick list, and weeks and months before the individual has been restored to full vigour at the front, if, indeed, there has not been left a legacy of rheumatism, eye disease, or general enfeeblement.

THE ROYAL COMMISSION AND THE NATIONAL COUNCIL.

The policy of the ostrich was maintained. Before the war the Government had appointed a Royal Commission upon Venereal Disease, and having done this appeared to think that it had more than done its duty. But the report of that Commission had little to do with war and the soldier. Do not misunderstand me: the National Council for Combating Venereal Diseases accomplished a notable work in strengthening the hands of the Royal Commission. The Royal Commission performed a service of the first order, and the Government did well in acting immediately upon the report; but the report and the Act did not contemplate war conditions and the soldier. This I know, that when in the autumn of 1914 the first Canadian contingent arrived upon Salisbury Plain it very rapidly found that the common law of England and military law were equally impotent to cope with the condition of affairs revealed. Here again do not misunderstand me. I do not mean to suggest that whatever the good women at home may have thought regarding the virtue of their sons and the vice of the British harlot, the Canadian soldier was either better or worse than the British, or the Australian or the New Zealand soldier. Let me be perfectly frank. We have as a matter of fact discovered that of the cases of venereal disease among Canadian soldiers admitted to hospital in England when new drafts were being periodically received from across the Atlantic, as high a proportion as 25 per cent. of all admissions were of active infection acquired in Canada—were admissions from the new drafts. But what I mean is that the heads of the Canadian service here in England were responsible to the Canadian people for preserving the health of their men; they were responsible to the mothers of Canada. To their surprise they found that harlotry in England is a protected profession—but not controlled. Here again let me be quite open. We have the same situation in Canada, the same policy of silence and tacit sanction by the police. But we are waking up, and the reports of the Commission of Conservation upon conditions in Toronto, and of the Committee of Sixteen upon vice in Montreal, have profoundly moved all sections of society. But in England in war time, I confess, that the Canadian authorities expected immediate and willing help from the local and London authorities, and help there was little. Each week-end there poured into Salisbury from London from eighty to one hundred loose women; the railway company was impotent to prevent them journeying; the police at Salisbury could not turn them out of the town; the Wiltshire magistrates could or would do nothing; at most the military police could declare houses of ill fame within the actual camp area out of bounds, and turn women out of the camps proper. It took the better part of two years before the Government utilized the powers granted by the Defence of the Realm Act, and in one special military area where there had been a large outbreak of venereal disease, empowered the competent naval or military authority to transport out of the area those directly or indirectly concerned in the profession of prosti-

tution. In the meantime all that that most admirable association, the National Council for Combating Venereal Diseases, could suggest was—talk; the provision of lectures and the instruction of the soldier—this along with the provision of opportunities for recreation. I believe that I am correct in saying that it took them the better part of three years before they openly recommended their lecturers to advise early preventive treatment after the act, so heavily did the dead hand of Mrs. Grundy press upon them.

I shall never forget my attendance along with my chief at a meeting of that society in 1916. Perhaps some of you have heard the story of how, at the beginning of last century, grave accounts reached Edinburgh regarding the drunkenness of the further Highlands, and of how the General Assembly determined that it was their duty to send north a missionary to preach temperance. And the missionary went, and in due time returned and appeared before the Assembly. Said he, "I have had gran' success!" Said the Moderator, "What mean you by gran' success?" "Weel," replied the missionary, "ye must know that I found the scetuation simply awfu"; but I wrastled with the pair misguidit folk, and as a result of me meenestrations they have sworn to ameliorate their habits, and no' to tak' mair than one dram of whisky before breakfast the morn." The worthy chairman at this meeting—now no longer with us—told in all seriousness the anxiety and trouble that men of the great Canadian camps of 50,000 soldiers and more in the South of England had given the Council; how they had wrestled with the difficulty; how they had wanted to put the Defence of the Realm Act into force, but feared that action against their frailer sisters would rouse the suffragettes into militancy; how for months they had appealed to the mayor and town council of the near-by town to take action, but without success until now, when he had the glad news to impart that finally they had prevailed upon the borough magnates, and a new era was opening; the mayor and council had consented to appoint two women policemen—two women policemen to protect the morals of an army of 50,000 men and more, by influencing for good the harpies that preyed upon them! Nor shall I forget the just impatience of my chief on that occasion, and how he fluttered the serenity of that meeting, how he put it to the Council that here in the greatest of world wars, dealing with the greatest of army plagues, for the last two years they had been nibbling at the fringe of the subject, talking and talking but accomplishing nothing fundamental; how London is the great centre of prostitution, the hot-bed in venereal infections for both officers and men of other ranks on leave; but the Council proceeded as though London conditions did not exist; how at that moment, but a few yards away from the meeting, enter one of the music halls and they would find the promenade packed with prostitutes, openly soliciting. Whether his words had the effect I cannot say, but within a week the public-spirited manager of the Empire answered that his promenade henceforth would be closed to women, and the other music halls followed suit.

THE AMERICAN ATTITUDE.

Now I am convinced that this policy of frank dealing and open speaking is the only one that will improve conditions. Thus, had the medical profession in the first place, the National Council, and the Government spoken out at the beginning of the war, the well-being and happiness of the country and the condition of our troops would to-day have been very different from what it is. Even at this late date I would beg the National Council to influence the Government to publish a statement regarding the venereal situation in the army in successive years of the war, in the different regions—at home, in France, Mesopotamia, and the like—so that the country knows the extent of the trouble as it affects the army, and, simultaneously, to obtain powers to make an investigation in selected areas or classes of the population into the frequency of either syphilis or venereal disease in general in those areas or classes. Let the situation be known and faced. I am convinced that the upholders of the policy of bated breath—the ostrich policy—once they begin to think over the matter, must recognize the unreasonableness of their attitude and that their opposition is not to be feared even by the politician anxious for votes. Of this I am convinced from experience. For notice: Mrs. Grundy and the

prudes are far more in evidence in the United States than in this country. We, for example, have never condescended to speak of "roosters," or thought it improper to mention the lower extremities by their Anglo-Saxon name or draped the anterior continuations of the piano. But this notwithstanding, the surgeon-general at Washington did not hesitate in 1912—before the beginning of the war—to publish in his routine orders outspoken regulations directing all soldiers returning to camp to state whether they had exposed themselves to the possibility of venereal infection, and detailing the early preventive treatment to be given to those who had been exposed. I may say that I studied the American treatment at Washington in the spring of 1915, and reported upon it to the War Office, but the "dead hand" prevented its adoption for close upon two years. If this could be accomplished in the States in times of peace, we in this country need not have feared to adopt it in time of war.

When the States actually came into the war, the whole country took up the matter. The Secretary of the Navy, for example, did not hesitate to announce: "To-day, as never before, American manhood must be clean and fit. America stands in need of every ounce of her strength. We must cut out the cancer of disease if we would live." The Secretary of the Army was equally direct. General Pershing, as Commander-in-Chief, has made it one of his army regulations that the venereal status of a unit shall be filed with the other papers of the officer commanding each unit, and shall be taken into account in determining the promotion of the officer. To quote Major Haggard, President of the Southern Surgical Association: "The inevitable pestilence is being fought with every imaginable agency—education, recreation, diversion, protection, isolation, prophylaxis, penalties, and court-martial. Many thousands of young men will for the first time be taught the whole truth by all sorts of real men. . . . After the war the idea will permeate all strata of society and be a real understandable and liveable benefaction. It will disseminate through America the practice of personal hygiene by uncounted numbers of young men. The beneficial results to accrue to us and to posterity will almost make the war worth while." But Colonel Hugh Young of the United States army is with us, the well known head of the genito-urinary department at Johns Hopkins Hospital, America's foremost authority on venereal disease, and with him Colonel Snow, in charge of propaganda, largely responsible for the administration of antiveneral measures overseas. They will put before us what has been accomplished and how. Thanks to Colonel Waley, and with the permission of the Commander-in-Chief, they have come from France to attend this conference.

ACTION OF OVERSEAS FORCES OF CANADA.

With their important communications in view, I will be brief regarding the methods in vogue in the overseas military forces of Canada. I have already indicated the difficulties in our way, due to want of active co-operation on the part of the civil authorities in Great Britain. In practice we have found that there is no one procedure which is effective in arresting venereal disease in the army; it is necessary to employ a combination; the Director-General has put into force all the methods save court-martial mentioned by Major Haggard—education, warning, recreation, diversion, protection, isolation, prophylaxis, and penalties. Let us emphasize the main points of our action. One of our leading Canadian hygienists, Colonel Amyot, professor of hygiene in the University of Toronto, has been attached by the Director-General to this office and given special charge of the venereal situation, with a keen worker under him—Captain Gibbs, C.A.M.C.—whose whole time is devoted to investigation and propaganda work.

Inspection.—Emergency inspections are held once every week. By emergency is meant unheralded.

Education.—On joining up, on arrival in England, and periodically throughout his service the soldier is instructed regarding personal hygiene, the need to the nation of personal efficiency, the value of continence, the dangers to himself, to his future family, to those around him of venereal infection; the mode of infection; the nature of gonorrhoea, syphilis and chancreoid, and their results. That the instruction may be given in proper form, and nothing essential be overlooked, a syllabus of five lectures

on the prevention of communicable diseases has been issued from the office of the D.G.M.S. to every medical officer of units in England, the course to be delivered to officers, N.C.O.'s and men in definite groups each week until the course is finished. The men are instructed frankly that intercourse with the other sex is not essential to health: that to expose themselves to the danger of venereal infection and become infected is knowingly to acquire a self-inflicted wound which, as much as any other self-inflicted wound, should render them liable to court-martial. If despite these warnings the temptation to intercourse is too great, then for the good of the service it is the duty of each man to protect himself. He is instructed how this may be done—namely, more, is told that, in their own interests and his, the army authorities provide him with calomel ointment for prophylactic use; and lastly, he is instructed to report for treatment as soon as possible after the act.

Early Treatment.

Every Canadian orderly medical room in England is an early treatment centre where night and day there is present a trained N.C.O. to supervise and see that the soldier carries out fully the instructions given. These instructions, in clear language and clear type are set forth on the walls. Whenever one of the trained N.C.O.'s seeks or is given transfer to other duties his successor is appointed a week in advance so that before taking over the duties he may be thoroughly informed.

For those on leave in London there are open day and night two early treatment centres—at Southampton Street and at Victoria. For those "exposed" another treatment is demanded on their return to their units. Men are further instructed that if not in the neighbourhood of a Canadian centre they are to go to an Australian or New Zealand centre. As a matter of fact the Dominions are working together and are appointing centres in the large cities of the United Kingdom open to men from all the Dominions. In Paris there is another Canadian centre freely open to soldiers of all imperial forces on leave in that city.

Here it deserves note that, contrary to the optimistic statement contained in a recent leading article in the *Times*, the Canadian authorities in their talks to the men on parade make a point of emphasizing that neither prophylactic nor early treatment assures absolute immunity to venereal infection. The men are warned that this is not the case. Our experience has shown that even under expert supervision neither the one nor the other procedure is free from occasional failure. In this connexion the Canadian authorities are at one with Mr. E. B. Turner in his letter to the *BRITISH MEDICAL JOURNAL* of January 4th. They firmly believe that if the army and the populace in general be advised that absolute deterrents exist when this is not the case there is a possible danger of their employment leading not to diminution but positive increase in the spread of the venereal diseases. This, I understand, has actually happened in Germany. We had, it is true, no official statistics to bring forward in this matter, because for the good of the service and to encourage the men to apply for treatment at the orderly room, no names are taken.

Penalties.

By an Order in Council issued in 1916 the Governor-General directed that half the pay of soldiers found suffering from acute venereal disease should be docked so long as they remained on the sick list, and this is strictly observed while during convalescence the men are given fatigue duties. Add to this the venereal record is inserted on the medical history sheet and accompanies the man throughout his army career.

Treatment.

This is not a medical lecture, so I shall not enter into the details of the treatment given at our two Canadian special venereal hospitals, full of interest as they are for the expert. I would only point out that at both of these hospitals from the first possible moment the men, instead of being treated as being in Coventry and as depraved characters, are treated as human beings. I have it from one of our chaplains that as a body he found them the best, brightest, and most attractive lot of fellows he had come across in the army and that he treated them as such. As part of their treatment they are kept diverted; football

baseball, and other teams are a feature of the camps, and there is keen rivalry between the teams from the different wards. Contrary to the generally accepted view that acute gonorrhoea is best treated by avoidance of exercise, the experience of the special hospital in Witley camp has shown that physical training, by keeping the men busy and diverted, very materially shortens the period of hospitalization. The effects obtained were so good that in the report of his inspection Major-General F. Howard, Inspector of Infantry, recommended that the Witley methods be employed at all military venereal hospitals, as so materially shortening the period of disablement and so effectively training the men.

Results.

Lastly, as to the results. I will only trouble you with one set of statistics, but that, I think, shows eloquently the effect of the campaign undertaken by the Director-General through Lieut.-Colonel Amyot and his staff.

During the month of September, 1916, from among 42,000 Canadian troops in Great Britain there were admitted to hospital suffering from venereal diseases 960 cases; during the month of September, 1918, from among 110,000 Canadians in Great Britain there were 750 similar admissions. In two years the venereal incidence has been reduced more than 66 per cent.; it stands now at less than one-third of what it did two years ago. Had they continued at the same rate, the admissions during the month in September, 1918, would have been, not 750, but over 2,500—not seven and a half companies, but two battalions and a half, out of action.

THE DANGER DURING DEMOBILIZATION.

Inevitably during this period of armistice, with beginning demobilization, we are dreading a most serious and sinister increase in venereal disease throughout the country as the result of the return of the soldier; dreading its effect upon the family. I know that the agitation has already begun in Canada; that there it has been urged that no soldier suffering from gonorrhoea or from syphilis shall be permitted to return to the Dominion, but that such shall be kept here in England in hospital until wholly cured—an impossible recommendation, seeing that cases of chronic gleet and some cases of tertiary syphilis so far fail to react to any known form of treatment. What is suggested, therefore, is that a certain percentage of Canadian soldiers be kept in hospital in England for the term of their natural life.

It is not the civil population that has to fear the soldier, but the soldier the civil population. Throughout this war the soldier has been well cared for. All means have been employed to diagnose venereal disease at its very onset, and to give hospital treatment immediately. It is then that disease is most easily controlled. Every soldier has been warned time and again of the dangers he runs, has been instructed as to personal hygiene, and has been afforded early treatment under supervision. As a result there is no section of the community which at the present time is in a cleaner and healthier state; no section of the community which has less venereal disease. I speak here for the whole body of the imperial forces. As for our Canadian experience, I may say that last autumn the instruction was given that all soldiers returning to Canada whose medical history sheets bore the record of venereal disease should be given the Wassermann test. I have the August figures, showing that 2 per cent. of the total number returning reacted, and all these were tertiary non-infective cases, for no active primary or secondary cases are permitted to return. The average number of reactions in the civil population is estimated at from 8 to 12 per cent. There is thus four to six times as much syphilis in the civil population as in the army. But in the meantime nothing of any moment has been accomplished for the civil population. Lord Sydenham, in his letter to the *Times* of yesterday morning, speaks of the provision of early treatment centres. "We are endeavouring," he says, "to secure the organization of clinics continuously available where early treatment by competent persons can be obtained." But they are not available to-day; they will not at the present rate be available until demobilization has become a matter of history. To meet the situation they should be scattered thickly all over the country. No man will take a two hours'

journey after the act in order to obtain treatment. The dearth of expert syphilologists and of bacteriologists qualified to carry out the Wassermann and other complement fixation tests demands that the centres for ordinary venereal diagnosis and treatment under the Act be few and far between, situated in the great centres of population. It is thus the civil population that to-day constitutes the grave danger. And as all these four years nothing has been done to meet the emergency, when our soldiers return, and are feasted and made drunk, and are solicited and fall, there will be no medical orderly room to proceed to, no provision of early treatment, no N.C.O. to see that the elaborate toilet is duly performed. Provision for early treatment will be non-existent.

Let me repeat: The soldier will receive and not give; and speaking as a soldier and for the soldier, with full recognition of the strength and the seriousness of the argument put forward by Mr. Turner and Lord Sydenham, and admitting that the provision of prophylactic treatment to an uninstructed public may well result in the spread rather than the reduction of venereal disease, I am strongly of opinion that the soldier before demobilization should be provided with the means of prophylactic treatment, should be advised how to obtain the same without difficulty, and moreover, be given precise instructions as to the method of employment. For the good of the country I see no other possible course.

I have spoken frankly. I have here taken a position that upon first consideration may not receive the unqualified support of those others who, like myself, realize the vast harm done to the manhood and womanhood of our people, the hideous heritage of disease to this and coming generations, where, indeed, there does not result sterility or the dead or diseased untimely fruit of the womb—the appalling loss of man power that results. But to those who in the supposed interest of morality would still maintain the policy of silence and accuse me of propounding an immoral if not immoral policy, I would only repeat what I said at Westminster in July to the National Conference upon Maternal and Infant Welfare: "Which is the more immoral act—to advise a man how to prevent infection if he has transgressed the moral code, or calmly and coldly to look on without moving a finger, while, through ignorance on his part, the innocent wife and children are made diseased, and they and the community suffer through generations?"

And as to this vital problem of the provision of prophylactic or early treatment respectively, which to-day is so stirring us, I cannot recognize any logical intermediary position between regarding as a leper outside the pale of society the man or the woman who has become infected, and approving of treatment before the act. We cannot take the first position, and decide that as the man makes his bed so he must lie upon it, and that because his wife also occupies the bed, and she must be protected. But if we therefore are compelled to treat the disease, the earlier we treat it the surer we are of controlling it; infection begins from the moment the infecting agents begin their action upon the tissues; it is ridiculous to wait until they have set up lesions recognizable to the naked eye. If it is justifiable to treat the developed disease, it is yet more justifiable to afford early treatment; and if that, then for security to make it the rule that after every illicit intercourse the man seeks protection. To direct, as did certain memorable instructions, that treatment must be given in the presence of a bacteriologist after the gonococcus or the spirochaetes have been obtained from the organs of generation and recognized under the microscope, is what across the Atlantic is termed "eye wash." And if, as the writer to the *Times* on New Year's Day put it, the critical hour is 11 p.m., and treatment may justifiably be given at 11.15, what objection can be raised to giving it at 10.45? The doctrine that "the sinner must not prepare for immorality, but he may use the best means known to science to escape the consequences"—such a doctrine surely, if not hypercritical, is hypocritical.

But we are not a logical people, and the probabilities are that we will end in some illogical compromise. Yet unless something be done, and that immediately, the next few months will see such a spread of venereal disease in the country that for generations the empire will suffer. Now, if ever, it is well to repeat His Majesty's famous exhortation, "Wake up, England!"

RECENT EXPERIMENTS ON THE LIFE-HISTORY OF *ASCARIS LUMBRICOIDES*.

BY

F. H. STEWART, MAJOR I.M.S.

RANSOM and FOSTER have published a preliminary account of experiments on this subject, in the *Journal of Agricultural Research* of November 19th, 1917. They found that a repetition of my experiments on the feeding of rats and mice with ripe ascaris eggs gave results agreeing very closely with those recorded by me in the *BRITISH MEDICAL JOURNAL* of July 1st, October 7th and December 2nd, 1916, and in *Parasitology* of February, 1917. In addition to these experiments they made further attempts to infect pigs with *Ascaris suilla*, but with negative results. Their experiments were conducted on pigs several months old, and they suggest that the failure of these and of other experiments may have been due to the animals employed being past the age of greatest susceptibility to infection. It may be well to explain that in this experimental work the pig may be substituted for man, and that any facts proved regarding the development of *Ascaris suilla* in the pig may be assumed to hold true for the development of *Ascaris lumbricoides* in man.

In an experiment conducted in September, 1917, ripe eggs were administered to a pig two weeks old. This animal died seven days thereafter, and ascaris larvae measuring from 0.7 to 1.2 mm. were found in the lungs, trachea and pharynx. This experiment agrees with those published by me in the *Indian Medical Gazette* of August, 1917, and in *Parasitology* of January, 1918.¹

Ransom and Foster also found an ascaris larva in a fragment of the lung of a pig aged six weeks that had died from unknown causes, and in the intestine of which they also found numerous immature ascarids, the largest about 50 mm. in length. They state that guinea-pigs are susceptible to pulmonary infection with ascaris larvae.

Summing up our present knowledge of the larval development of this worm, it has now been established that the ripe eggs of ascaris will hatch in the intestine of man, the pig, rat, mouse, and guinea-pig, that the larvae enter the blood stream of the host, pass through the liver and heart to the lungs, there migrate from the capillaries into the alveoli, and thence through the bronchi and trachea to the pharynx. They reach the lungs and trachea between the sixth and eighth days after infection. Further, in the mouse the larvae then migrate down the alimentary canal and are passed alive but not active in the faeces from the tenth to the sixteenth day.

I have recently been able to perform three additional experiments on young pigs. Two of these, A and B, were four days old at the commencement of the experiment, the third, C, was aged two months and ten days. To both A and B a dose of about 22,000 ripe eggs of *Ascaris suilla* was administered, to C about 50,000. The embryos in these eggs were moving actively, and the cultures were tested on rats and proved infective, larvae being subsequently found in the lungs. A and B suffered from ascaris pneumonia on the eighth day after infection; C showed no sign of pulmonary trouble.

Pig A was killed on the fourteenth day, and young forms of ascaris, measuring between 2.5 and 3.8 mm., were found in great number in the small intestine and caecum. Their heads had lost the appearance of the larval head and had taken on the adult head character. Pig B was killed on the nineteenth day, and although there can be no doubt that on the eighth day the lungs contained thousands of active larvae, not a single worm was found in the stomach, small intestine, caecum, or colon. The nature of the faeces found in the colon proved that the pig was not suffering from diarrhoea due to excessive infection, which might have accounted for the disappearance of the worms. Pig C was killed thirty-one days after infection, and again no worms were found in the intestine.

These experiments are puzzling. In the case of A the increase in size of the worms to 3.8 mm., when the largest larva found in the intestine of mice measures 2.37 mm. and in the lung of the pig 1.5 mm., and the assumption of the adult head character amount almost to proof of the theory of direct development without an intermediate host. The disappearance of the worms in B five days later may or may not have been accidental. Further experiments

are required on direct infection and on the possibility of the infection of the definitive host by the larvae passed in the faeces of mice.

Pulmonary Ascariasis in Man.

Lutz,² in recording the experiment performed in Brazil in 1887, in which he administered ascaris eggs to a woman aged 32, states that the woman suffered during the first few days from acid dyspepsia, followed by unusually severe bronchitis, with slight remittent fever. This confirms the observation of Mosler,³ and proves that the passage of the larvae through the lungs, even of adult man, may give rise to pulmonary symptoms. Thirty-five worms were passed by this woman under anthelmintic treatment, and about ninety-six eggs had been administered to her in doses of about twelve at a time throughout the course of a month.

My thanks are due to Dr. Keatinge, Director of the School of Medicine, Cairo; to Mr. Branch, Chief Veterinary Inspector to the Egyptian Ministry of the Interior; and to Mr. Casdagli, for the means of carrying out the above experiments.

REFERENCES.

¹ *BRITISH MEDICAL JOURNAL*, 1918, i, p. 266. ² *Centralbl. f. Bakt. und Parasitol.*, 1888, p. 425. ³ *Lenckart, Menschliche Parasiten*, II, pt. 1, p. 222.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LUMBAR PUNCTURE IN ECLAMPSIA.

I do not know to what extent lumbar puncture has been tried in cases of eclampsia, but a note on a case in which I used it with apparently satisfactory results in Belfast Union Maternity Hospital may be of interest.

The patient, a primipara, had had fourteen fits, which were increasing in severity, the first being six hours before puncture. She was comatose between the fits. Eighty cubic centimetres of cerebro-spinal fluid were withdrawn, the puncture being made above the last lumbar vertebra. Subsequently she had five fits, decreasing in severity. The puncture was performed at 1.30 p.m., and she spoke a few words in reply to a question about 6 p.m., and drank a little during the evening. The last fit was about 7 p.m. Natural dilatation was waited for, a little chloroform was given, and forceps were used for final delivery, which took place eighteen hours after the puncture. The fetus was stillborn; it had evidently been dead for some time, the cord being green. The albumin disappeared from the urine in a few days, but headache persisted for about the same time. She was discharged from hospital quite well a fortnight later. The fluid came with a little rush at first, and afterwards about one drop per second. It was clear and limpid, specific gravity 1.008, very slightly alkaline; albumin was present, but no globulin. Fehling's solution was slightly reduced, giving a reddish-yellow deposit.

The usual routine treatment was carried out from the start—namely, washing out the stomach and bowel, mist, alba being left in stomach. The contents of stomach were a dirty green. Morphine gr. 1½ and atropine gr. ⅓ were injected. Normal saline was injected into the rectum, and, as she was full-blooded and cyanosed, 15 oz. of blood were withdrawn from the arm. Linseed poultices were applied over the renal area.

It cannot, of course, be said how far the other treatment was responsible for the improvement in this case, but the fits were becoming more severe and the coma was deepening before the puncture, and afterwards the fits were less severe and the general condition of the patient seemed distinctly improved. Her condition looked very grave, and I decided to try the withdrawal of some spinal fluid experimentally as an alternative to Caesarean section or leaving her to the sedative treatment alone.

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Assistant to Professor of Midwifery, Queen's
University, Belfast.

It is reported that a deposit of pitchblende showing a high percentage of radio-active substance has been discovered on the Kingswood Estate, Buckfastleigh, Devon.

J. C. CASTRO (*Siglo Medico*, 1918, p. 690) states that beriberi occurs much more frequently in Spain than is generally believed. It is particularly prevalent in Avila, Extremadura, and Hurdos. He records a case seen by him at Barquillo (Avila) in a man whose diet consisted almost entirely of potatoes. Rapid cure followed a change of residence and the use of a diet more varied and richer in vitamins.

Reports of Societies.

PREVENTION AND ARREST OF VENEREAL DISEASES.

LORD SYDENHAM presided, on January 8th, at a conference at the Royal Institute of Public Health, when Colonel J. G. ADAMI, F.R.S., C.A.M.C., read a paper, the full text of which is published under the title of "The Policy of the Ostrich" at p. 98. Lord Sydenham said that much light had been thrown during the war on the subject of venereal disease in the army, and if the statistical information available were collected and analysed it would form an important addition to knowledge. It was hoped that the centres for the early treatment of venereal disease, which had been doing very good work, would be multiplied and the hours of opening prolonged. There had been a considerable increase of infection among the civilian population during the war, and this must create a serious risk for demobilized men.

Colonel HUGH YOUNG, M.C., U.S.A. (Professor of Genito-urinary Surgery, Johns Hopkins University), in discussing Colonel Adami's paper, emphasized the good effects which had resulted in the army of the United States since, in 1912, the method of prophylactic treatment had been put into force. The incidence of venereal disease had been reduced some 50 per cent., and this notwithstanding the fact that the coincident employment of the Wassermann test had brought to light a large number of syphilitic infections which previously had been overlooked. The want of police control of prostitutes in Great Britain had gravely affected the movement of American troops; with their old-time family associations, their men longed to visit England. A very short experience of the state of affairs in Liverpool made it necessary to send as many of the troops as possible direct to France, and to rush the others through England without a stop. They could not help feeling that the condition of affairs was rather disgraceful. In France, in the seaports and towns they were assured that the prostitutes were medically inspected and free from disease, but, as a matter of fact, troops billeted in these towns showed a rapid and alarming increase in venereal disease. When from 800 to 1,000 men might visit a single brothel in the course of one day, it was obvious anything of the nature of adequate antiseptic toilet on the part of the prostitutes was impossible. The women might themselves be free from active venereal disease, but clearly they acted as carriers. This, he pointed out, was a new point of view, showing clearly that the woman who passed even the most thorough medical examination might indirectly convey disease. He wholly agreed with the previous speaker that the main danger to-day was not the soldier but the civil population. As to the policy of permitting the harlot to ply her trade freely, it must be recognized that women who conveyed venereal disease were greater criminals than were thieves. What was money compared with the health of the nation's man power?

Colonel SNOW, of the Venereal Diseases Department of the Surgeon-General's Office, Washington, stated that with the onset of the war the public were frankly informed regarding the danger of venereal disease, and the civil authorities were asked to aid the military in protecting the soldier. There was an immediate and willing response, nor had there been any opposition to the army's proposals. A ten-mile zone was established around every camp, in which liquor was not permitted to be sold, houses of ill fame were closed, and prostitutes liable to arrest. What was of first importance was the provision of recreation and entertainments of all kinds under cheerful conditions; the men were kept occupied, were educated regarding their duties to the nation, and the dangers of venereal infection. Prophylactic or early treatment was by them regarded as but one of the means, but a necessary means, of arresting venereal disease.

The Rev. J. O. H. CARTER complained that the moral side of the problem was being neglected, but Lieutenant-General Sir FRANCIS LLOYD, who until recently was in command of the London district, denied this. He realized, he said, the great difficulties existing in London, for it would be impossible to put women under arrest; a great deal might be done if the police would keep them moving, and not allow them to hang about talking to the men.

THE FUTURE OF GENERAL PRACTICE.

At a meeting of the London Association of Medical Women on January 14th, at 11, Chandos Street, with the President, Lady BARRETT, in the chair, a discussion on the future of the medical profession was opened by Dr. JANE WALKER, who dealt in particular with the question of a State Medical Service. She advocated a Ministry of Health, with the medical profession organized into a whole-time salaried service on the lines of the higher branches of the civil service, but said that there would probably be a transition stage with some part-time and some whole-time workers. Dr. Walker then dwelt on some of the disadvantages of private practice—the uncertain hours, the uncertain return for work done, the difficulty of making a sufficient number of visits in many cases of illness, and the powerlessness of the profession in dealing with evils such as bad housing. She referred to the inroads made lately upon general practice, as in the treatment of tuberculosis and venereal diseases, and in maternity and child welfare, and pointed out that specialist "team work" was too expensive for any one except the very rich, or the poor who received it free. In a State Medical Service provision should be made for full "hospital opportunity" for all patients, for study leave every five to seven years, and for each medical officer to rise according to his merits and in the direction in which his special talents lay.

Dr. CHRISTINE MURRELL, in discussing the advantages of the general practitioner for domiciliary treatment, referred to the need for the general practitioner as a link between various consultants, and to the advantage which he sometimes had over the medical officer of health in dealing with such evils as slum property. She then gave an account of some American clinics managed on a collective system, in which treatment was open to all, with payments assessed on the almoner system according to means.

Dr. JESSIE CAMPBELL, in dealing with the methods by which the standard of work in general practice might be raised, advocated part-time appointments for such work as infant welfare, school treatment centres, and the treatment of tuberculosis and venereal disease. In this way the general practitioner would be kept more up to date than by attendance at post-graduate courses.

Dr. DOROTHY HARE believed that the standard of work in general practice dropped because doctors worked alone, and so lost mental stimulus; it was difficult to try new treatment owing to want of moral support such as they would have in a hospital. Dr. BENJAMIN BUTT, Dr. DICKINSON BERRY, Dr. COCKERELL, Dr. LEWIN, Dr. HARTFORD, Dr. FAIRFIELD, and Lady BARRETT also took part in the discussion.

Rebelsus.

THE SOLDIER'S HEART AND THE EFFORT SYNDROME.

THE war has taught many lessons. In the domain of medicine and surgery it has served to demonstrate the untrustworthiness of many old established notions and has opened up new methods of diagnosis and treatment.

In the early days of recruiting a vast number of men were rejected on account of so-called heart disease. In many cases these rejections were founded purely and simply upon abnormal heart sounds. To Dr. THOMAS LEWIS belongs the credit of having recognized and demonstrated the need for a more intelligent and trustworthy test of the heart's fitness to bear any unusual strain. By carefully gauging the symptoms produced by a definite amount of exertion in health he was able to show that such symptoms differed greatly in degree in cases of cardiac insufficiency from any cause.

To this group of symptoms he has given the name of "effort syndrome," and they are to be used as the first indication of heart weakness, the exact physical conditions with which they may be associated being investigated later. In some instances gross lesions may be found, but these are not common in young adults, and it is only the degree of effort syndrome produced by a fixed amount of exertion that can serve to indicate that some defect is present.

Dr. Lewis in his new book, *The Soldier's Heart and the*

Effort Syndrome,¹ has brought together the main points of his teaching, arranged for convenient reference and study by Discharging and Pensioning Boards, and for the guidance of those in charge of military patients suffering from cardiac insufficiency.

Much of it has already been published, and the report contained in an appendix appeared in our columns in December last (p. 647). Although fully recognized by experts, the importance of a more careful and rational nomenclature of heart affections has not been by any means widely accepted. The rough and ready classification of heart cases into valvular disease (V.D.H.) and disordered action (D.A.H.) has been, and still is, responsible for a great deal of unnecessary apprehension and invalidism. Dr. Lewis raises a strong protest against such loose and misleading terminology. He points out with equal force the many errors that have been committed in the course of the indiscriminate training to which recruits have been subjected, and incidentally exposes many defects of system that call for reform.

The book as a whole presents a clinical guide of real value to the study of all morbid conditions of the heart as exemplified in the case of the invalided soldier.

"WORD ASSOCIATION."

Word association was first used as a psychological experiment in reaction time, the subject being given a succession of stimulus words to each of which he was required to answer the first word that occurred to him. The psychoanalysts have now appropriated the method. In the volume entitled *Studies in Word-Association*² we are given, as the subtitle indicates, an account of experiments in the diagnosis of psycho-pathological conditions carried out at the Psychiatric Clinic of the University of Zurich under the direction of Dr. C. J. Jung. The appearance of the book is opportune, for word association is being used in the treatment of war psychoneuroses to revive buried memories, though at first sight the subject has little bearing upon so-called shell shock.

The chapters are by different workers at the Zurich clinic, and a systematic and detailed account of the associations of normal subjects and the methods of classifying and analysing the responses occupies nearly one-third of the book; the way in which various types of people react is stated, and an interesting paradox appears when we learn that the reactions show a distinctly shallower type with educated people than with the uneducated. The associations of imbeciles, idiots, and epileptics are reported and analysed, some general deductions being made. We look to the chapters on hysteria for a practical application of the method; nine cases are described, and the reader may or may not regard as a testimonial to the writers the fact that the only result recorded was clinically a failure. The investigation of the physical accompaniment of psychical processes by means of the "psycho-galvanometer" is receiving attention in this country, and in Chapter XII Dr. L. Binswanger claims that this instrument is a valuable "complex indicator" in word association tests. This book, which contains a good bibliography, will be of value to anyone engaged in psycho-analysis and also to the pure psychologist. The translator has produced a version which, in its wording and style, bears little evidence of being a translation.

TREATMENT OF HYSTERIA.

The second number of the *Scale-Hayne Neurological Studies*³ fully justifies the remarks made concerning its predecessor in the *BRITISH MEDICAL JOURNAL* for November 9th, 1918, to the effect that the publication has "only to be known to be assured of a wide circulation." Among about a dozen short papers by Colonel Hurst and his staff on

neurological problems of everyday occurrence are interesting and practical accounts of such conditions as bent back (published in our columns on December 7th, 1918), hysterical hiccough, hysterical sequelae of gassing, and the responsibility of medical men to patients with hysterical symptoms. Colonel Hurst describes the case of a patient who showed overaction of the frontalis in association with ptosis which was hysterical. This is a new observation and is one of several by this author which prove the necessity of a revision of certain statements of fact which have come to be accepted without comment.

These *Neurological Studies* make excellent reading and are a valuable addition to medical literature. They will soon be found in the permanent library of every progressive medical man in the country.

VACCINES AND SERUMS.

To those in search of a cheerful and up-to-date summary of the practical applications of vaccines and serums we cordially recommend Captain A. G. SHERA's primer on the subject.⁴

The little book opens with a wise preface by Sir Clifford Allbutt encouraging the reader to lean over to the sunnier side of doubt—for doubts will arise from time to time in the employment of both vaccines and serums. The first half of the volume deals with the preparation and employment of vaccines, the second half similarly with serums. Captain Shera has had no little experience in the methods of treatment he recommends, and has come through it all with a happy optimism that tends to inspire his readers with confidence. The principles underlying the treatment recommended are fully explained, however complex they may be, in the most painstaking manner. Details of the practical applications of the serums and vaccines recommended are given in full—a great help to the practising medical man. Captain Shera writes with the courage of conviction, and makes out an undoubted strong case for the scientific application of therapy by inoculation. He is fully aware of its weaknesses, but holds (and who shall say that he is wrong?) that these arise from a lack of scientific procedure in the preparation or exhibition of these specific remedies.

ELECTRO-THERAPY IN GYNAECOLOGY.

In the introduction to his little volume on *Electro-therapy in Gynaecology*,⁵ Dr. SAMUEL SLOAN states that he has tried to avoid being over-enthusiastic, but one of the most refreshing features of the book is the obvious difficulty he has experienced in achieving this. Frankly, Dr. Sloan is an enthusiast, and we would not have it otherwise; but, at the same time, he is as just and candid a critic of his own work and methods as any man can be expected to be. Another refreshing feature of the book is that Dr. Sloan confines himself to what is within his own knowledge and experience, and makes no attempt to write a treatise.

In the first part of the volume he gives a lucid and simple explanation of electro-physics, and describes the meaning of ionization, and of alternating and oscillating currents. Wisely he takes for granted what is probably true of most gynaecologists—that his reader has forgotten all he had ever learned about these matters. This section is followed by short chapters descriptive of electro medical appliances—the static, galvanic, faradic, and high-frequency apparatus and their accessories.

The third part of the book is devoted to the principles of electro-therapeutics, and to an endeavour to explain on a scientific basis the benefits obtained. The two following sections are taken up with the application of these principles—first, to constitutional and functional diseases in women, and secondly, to pelvic diseases. Lastly come appendices, occupying nearly half the volume, and containing short notes of cases treated, the results of treatment, and the conclusions based upon them. To many readers this will be the most interesting part of the book.

⁴ *Vaccines and Sera: Their Clinical Value in Military and Civilian Practice*. By Geoffrey A. Shera, B.A., M.D., B.C. Cantab. London: Henry Frowde, and Hilder and Stoughton. 1918. (Fcap. 8vo, pp. xxi, + 225. 7s. 6d. net.)

⁵ *Electro-therapy in Gynaecology*. By Samuel Sloan, M.D., F.R.C.P.S.G. London: Wm. Heinemann. 1917. (Demy 8vo, pp. xxii + 258; 39 figures. 12s. 6d. net.)

¹ *The Soldier's Heart and the Effort Syndrome*. By Thomas Lewis, M.D., F.R.C.P., F.R.S., D.Sc. London: Shaw and Sons. New York: Paul B. Hoeber. 1918. (Demy 8vo, pp. 144. 7s. 6d. net.)

² *Studies in Word-Association*. By C. J. Jung, M.D., J.I.D.; translated by Dr. M. D. Eder. London: Wm. Heinemann. 1918. (Roy. 8vo, pp. ix + 575; 4 full-page figures. 25s. net.)

³ *Scale-Hayne Neurological Studies*. Edited by Lieut. Colonel A. F. Hurst, R.A.M.C., and assisted by the staff of the Scale-Hayne Military Hospital. Vol. I, No. 2. Published every two months by the Oxford University Press. (Pp. 59. Price 3s. 6d. net; annual subscription 1 guinea.)

In regard to pelvic disease, the author's experience includes pruritus, dysmenorrhoea, relaxation of the pelvic tissues, subinvolution, menorrhagia and metrorrhagia, infection of the generative tract from vulva to peritoneum, myonata, sterility, and affections of the bladder, rectum, and anus. After the recital of such a catalogue it is only just to state that Dr. Sloan has excluded cases which, in his opinion, required surgical interference, and makes no claim for electricity as a panacea. It is indeed on the very points where the operative enthusiasm of the modern gynaecologist might be expected to clash with the electro-therapeutic enthusiasm of Dr. Sloan that the book is of most interest and value.

Dr. Sloan is a pioneer, and this volume is, as it were, his cluster of grapes from the brook Eshcol. His report of what he believes to be a Promised Land deserves consideration by every one interested in the future of gynaecology, whether he ultimately becomes a convert or not.

NOTES ON BOOKS.

A FIFTH edition of the large book on *Applied Anatomy*,⁶ by Dr. WILLIAM G. DAVIS, professor of orthopaedic surgery in the University of Pennsylvania, has been issued. The book is very copiously illustrated with drawings, most of them coloured. The text and drawings have been revised for the new edition, and the book forms a most useful work of reference for surgeons.

Professor CHAUDHURI's little book on *Modern Chemistry and Chemical Industry of Starch and Cellulose*,⁷ written with special reference to India, is a book for the public. It begins with a section on the broad chemistry of the subject, and goes on with an account of the industrial problem in India with its applications to such industries as those concerned with alcohol, textiles, paper making, artificial silk, and so forth. Professor Chaudhuri has the industrial advancement of his country at heart, and should advantage be taken of the manufacturing possibilities he points out in his pages he will have achieved no little success by its publication.

The second edition of Professor LEWIS's *System of Physical Chemistry*,⁸ an abstruse and very thorough piece of work, presents the same characters as the first, which was reviewed in this JOURNAL two years ago (p. 484). The book remains one for the advanced student or teacher of chemistry or physics. The new edition has undergone considerable enlargement, with the addition of pages leading up to such subjects as Boltzmann's probability-entropy relation in statistical mechanics and its bearing on the second law of thermodynamics, osmotic pressure (that hardly perennial), adsorption and membrane equilibria, and the like. It has also expanded from two volumes into three, the first dealing with kinetic theory, the second with thermodynamics, and the third with the physico-chemical aspect of the quantum theory which has proved so useful in solving problems insoluble by kinetics or thermodynamics. Professor Lewis's treatment of physical chemistry is highly mathematical throughout, and his pages are replete with quotations and references to the original literature. We wish these volumes the success they deserve.

Titanium, an element discovered by Gregor in a Cornish mineral in 1791, and commonly but erroneously regarded as a "rare" metal, is actually thought to compose one three-hundredth part of the earth's crust. One of its chlorides, of the formula $TiCl_3$, was introduced as a reducing agent into volumetric chemistry by Professor KNECHT⁹ of Manchester some fifteen years ago, and he has now reissued a short monograph giving details of the many ways in which titanous chloride can be used for quantitative volumetric analysis in the domains of organic

and inorganic chemistry. The book is clearly written, and gives an adequate account of the subject.

Dr. LUFF's well-known *Manual of Chemistry*,¹⁰ theoretical and practical, inorganic and organic, adapted to the requirements of students of medicine, has now reached its sixth edition. It contains many alterations and additions, and is indeed nearly seventy pages longer than its predecessor, a reflex of the fact that some medical curricula now comprise much more organic chemistry for the second year of study than they did in easier days gone by. It is well arranged and clearly written, appearing to contain all the facts likely to be required by the medical student. We cordially recommend this highly successful volume to the attention of those for whom it has been composed.

¹⁰ *A Manual of Chemistry: Theoretical and Practical, Inorganic and Organic*. Adapted to the requirements of Students of Medicine. By A. P. Luff, M.D., B.Sc.Lond., F.R.C.P., F.I.C., and Hugh C. H. Canby, B.A., B.Sc.Lond., F.I.C. Sixth edition, enlarged. London: Cassell and Co., Ltd. 1918. (Fcap 8vo, pp. xix + 745. 12s. net.)

ROYAL MEDICAL BENEVOLENT FUND.

At the last meeting of the Committee, held on January 14th, 1919, seventeen cases were considered, and £175 voted to fourteen of the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 50, of M.B.Lond. who died in 1885. Loss of income through bad investments. Bad health will not allow applicant to work. Only income 10s. a week from a nephew, and help from the Guild. Relieved four times, £40. Voted £12 in twelve instalments.

L.R.C.P. and S.Edin., widower, aged 61, suffering from spastic paralysis. Has one son, who allows £50 a year; other income £20 from another charity. Rent £25 10s. Relieved fourteen times, £168. Voted £12 in twelve instalments.

Daughter, aged 66, of M.D.Edin. who died in 1873. Applicant, along with two sisters, endeavours to make a living by taking in paying guests, but finds it difficult to meet expenses. Other income, dividends £46; from relatives £30. Rent £40. Wants help to provide coal. Relieved three times, £35. Voted £10.

Widow, aged 50, of L.S.A.Lond. who died in 1911. Was left with two young boys, now aged 14 and 16 years. Precarious health prevents applicant from doing any permanent work. Sister-in-law allows 30s. a week. Rent £18 a year, and £18 paid for insurances for children. High cost of living makes it impossible for applicant to manage. Relieved three times, £25. Voted £10.

Widow, aged 53, of M.R.C.S.Eng. who died in 1912. Has two children, the eldest 24, who is a clerk, not living at home, and the youngest daughter, aged 14 years, at St. Anne's School, and has to be kept during the holidays, and provided with clothes. Applicant has post as companion, at £20 a year. Relieved four times, £40. Voted £10 in two instalments.

Widow, aged 38, of M.R.C.S.Eng. who died in 1914. Applicant lives with her mother, who is unable to keep her. Only child, aged 10, at St. Anne's School, but has to be kept during the holidays, and clothed. Applicant's health is bad, and she is unable to work. Helped by the Guild. Relieved four times, £48. Voted £12 in twelve instalments.

Daughter, aged 66, of M.R.C.S.Eng. who died in 1879. Owing to ill health, unable to work. Income from property, £26; Royal United Kingdom Benevolent Association, £26; and occasional help from friends. Rent 3s. per week. Relieved twelve times, £135. Elected to an annuity of £10.

Daughter, aged 68, of L.R.C.S.Edin. who died in 1893. Applicant endeavours to earn a living by letting rooms, but owing to the high cost of living finds it impossible to meet expenses. Health has been bad recently. Rent £25 per annum. Has received about 16s. per week by letting rooms. Relieved twice, £77. Voted £12 in twelve instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.1.

A MEETING was held recently at Milan under the presidency of Professor Camillo Golgi. A committee was formed to promote an institute for invalid soldiers suffering from nervous affections requiring special and prolonged care. Professor Eugenio Medea, the initiator of the scheme, stated that subscriptions to the amount of £12,000 had been received. Commendatore Bertoldi had given a fine villa at Arosio with a large garden. Professor Golgi was elected president, and Professor Medea director.

⁶ Philadelphia and London: J. B. Lippincott Company. (Medium 8vo, pp. x + 630. 30s. net.)

⁷ *Modern Chemistry and Chemical Industry of Starch and Cellulose*. (With Reference to India.) By Tarini Charan Chaudhuri, M.A., Professor of Chemistry, Krishnath College, Berhampore (Bengal), etc. Calcutta: Butterworth and Co. (India) Limited. 1918. (Cr. 8vo, pp. viii + 156. Rs. 3 12.)

⁸ *A System of Physical Chemistry*. In three volumes. "Second edition." By William C. McE. Lewis, M.A.(R.U.I.), D.Sc.(Lond.). London: Longmans, Green, and Co. 1919. (Demy 8vo. 15s. net each volume.)

⁹ *New Reduction Methods in Volumetric Analysis*. By Edmund Knecht, Ph.D., M.Sc.Tech., F.I.C., and Eva Hibbert, M.Sc.Tech. London: Longmans, Green, and Co. 1918. (Cr. 8vo, pp. x + 135. 6s. net.)

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SATURDAY, JANUARY 25TH, 1919.

THE ORGANIZATION OF RESEARCH.

ALL are agreed that Parliament must now assume those responsibilities with respect to the promotion of scientific research which it has too long ignored; but, to judge from ministerial utterances, reports of committees, and newspaper comment, widely divergent opinions are held upon questions of procedure. The subject is of such importance, the consequences of a mistaken policy now would be so disastrous in the future, that we desire to submit certain considerations which should be had in mind by those charged with the formulation of a national policy.

A good deal of misunderstanding has been created already by a tendency to use the word "research" in different senses. To some writers it is a universal elixir; others would make it synonymous with the systematic application of thought, the organized acquisition of facts and information; while many think that research is something done in laboratories and indissolubly connected with test tubes or smoked drums. Unless this misunderstanding is cleared up no progress can be made. The real implications of the term "research" are most easily understood if we seek the unifying characteristic of men whom all educated people would agree to call great researchers; let us take, for examples, Thomas Sydenham, Stephen Hales, and Blaise Pascal, each a scientific giant. The extrinsic differences are wide: Sydenham was a busy medical practitioner, Hales a country parson who experimented on animals, Pascal an ascetic; yet not only were they prolific research workers, but any one now investigating disease is, consciously or unconsciously, the debtor of all three with respect to epidemiological, physiological, or statistical method. What, then, is the characteristic common to the three? It is a spirit of disinterested curiosity. Pascal, when pondering over a problem in the equitable division of gamblers' stakes did not think it was of any practical use, did not dream that he was laying one of the foundation stones of the business of life assurance; he was anxious to solve the problem because it *was* a problem—because the solution would satisfy his curiosity. Hales could have given no better reason for inserting tubes into the arteries of cart-horses; while Sydenham, who did set up to be practical, owes much of his worth to the fact that he could not resist the temptation to recur over and over again to problems which he himself declared to be beyond the scope of mortal man. Research is the satisfaction of intellectual curiosity, of the desire to know how something works, why it is, or what it is. Whether the genuine research worker is inquisitive about great matters or about small matters depends upon whether he is a big man or a small man, but unless he is inquisitive by nature he is not a research worker at all. A corollary of this is that no research worker worth his salt has ever been, or ever will be, dissuaded from satisfying his curiosity because the practical value of so doing cannot be determined. But, by the irony of nature, precisely such a person does ultimately ensure practical results, while the severely

utilitarian exploiters of natural philosophy often end in blind alleys. As Professor Whitehead said, "The Romans were a great race, but they were cursed with the sterility which waits upon practicality. They did not improve upon the knowledge of their forefathers, and all their advances were confined to the minor technical details of engineering. They were not dreamers enough to arrive at new points of view which could give a more fundamental control over the forces of nature. No Roman lost his life because he was absorbed in the contemplation of a mathematical diagram."

This diagnosis, which we believe all men of science will accept, leads to the formulation of two general principles. The first is that the creation of an army of research workers is not, as some journalists fondly imagine, a mere question of how much money the nation is prepared to lay out in research, and the second is that the military metaphor, the conception of a strong silent man (whether a minister of state or another) marshalling a researching host, detailing a battalion here or a brigade there for the conquest of some well-defined objective, is false and misleading. As Sir Daniel Hall said in 1914, "the methods of research are anarchical, and ought to be continuously destructive of accepted opinions." Consequently, the real problems to be solved are, first, to devise a means of recognizing the genuine research worker when we see him, and, secondly, to make it possible for him to do his work with as little interference as possible.

The solution of the first problem involves the maintenance of the closest possible contact between the administrators of a national research policy and the universities. The type of mind needed for research is not revealed by the ordeal of a candidate for an official salary, not always by the written record of his past; it shows itself "in the impact of young thought upon young thought, of fresh thought on fresh thought, of hot thought on hot thought, in mirth and refutation, in ridicule and laughter—for these are the play of the natural mind"; and these things are known to the sympathetic teacher. If there were no other reason—and there are many others—an intimate understanding between the national research departments and the universities and colleges would be of vital importance. But, since the most direct way of associating research with teaching is to make teachers researchers, it follows that much of the national research should be carried out in the universities, and that as little as possible should be done to tempt those who are imbued with the spirit of research, and happen to be inspiring teachers, to withdraw into government offices or state institutes.

The second problem is to be solved by the creation of a machinery which safeguards the democratic principle that a minister answerable to Parliament is responsible for the expenditure of public moneys, but at the same time vests the control of research workers in the hands of men who are not tempted to do violence to the spirit of research, and will not be swayed either by ephemeral administrative interests or by clamour for quick returns from the investments made. Fortunately such a machinery already exists, and, with but slight modifications, should perform all the duties indicated. We refer to the developments following the constitution of a Committee of the Privy Council for Scientific and Industrial Research. The existing arrangements are detailed in the report of the Machinery of Government Committee.¹ Briefly, the position is that there is a Committee of Council, for whose expenditure the Lord President is responsible

¹ C.A. 9230, Sections 45-53. H.M. Stationery Office; through any bookseller, 6d.

to Parliament, while an advisory committee, consisting of men of science with an administrative chairman, is actually responsible for the research work undertaken, choice of staff and place; in fact, is charged with duties similar to those performed by the Medical Research Committee, to whom the Chairman of the National Health Insurance Joint Committee bears the same relation as does the Privy Council Committee, or rather the Lord President, to the Industrial and Scientific Advisory Council.

An obvious development of this system would be to retain the Privy Council Committee—the Ministerial Committee, as it is conveniently termed in the Machinery of Government Report—as the spending authority responsible to Parliament, and to place beside the existing Advisory Council for Scientific and Industrial Research (from whose title the word advisory might be omitted) a series of councils standing in the same relation to the Ministerial Committee, and covering the main fields of research. One, the Medical Research Council, would succeed the existing Medical Research Committee and continue and extend its work. A second council, dealing with the research duties of the Development Commissioners and of the Department of Agriculture, suggests itself at once. Each council would contain a majority of scientific men, and departmental interests would be represented by the addition to each of a competent number of assessors. The secretaries of these councils would constitute the administrative staff, would confer with one another, and each have direct access to the Ministerial Committee. As various departments of research, coming within the province of one or more of the main councils, were found to require special treatment, new bodies—subordinate to the councils in that their expenses were borne on the Council budgets, but, in practice, free to initiate and direct research—would be constituted on the same lines. The Fuel Research Board and the Industrial Fatigue Research Board are already examples of such organizations, while a Human Nutrition Research Board may soon be created. If the Lord President or the Ministerial Committee desire further secretarial assistance than that furnished by the Council secretaries, this should be provided, but only on the understanding that such a secretariat was not regarded as a channel through which proposals emanating from the councils must pass, or as an authority capable of vetoing or withholding such proposals from the Minister.

We believe that this machinery would prove well adapted to the needs of the time.

The reason suggested for vesting ministerial authority in the Lord President of the Council rather than in a Minister of Research may be thus stated: It is not expedient that the Minister should attempt to impress his personality upon the research work undertaken—as we said above, the metaphor of a general and an army is false—he is to ensure that public money is not wasted, that what is done, or proposed to be done, can be supported by rational argument, that any line of investigation demanded by the public is at least considered on its merits by those fit to give an opinion; he must not attempt to play providence or be an intellectual dictator. The general interests of, for instance, medical research should be entrusted to a separate council under the Lord President rather than incorporated in a Ministry of Health. The separation of the Council from any direct entanglement with executive departments gives it an impartiality which it might indeed possess *de facto* under a wise Minister of Health, but would not have *de jure*; obviously impartial, it would be better able to assist and co-operate with all depart-

ments of State needing its aid without risk of inter-departmental jealousies.

Further, the ranging side by side of scientific councils of equal status and bearing similar responsibilities makes for that interchange of methods and ideas which is so important in research. The number of cases in which different aspects of the same problems are of importance in different fields of activity is endless. The commercial value of research into synthetic dyes, its laboratory value in connexion with histological methods, its surgical value in relation to antiseptics; the importance of researches into metabolism from the point of view of the physician, the stock breeder and the agriculturist—these are simple illustrations.

Lastly, the constitution of the councils will ensure that contact with the seed-plots of research workers, the universities, which we believe to be of paramount importance.

THE REFORM OF MEDICAL EDUCATION.

WHEN, only a short generation ago, men of foresight began to say that medical education—if it was to be maintained efficient in face of the growing complexity of medicine—must be subsidized by Parliament, succeeding Chancellors of the Exchequer polished their wit on so preposterous a proposal. Times have changed, and we now find the Board of Education actually offering to make grants on certain conditions. The Board made its first grant to a medical school in 1908; in 1914 it made grants to eighteen of the twenty-two medical schools in England. The total amount so granted was only £40,000 among the eighteen, but the principle is thus admitted by Parliament. The belief that Mr. Fisher has been able to persuade the Chancellor of the Exchequer that more money must be found is encouraged by the invitation to the universities and institutions of university rank to submit written statements. This invitation was given at the interview representatives of these bodies had with the two Ministers last November. If the ideas expressed in the memorandum on medical education¹ issued by the Board of Education a few months ago are to be carried out the total of the grants must be increased many fold.

The general conditions upon which grants are made by the Board of Education are set out in a statement issued in 1911; in determining the question of making a grant and its amount, and in all its relations with university institutions the Board, it tells us, proceeds on certain general principles. It starts with the proposition that university education in medicine is necessary, and the first guiding principle is that a wide measure of freedom is fundamental to the proper development of true university work. The Board makes no attempt to prescribe the adoption of any model course or particular method of teaching. While it is concerned to know how the grant is used and is anxious that the school authorities should discuss the matter frankly with the visitors deputed by the Board to report upon the work of the school (those so far nominated being Sir Thomas Barlow and Sir Clifford Allbutt), the Board has always refrained from prescribing any particular method of allocating the additional revenue the grant provides. Again, in summarizing the remedial action which should be taken to meet certain defects observed in English medical education of the day, it is said that the first need is further financial assistance, for "it is

¹ Cd. 9124. His Majesty's Stationery Office; to be obtained through any bookseller, price 9d. net.

impossible to-day to teach medicine out of students' fees or uncertain endowments as it ought to be taught. The result is that medical education and research are starved." The second fundamental principle is that there is a need for direction as to the wise, economical, and purposive outlay of the income of the school. In the special circumstances of London this will probably be held to imply some degree of joint action between the several medical schools.

The application of the fundamental principles of the report made in its several sections, from the teaching of the preliminary sciences to instruction in preventive medicine, raises endless topics of discussion, and we are sure that it would be doing an injustice to Sir George Newman to assume that he or the Board of Education desire to impose the opinions therein expressed upon the teachers in the schools; for, again to quote, it is recognized that "we need throughout the medical curriculum—in preliminary science, intermediate and clinical subjects—an education of university standard, not subservient to an examination system, but directed and inspired by competent leaders in each medical faculty, leaders of educational purpose, attainment, and experience, of fertile intellect and forward-looking mind, devoted to their high calling as teachers and investigators."

The difficulty every reformer of medical education has to consider at the threshold of his inquiry is the question of time; he must so adjust his scheme of education that the average man who embraces the arduous calling of medicine may enter upon his life-work at a reasonably early age, otherwise the scheme will be too expensive in years of life, to say nothing of money. Sir George Newman, if we understand him aright, would save time by requiring the secondary school to give its pupils a thorough grounding in inorganic chemistry, in mechanics, and elementary physics, and in nature study and botany; and it is said that in some secondary schools it will be practicable within two years to cover the ground of all the preliminary sciences ancillary to medicine, making it unnecessary for the student to devote any time at the medical school to the preliminary study of these basic sciences. Yet it is recognized that at the university medical school facilities must still for the present be provided for this study.

It has been asked whether it is desirable that introductory courses in physics, chemistry, and biology should include reference to the later applications of these sciences. We conceive that the answer to this question must be in the negative; it can be of very little service to include in such courses reference to their applications to medicine, because the pupil at that stage knows nothing about medicine or the working of the healthy human body. On the other hand, it may be desirable to provide senior courses in medical chemistry, in biochemistry and medical physics, and possibly comparative biology and anatomy—all inspired by the intention of bringing these subjects into closer touch with anatomy, physiology, pharmacology, and pathology. For analogous reasons we would deprecate any strong pressure from the Board of Education or the General Medical Council to induce teachers in the medical schools to give instruction as to prevention of disease or disability at an early stage of the medical curriculum; before a student can profitably study the principles and the art of prevention he must have general notions as to what he is to prevent. The sooner a student gets to understand what is the final end of his teaching the better; there is still a good deal to be said for bringing the student at a very early stage of his career into contact with sick and injured persons.

CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION IN APRIL.

It was announced last week that the President and other officers of the Association, after consultation with the Director-General of the Army Medical Service and representatives of the Medical Service R.N., of the Medical Branch of the Royal Air Force, and of the Medical Services of the Dominions and of the United States, had resolved to recommend the British Medical Association to hold a special clinical and scientific meeting in London this spring. The recommendation was approved by the Council at its meeting on January 22nd, and committees have been appointed to make the necessary arrangements. The President (Sir Clifford Allbutt), in explaining to the Council how it was that Cambridge could not invite the Association to meet there this year, said that though the medical school was getting into order, many teachers had not yet returned and the laboratories were undermanned in the matter of lecturers and demonstrators. Medical students, including many who had been away in the war, were coming back in unexpected numbers, and it would take some time to get the laboratories into order for teaching. This re-establishment of the teaching work must precede the systematic resumption of research work. The university desired to have its medical school and all its laboratories in full working order when the Association visited Cambridge in 1920, and hoped then to demonstrate the results of the resumed research work. The President gave a sketch of the reasons that had moved him and the other officers of the Association to advise that a short scientific meeting should be held at an early date to discuss the work done during the war. The reasons for suggesting a meeting early in April were fully explained to the Council, which accepted the general recommendation and arranged that the meeting should take place during the second week in April, beginning, probably, on Tuesday, April 8th, and terminating not later than Friday, April 11th. There will be three sections—of medicine, of surgery, and of preventive medicine and pathology respectively. The President has consented to hold an informal reception on Tuesday, April 8th, and a committee has been appointed, with power to add to its number, to arrange the work of the sections. This committee is meeting on January 24th, and we hope to publish further particulars next week. Meanwhile it may be said that there is a strong opinion in favour of making the work of the meeting as practical as possible, by arranging in connexion with each section practical demonstrations of various kinds. A General Arrangements Committee has also been appointed to select a suitable place for the meetings, and also to arrange, as far as possible, to facilitate the provision of accommodation for visitors. This, it is recognized, will be a serious difficulty, as London is very full, but it is hoped that, partly through the assistance of the medical departments of the Dominion forces in respect of their own officers, and partly through private hospitality, this difficulty may be overcome. It is intended on each evening to hold receptions, which will afford members and others attending the meeting an opportunity of becoming better acquainted.

POST-GRADUATE MEDICAL STUDY WITH THE ARMIES IN THE FIELD.

Though hostilities have ceased the need for maintaining large armies in the field at present remains. On the Western front the British armies have had to advance to the Rhine, and our forces now extend in echelon from the sea coast, across northern France, across the whole breadth of Belgium, through the Rhenish provinces of Germany into Cologne. In order to provide adequate medical services for the troops it is certain that a large number of doctors must still be retained in the army. The regular R.A.M.C. cannot furnish all the medical officers who will be required, so that for some months at any rate many Territorial and temporary M.O.'s will be called upon to remain overseas.

One may hope that there will be no more wounded to deal with, excepting our wounded prisoners who will from time to time be transferred homewards from Germany. But there will always be a certain number of casualties from sickness. Nevertheless, it is recognized that the immediate future will be a period of dullness and possibly ennui, calling for no little patience on the part of those who continue on service abroad. The army authorities realizing this are initiating schemes for mental and physical diversion, and educational facilities in numerous directions are being offered both to officers and men. Classes are being started in many subjects both of a theoretical and practical nature. The professional education of medical officers will, we hope, be fostered to the utmost extent that circumstances permit. The exigencies of military service have given many of them scanty opportunities of keeping up or perfecting themselves in the medicine and surgery which is called for in civil practice. The heads of the army medical services are, we feel sure, anxious that every possible opportunity shall be given to men detained with the armies abroad to brush up the knowledge that may have rusted and to occupy themselves in acquiring fresh knowledge in special branches. The amount of clinical material available may not be varied and interesting enough to provide a complete post-graduate curriculum of the highest standard; there is ample material to justify some attempt in this direction.

RECONSTRUCTION OF THE FACTORY MEDICAL SERVICE.

THE Incorporated Association of Certifying Surgeons has issued a report on the Reconstruction of the Factory Medical Service which may be considered valuable, inasmuch as it reviews both the good points and defects of the service, and states what is required to promote efficiency from the point of view of those who have intimate acquaintance with the subject. The Association of Certifying Surgeons has always been particularly interested in bringing to the forefront the requirements of industrial hygiene. In view of the imminence of a general reconstruction of public medical services, it has been considered desirable in the public interest to review the position as it affects the office of certifying surgeon and to make recommendations. The opinion is strongly expressed that the present system has a solid foundation of usefulness, inasmuch as it is based on the two essential principles on which any plan of medical supervision of factory workers must be built up—individual medical examination and practical knowledge of the conditions of employment. It is stated, however, that the usefulness of the office has been very much impaired for many years through the want of efficient supervision and sympathetic control, though due credit is given for the improvements in the service effected by Sir Arthur Whitelegge. The authorization of the sixpenny examination directly after the Act of 1867, the fact that the service has been almost always entirely under lay control, and the circumstance that it has never been any one's special business to follow up the medical examinations of young people with a view to securing practical results, are regarded as mainly responsible for the defects of the system. The report advocates the formation of a well equipped and efficient medical department which should be administrative as well as executive, and that there should be a chief medical inspector directly responsible to a Minister of the Crown, with other medical inspectors, who, besides carrying out special work, should directly supervise all the duties of certifying surgeons. Whilst agreeing that a Ministry of Health should have certain powers of high control, it recommends that the whole of the Factory Department should be transferred to the Ministry of Labour. The main reasons for the suggested change are that a Ministry which has the

economic problems of labour under its care and direction is the proper body to take charge of occupational, health and safety problems; that the Labour Exchanges could be made into useful adjuncts to medical examination by becoming the medium for securing employment suited to the physical condition of young persons; and that the health and welfare measures established by the Ministry of Munitions could be more suitably carried on by the Ministry of Labour than by the Home Office. There are twenty-nine recommendations, the most important, probably, being that outlining a practical method for co-ordinating the work of the certifying surgeon with that of the school medical officer and of colleagues in other districts, as well as for securing the observance of directions given to the employer or employed, through the medium of juvenile departments of Labour Exchanges, which it is stated should constitute the sole portal for juveniles to obtain state regulated employment. The heads of schools should ascertain from parents of children, on leaving, the nature of employment desired, and if this be state regulated, the Director of Education would forward to the Director of the Exchange particulars respecting the school medical history, the educational standard, and date of birth. On applying at the Labour Exchange the applicant for work, if duly qualified, would receive an "employment ticket," which on engagement, would be endorsed with the name and address of the firm and returned to the exchange. The director would then forward to the employer the "record card" containing the essential particulars mentioned. This record card would be inspected by the certifying surgeon, who would fill in further particulars respecting the exact nature of employment, any fresh physical defects found, if passed or rejected, and conditions attached to certificates of fitness. The card would then be returned to the exchange and filed. The procedure would be repeated at each change of employment. In the case of a young person from another district, the director of the exchange would make application for his record card from the director of the district where he was last employed or at school. Inspectors attached to the exchange would visit both factories and homes to make sure of the directions of the certifying surgeon being carried out. Other recommendations deal with the extension of the certifying requirement to mines and warehouses and to young persons up to 18 years of age; to the making of conditions respecting safety, care and treatment; to the extension of national insurance to young persons of 14 and 15; and to the method of payment for services and the inadequacy of present fees. Representation is desired on the advisory body to be attached to the Ministry of Health. Lastly, suggestions are made for increasing efficiency in carrying out duties connected with industrial disease and poisoning, and with the granting of certificates under the Workmen's Compensation Act. Copies of the report can be obtained on application to Mr. E. A. Chambers, 16, John Dalton Street, Manchester.

COMPULSORY NOTIFICATION OF PHTHISIS IN FRANCE.

WITH the support of M. Clemenceau, who, it will not be forgotten, is a member of the medical profession, M. Mourier, Under Secretary of State for Health, is about to introduce into the Chamber of Deputies a bill to make the notification of open pulmonary tuberculosis compulsory throughout France. The first article of the bill provides that a patient suffering from open pulmonary tuberculosis shall be notified within eight days after diagnosis. The doctor will be required to state whether the necessary attention can be given and the necessary prophylactic measures taken. The medical authorities, if they think fit, will invite the patient to attend a dispensary, and will be authorized to insist on his entering an institution and to disinfect his residence. Departments

and communes are to provide treatment and institutions and to give a grant in aid to the patient's dependants. The preamble of the bill states that there are at present 55,000 soldiers in France under treatment in hospitals and institutions for tuberculosis. It is estimated that there are 500,000 persons suffering from tuberculosis in France at present. The estimated cost of the measure is an original charge of about three and a quarter millions sterling. The annual charge will be four millions, or some two and a third millions in excess of what is spent at present. M. Mourier has pointed out that the cost of the reform is fairly negligible when compared with the costs of a single munitions factory.

FUNCTIONAL ANOSMIA.

CAPTAIN DIGBY WHEELER has recorded, in the *Bulletin* of the Canadian Army Medical Corps, a curious case of complete functional loss of smell. The patient was a private who was buried by an explosive shell on April 27th, 1917; he was unconscious for three hours, but recovered while he was being dug out. He wished to carry on, but the M.O. sent him down. Three days later, at a base hospital, he noticed that he could smell nothing, and that all he ate tasted like so much pine wood. He went back to his unit, where good evidence that complete loss of smell persisted was afforded by the fact that he did not notice any offensive odour when uncovering the decomposed corpses of two Germans, though the men with him had to give up. In June he was again sent to hospital with a diagnosis of trench fever. He then presented gross symptoms of psychoneurosis, such as tremor and persistent occipital headaches, and was eventually admitted to the Granville Canadian Special Hospital at Buxton, where nothing abnormal was found beyond limitation of flexion of the back, fine tremor of the right leg, and complete loss of the sense of smell. He recognized sodium chloride as salt, syrup and glucose as sweet, dilute hydrochloric acid as acid, quassia as bitter, but he did not recognize the smell of ammonia, oil of lemon, hydrogen sulphide, rose water or peppermint; nor was he able to recognize cheese, butter, cabbage, potato, jam, beef, or mutton; that is to say, he retained only the four primary tastes. He was incapable of recognizing his food; in fact, he had lost that fine discrimination with which taste and not smell has usually been credited. After he had been a little over a fortnight in hospital application of a weak faradic current to the lumbar region was followed by restoration of practically full voluntary flexion in two minutes; two days later some time was spent in explaining to him his condition and assuring him that his sense of smell would be restored. A strong faradic current was applied to the back of the neck, and at the same time strong ammonia was held under his nose; at the end of a minute he recognized it as ammonia and was greatly pleased. He next recognized oil of lemon with the aid of a weaker current. Other substances were then given to him without the use of the current, and he identified each immediately. The foods previously used for testing were then given to him and he identified each immediately without the aid of the current. Then different foods were administered in combination, and he was able to tell accurately what he had been given.

HEALTH BOARDS AND MINISTRIES.

WE find that a letter from Dr. J. Brindley James, published at p. 90 of our last issue, has been interpreted to mean a claim by him to have been the first to suggest the appointment of a Ministry of Public Health. We did not take it in that sense, and the Ministry of Health about to be established is something different from a Ministry of Public Health. However this may be, it may be well to recall that Sir Benjamin Ward Richardson published a book entitled *A Ministry of Health* in 1879, and referred

in its preface to a paper he had read before the Sanitary Institute Congress at Stafford in October of the previous year. The idea of a department of the State concerned with health is, of course, very much older. Pitt appointed a Board of Health in 1805, but it was allowed to lapse after his death. The first general Board of Health was created by the Government in 1848; it was reconstituted in 1854, and in the following year Sir John Simon became its medical officer. The board was abolished in 1858 by the Public Health Act of that year, and its duties were transferred to the Privy Council. Simon became medical officer to the Privy Council, and in that capacity he instituted in 1858 annual reports, treating each year special subjects from his own broad point of view, and expressed in his own terse and graphic phraseology. If his views had been allowed to prevail the department would have grown into a Ministry of Health. But in August, 1871, with the ostensible aim of co-ordinating the various public health authorities, the old Poor Law Board, the Local Government Act Office of the Home Office, and the medical department of the Privy Council were amalgamated to form the Local Government Board. This temporizing expedient is now to be undone. As is pointed out in the notice of Sir John Simon in the *Dictionary of National Biography*, he became chief officer of the new board in the belief that his independent powers would be extended rather than diminished, but neither the then president of the Board, nor its permanent secretary, took this view of the medical officer's right to initiative and administrative independence. Simon protested vigorously, but finally after a fierce battle with the Treasury his office was abolished. Simon was a very remarkable man, but the great services he might have rendered were cut short by official obstruction and political indifference. Again to quote from the biographical dictionary: "The most important feature of Simon's work was his insistence that practice should be based on scientific knowledge, and his recognition of the large fields for investigation without reference to immediate practical results. He was confident that such research (to use his own words) 'would lead to more precise and intimate knowledge of the causes and processes of important diseases, and thus augment, more and more, the vital resources of preventive medicine.'"

THE HALF-YEARLY INDEXES FOR 1918.

THE usual half-yearly indexes to the *JOURNAL* and the *SUPPLEMENT* are now ready for distribution. They will not, however, be issued with all copies of the *JOURNAL*. Any member or subscriber who desires to have one or both of the indexes can obtain a copy of what he wants by sending a post-card notifying his desire to the Acting Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C.2.

THE Swiney Prize for 1919 has been awarded to Dr. Charles Mercier for his work *Crime and Criminals*. He also received the prize in 1909 for his work *Criminal Responsibility*. The prize, which consists of a sum of £100 contained in a cup of the same value, was established under the will of Dr. George Swiney, who died in 1844. It is awarded every fifth year, on the anniversary of the testator's death, for the best published work on jurisprudence. The award is given alternately for medical and general jurisprudence, on the adjudication of the Royal Society of Arts and the Royal College of Physicians of London.

IT has been decided to give the name of M. Clemenceau to the sanatorium established at Bicêtre for soldiers discharged on account of tuberculosis. This honour is intended as a memorial of the French Premier's early association with the hospital, where he was *interne provisoire* in 1863.

THE WAR.

THE MACEDONIA DISPATCH.

A DISPATCH from General Sir George F. Milne, K.C.B., Commanding-in-Chief, British Salonica Force, was published in the *London Gazette* of January 22nd. It deals with the operations of the British army in Macedonia from October 1st, 1917, to the date of the dispatch, December 1st, 1918. By the end of September, 1917, roads both to the base and transversely had been greatly improved. In the middle of October it was possible to withdraw into reserve an infantry brigade which had been for over a year continuously in the front line. The winter set in early; it was severe, with heavy rain, snow, and frost, and as late as the beginning of March a blizzard of extraordinary severity brought deep snow, which hampered all movements. Operations began in the middle of April, and were at first limited to local raids. During June evidences of a lowering of the moral of the Bulgarian army became noticeable, and a general offensive of the allied armies was timed to take place during the first fortnight of September. The effective strength of the British troops at this most trying period of the year in Macedonia had, owing to climatic disease and a sudden and severe epidemic of influenza, fallen below one-half of the normal establishment. The attack on the mountain positions held by the enemy on September 18th and following days was costly; the 7th Battalion South Wales Borderers came out with 19 unwounded men and one wounded officer. On September 19th fighting was again severe, and the 65th Infantry Brigade, which had moved up rapidly during the night from an influenza observation camp, twice gallantly tried alone to capture "P" Ridge, but were driven back by overwhelming fire from the enemy's machine guns. Though the attack was only partially successful the enemy was severely shaken; he had suffered heavy casualties, losing over 1,200 in prisoners alone, and the whole of his reserves which might have been effectively employed elsewhere had been pinned down at this front. The results of these stubbornly contested operations were seen in the next few days. The enemy began rapidly to retire, and the first of the allies to enter Bulgaria was the Derbyshire Yeomanry, early on the morning of September 25th. The Bulgarians began negotiations for an armistice on the following day, and it was concluded at 2 a.m. on September 30th. On October 10th General Milne was appointed to command the allied troops operating against Turkey in Europe, and was instructed to transfer his army to that theatre of operations. In spite of the destruction of the railway and the absence of roads two British divisions and one French were on the River Maritza ready to seize the northern bridges and occupy Adrianople when, on the night of October 30th-31st, news was received of the conclusion of an armistice with Turkey. At that time the Greek troops under the command of General Milne were ready to take part in the advance on Constantinople.

All through the dispatch there are evidences of the way in which the army has been tried by disease; malaria and influenza had taken a heavy toll, both in strength and in numbers, but rather than miss the opportunity for which they had waited three years officers and men remained in the ranks till often they dropped from sheer exhaustion. "In this unhealthy climate," General Milne continues, "the efficient administration of the medical services is naturally of extreme importance, and in this respect a very high standard of efficiency has been attained. In an army saturated with malaria and passing through a severe outbreak of influenza, heavy calls were constantly made on the strength and devotion to duty of the Royal Army Medical Corps, of whose work I cannot speak too highly. I am much indebted to Major-General M. P. Holt, K.C.M.G., C.B., D.S.O., and his subordinates for the admirable manner in which their duties have been performed."

In further paragraphs General Milne writes of the indefatigable and devoted work of the nursing service and voluntary aid detachments during three years; in many instances they sacrificed their own health for the soldiers in their charge. Though the general service voluntary aid detachments arrived late in the theatre they proved

of great value, and General Milne says that to all these ladies the British army in the Balkans, and many of our allies, owe a deep debt of gratitude. He expresses his thanks to the British Red Cross Society, to the army chaplains and to the Y.M.C.A. He also takes the opportunity of expressing his admiration of the work of the Scottish women's organizations serving with the Serbian army.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

CAPTAIN J. FORTUNE, R.A.M.C.

Captain John Fortune, R.A.M.C., was reported as having died on service, in the casualty list published on January 13th. He was educated at the Universities of Edinburgh and Manchester, and graduated M.B. and Ch.B. Edin. in 1903, and M.D. Edin. in 1907, and also took the D.P.H. at Oxford in 1909. After filling the posts of senior assistant medical officer of Devon County Asylum, of assistant medical superintendent of Ladywell Sanatorium, Salford, and of assistant medical officer of health at Ipswich, he became medical officer of health and school medical officer of Newcastle-under-Lyme. He took a temporary commission as lieutenant in the R.A.M.C. on June 25th, 1917, and was promoted to captain after a year's service.

Wounded.

Captain S. McC. Boyd, R.A.M.C. (T.F.).

Repatriated.

Captain T. E. A. Carr, R.A.M.C. (temporary).
 Captain A. B. Cluckie, R.A.M.C. (temporary).
 Captain D. F. Dobson, R.A.M.C. (temporary).
 Captain J. Findlay, R.A.M.C. (temporary).
 Captain R. A. Leembruggen, R.A.M.C. (temporary).
 Captain W. H. McCarter, R.A.M.C. (temporary).
 Captain J. G. Moloney, R.A.M.C. (temporary).
 Captain D. R. E. Roberts, R.A.M.C. (temporary).

DEATHS AMONG SONS OF MEDICAL MEN.

Raymond Treavor Wordsworth Howe, aged 18 years, son of Dr. Joseph Duncan Howe, of Preston, was drowned through the sinking of the ss. *Palmyra*, on which he was wireless operator, while on his third voyage to Lisbon. The vessel left the Mersey on August 21st, 1917, and was torpedoed by an enemy submarine about noon on the following day, when about thirty miles south-west of Holyhead. The body was recovered a month later on the Cumberland coast. Dr. Howe had previously lost a son in the war.

[We shall be indebted to relatives of those who were killed in action or died in the war for information which will enable us to make these notes as complete and accurate as possible.]

HONOURS.

The Emperor of Japan has conferred the Order of the Sacred Treasure, First Class, upon Surgeon Vice Admiral Sir William H. Norman, K.C.B., Director-General, Medical Department, R.N., in recognition of distinguished services rendered during the war.

Surgeon Lieutenant Neville H. Smith, R.N., has received the Croix de Guerre awarded by the President of the French Republic for distinguished services rendered during the war.

The names of Lieut.-Colonel T. McDermott, R.A.M.C., and Lieutenant F. Evans, R.A.M.C. (T.F.), have been brought to the notice of the Secretary of State for War by Major-General F. C. Poole, General Officer Commanding, North Russian Expeditionary Force, for valuable and distinguished services rendered in connexion with the operations in North Russia.

A special Supplement to the *London Gazette* dated January 22nd contains a list of names submitted by General Sir E. H. H. Allenby, Commander-in-Chief, Egyptian Expeditionary Force, as "worthy of mention for their services during the period from March 16th, 1918, to September 18th, 1918." The list includes some sixty-nine medical officers of the A.M.S., R.A.M.C. (Regular, Special Reserve, and Territorial), Indian Medical Service, and Colonial Medical Services, as well as some sixty-four warrant and non-commissioned officers and men of the R.A.M.C. and Dominion Medical Services, and five members of the Indian Subordinate Medical Department.

Captain J. D. Shapland, R.G.A., son of Dr. John Dee Shapland of Brixton Hill, has been awarded the Military Cross for services rendered with the Salonica force.

England and Wales.

THE LIVERPOOL MEDICAL INSTITUTION.

THE report for the year 1918, presented to the annual meeting of the Liverpool Medical Institution on January 16th, states that the number of members has diminished, owing to deaths and resignations during the war; but it is confidently anticipated that with the return of normal conditions there will be a large influx of new members. The library, to which numerous additions were made, has been largely used by medical members of the Overseas Forces and officers of the United States Medical Corps, who have also attended meetings in response to a welcome extended to them by the council. The Institution has decided to promote a memorial to the late Hugh Owen Thomas, the Liverpool surgeon famous throughout the world for his pioneer work in orthopaedics, and as the inventor of the splints which bear his name. A committee has been appointed, and will make an appeal early in the year. It is hoped to endow an oration to be delivered in the Medical Institution, and also to provide a bust, or some other permanent and visible memorial, of Mr. Thomas. The following list of officers and members of council was adopted. Those marked with an asterisk did not hold the same office last year.

President: W. Thelwall Thomas
Vice-Presidents: K. W. Monsarrat, L. Morgan, *Hubert Armstrong, and *A. Craigmile.
Treasurer: C. Thurstan Holland.
General Secretary: W. Murray Cairns.
Secretary of Ordinary Meetings: T. C. Litle-Jones.
Secretary of Pathological Meetings: H. Leith Murray.
Librarian and Editor of the Journal: R. W. MacKeena.
Council: J. H. Abram, P. S. Heaney, Mary B. Lee, C. J. Macalister, Courtenay Yorke, *G. C. E. Simpson, F. W. Buley, *J. Martin Beattie, *Owen Bowen, *Frances Ivens, *F. C. Larkin, and *R. G. Sheldon.
Auditors: *Reginald T. Bailey, *F. S. Heaney.

AMENDMENT OF THE LAWS AS TO MENTAL DISORDER AND DEFECT.

At a conference of visiting committees of the asylums in England and Wales, held at the Guildhall, London, on October 29th, 1918, a committee was appointed to draft recommendations with regard to amendments necessary in the Lunacy Acts and the Mental Deficiency Act. A report has now been circulated and will be considered at an adjourned meeting of the conference at the Guildhall on February 5th, at 3 p.m. The committee was unanimous that the present lunacy laws had been passed with little or no regard to securing proper treatment in cases of incipient insanity, so that many persons, owing to the objection of their relatives to the necessity of certification, were kept in their homes so long that when ultimately sent to an asylum their cure, which might have been effected by early scientific treatment, had become hopeless. The committee will advise the conference to express in the strongest possible terms its opinion that the laws in question are effete and that their drastic amendment is a matter of urgent national importance. The committee advised that the words "pauper," "lunatic," "lunacy," and "asylum" should be deleted from the laws, and recommended that encouragement should be given to the establishment by local authorities of special mental hospitals for treatment either of incipient or actual mental disease, each with an in-patient and out-patient department; no patient attending either the in-patient or out-patient department should be placed under certification until it became necessary in the opinion of the medical director of the hospital to transfer the patient to an institution now known as an asylum. It was recommended that such special mental hospitals should not be subject to the supervision of the Board of Control and that no report should be made to that Board concerning any patient under treatment in such a hospital. It also advised that a special mental hospital (psychiatric clinic) should be established in connexion with every medical school and proper facilities provided therein for research and for teaching and training. Another recommendation was that voluntary boarders should be admitted to the institutions now known as public asylums. The opinion was expressed that every medical officer appointed to any institution for the care and treatment of the mentally afflicted should be required within a period of two years from his appointment to hold

a recognized diploma showing that he is specially skilled in the science and cure of mental ailments. Among the members of the committee were Dr. E. Goodall, medical superintendent of the Cardiff Mental Hospital; Dr. T. Shaw Bolton, medical superintendent of the West Riding Asylum, Wakefield; Dr. R. C. Stewart, medical superintendent of the County Lunatic Asylum, Narborough; and Dr. W. F. Nelis, medical superintendent of Newport Borough Asylum.

MEDICAL TREATMENT OF SCHOOL CHILDREN IN LONDON.

At its meeting on January 21st the London County Council agreed to extend considerably the provision of medical and dental treatment for school children. The principal need was stated to be an increase of accommodation for treating minor ailments and dental cases. Last year 25 centres were utilized for the treatment of minor ailments, but the return of attendances of children at the centres was 4,000 in excess of the number provided for during the recent half-year. For 1919-20 the total number of centres will be 40; this will provide for the treatment of 37,840 cases. The provision of dental treatment is to be for 100,980 cases at 49 centres, instead of 87,780 cases at 44 centres; while the provision for the treatment of eye defects will be for 29,640 cases at 27 centres; of ear, nose, and throat defects 14,840 cases at 23 centres, and of ringworm 2,138 cases at 11 centres. The total cost of the treatment in 1919-20 is estimated at £52,450, an increase of £8,000 upon the amount for the current year. The special provision for the medical and dental treatment of children holding scholarships in secondary and trade schools is also being amplified.

Correspondence.

THE MORTALITY OF CASES OF FRACTURED FEMUR.

SIR,—In your issue for January 11th you have a review of *The Early Treatment of War Wounds*, by my friend Colonel H. M. W. Gray, and in it I find this statement: "Whereas in the earlier part of the war the mortality of cases of fractured femur was 50 per cent. in the casualty clearing stations, it dropped . . . in 1917 to 15.6 per cent."

Colonel Gray did not take up the work of a consulting surgeon at the front till the summer of 1916, so it is evident that the "50 per cent. in the earlier part of the war" was not a matter of his own observation. Who is responsible for the figure I do not know, but, whoever he is, the statement is quite incorrect.

During the summer of 1915 I personally collected, and I still have in my possession, the records of 1,008 cases of fracture of the femur, this being practically the total number passed through all the casualty clearing stations then at the front, and the average mortality of the whole was exactly 16 per cent. in the casualty clearing stations themselves; 4 per cent. more had died in the field ambulances, so that the total mortality at the front was 20 per cent.

I subsequently ascertained that the mortality at the base hospitals in France and in England had been approximately another 20 per cent., giving a total death-rate of 40 per cent.

The period of observation covered the fighting of Neuve Chapelle, Hill 60, the second battle of Ypres, and Festubert; all in 1915.

At the present time, as a result of improvements of many kinds, and due to many surgeons, I believe the total mortality is considerably less than 20 per cent., including both the front and the base.—I am, etc.,

G.H.Q., France, Jan. 14th.

ANTHONY BOWLBY.

GLYCOSURIA IN ELDERLY PERSONS.

SIR,—In his interesting article on the climacteric of life, in the *JOURNAL* of January 18th, Dr. Guthrie Rankin supports the view that a moderate amount of sugar in the urine of elderly people need not cause alarm; it has, however, been my unfortunate experience to meet with a good many tragedies directly attributable to its acceptance. It is no doubt true that "many patients may live in comfort and do a fair amount of work over many years with sugar constantly in the urine," but it is equally true that many

suffer from complications, such as neuritis, boils, eczema, gangrene, etc., and a considerable proportion eventually die of coma, as happened to the illustrative case (G. D.) quoted by Dr. Rankin. There appear to be at least two types of case, chemically and pathologically as well as clinically, and the difference depends largely on the sugar content of the blood. In my experience even a moderate excretion of sugar associated with hyperglycaemia always leads in the course of time to complications, whether the patient is old or young, whereas glycosuria unattended by an excess of sugar in the blood under test conditions is not likely to give rise to trouble or shorten life, especially if, as happens so often in elderly people, the reducing substance in the urine is not really a sugar but the ketonic acid I have described under the name of "pseudo-laevulose." Before coming to the conclusion that a "glycosuria" is of small moment, therefore, it is advisable to make sure of the nature of the "sugar" and also to determine whether the blood sugar varies only within normal limits. When these points have been definitely ascertained the treatment can be adapted accordingly and a reliable prognosis offered.

Dr. Guthrie Rankin's experience of the modern method of treating diabetes seems to have been rather unfortunate, for I find that a recurrence of the glycosuria is exceptional and does not occur if the diet is correctly balanced as regards fat and protein, as well as carbohydrate, and the patient is properly trained in its use. I agree that elderly people do not stand starvation well, but as a rule actual fasting is not necessary to secure a normal blood sugar and a sugar-free urine if a carefully arranged system of dieting is followed. The secret of success is individualization of the treatment and education of the patient, so that he may follow his diet intelligently, and it is for lack of these precautions, and in consequence of a too rigid adherence to a set formula of treatment, I am convinced, that some have the unhappy experience of being "again, and yet again, cleansed in the purgatorial fires," as Dr. Rankin picturesquely puts it.—I am, etc.,

London, W., Jan. 20th,

P. J. CAMMIDGE.

INCREASED GRANTS TO INSURANCE PRACTITIONERS.

SIR,—Dr. Savege (JOURNAL, January 11th, p. 57) expresses the opinion that the rural practitioner who dispenses all his own medicines is going to enjoy a very considerable advantage in the increased grant allocation over the practitioner who happens to reside within a mile of a chemist or two. May I remind him that a large number of panel doctors who are fortunate enough to have a chemist in their neighbourhood do not dispense at all, certainly not for insured persons? They have given it up since the Act was passed, as it was a dead loss to them. In Northumberland no doctor who dispenses for panel patients has ever had more than 1s. 6d. a head per annum, and since January, 1917, we have received only 1s. a head. This month we have received a sum out of the drug fund representing what we were paid short in 1917, but it does not represent 1s. 6d., but is nearer 1s. 4d. for that year. Men who do not dispense at all, and men who do part dispensing only, I think do not, indeed cannot, know the time wasted, the worry, trouble, and expense of the man who is obliged to make up and send out nearly the whole of his medicines. To take my own case—and there must be many such—I have for a long number of years before the Insurance Act been in the habit of sending bottles, etc., by post, by hand by rural postmen, by rail, by tradesmen's and carriers' carts, etc., and have been accustomed to pay these various people for doing it. These items, small in themselves, but frequent, have run me into something like £20 and more every year. Since the Insurance Act I have continued to do it even for insured people, as it was practically impossible to stop doing so. How, indeed, are people from three to eight miles away going to get their medicines otherwise? It is impossible to collect these small sums individually from the people, so we let it go.

At the end of every long day one has to begin putting up bottles, labelling, and packing for post or rail; all this takes time. Frequently after returning from a long morning round I have to pack up bottles for the post, which leaves at 4.30 p.m., the only one we have, before I can get away on my next round. My servant every morning has to go out early with medicines for the

different rural postmen, and somebody has every day to watch for carts, etc., likely to convey medicine to some outlandish spot. This all means valuable time gone when one might be better employed. Our troubles do not cease with simply filling the bottle.

For finding all drugs, bottles, wrapping, cost of carriage, time, and vexation, we in Northumberland get something under 1s. 6d. a head for the insured person. I do not think many of us would be left dispensing if we had a chemist about. I do not think Dr. Savege should begrudge any little extra pay we may get for what we do. The interests of the rural doctor were quite forgotten when the Insurance Act was framed, and he has had to fight his own battles with the Commissioners, and at every Panel Conference in London, and it is solely through his own efforts that his voice has been heard. Now there seems some chance of his coming into his own.—I am, etc.,

Folton, Northumberland, Jan. 12th.

ROBERT A. WELSH.

A SCHEME FOR AUXILIARY CIVILIAN HOSPITALS.

SIR,—For an efficient medical service there are needed new institutions for several purposes: Hospitals for incipient insanity, farm colonies for tuberculous disease, infirmaries for advanced tuberculous patients, convalescent homes. I wish to suggest the formation of hospitals for the less severe illnesses, which at the same time require rest in bed and nursing; such hospitals would bear somewhat the same relation to the present voluntary general hospitals that the auxiliary military hospitals bear to the central military hospital. Examples of cases for which they would be suitable would be: Some acute febrile diseases, gastric ulcers and other gastro-intestinal diseases; infantile complaints (errors in feeding, marasmus, diarrhoea); miscarriages, midwifery cases; ulcers, fistulas, abscesses, and other minor surgical cases; simple fractures; and chronic cases transferred from the central hospital. That is, the patients would be such as require rest in bed and nursing and minor operations, but do not require the special skill, experience, and equipment which are obtainable at our present hospitals.

1. *Construction and Equipment.*—The immense number of wooden and other huts which will presently be at disposal could be utilized; the ideal plan would be to have a house with ground adjoining, the house forming the administration block, the huts being placed in the ground to form the wards, ward kitchens, lavatories, and latrines; the need for providing for male and female patients makes the design rather more complicated than is the case with a military hospital. The beds and other equipment could be provided also from those no longer needed by the army. The temporary nature of the wards would be an advantage, as it would enable changes to be made according to experience. The very solid and expensive method of building hospitals in the past has been a fruitful cause of delay in much needed reform.

2. *Finance.*—Voluntary military hospitals have been successfully financed on the basis of a payment of 3s. to 3s. 6d. per occupied bed a day, but this has only been possible because a very large amount of the work in both wards and kitchen has been performed voluntarily and with the help of subscriptions. Kitchen work and cleaning (by ward maids) would under the scheme proposed be performed by paid labour, and 4s. 6d. to 5s. should therefore be allowed per bed a day. The rent and upkeep of the buildings should be provided by the municipal authority, which would receive a grant of 50 per cent. from the Ministry of Health, and the sum payable per patient should be shared between the Insurance Commission and the municipal authority.

3. *Medical Staff.*—The medical staff would be all the doctors in the area, each attending his own cases. National insurance patients (probably in the near future including women and children) would be treated without extra fee, as the treatment would be less rather than more burdensome than when they had to be visited at their own homes. Private patients would be charged the usual fee. I would suggest a fee of £2 2s. for each operation requiring chloroform or ether, and £1 1s. if only gas was needed. These would be low fees for some operations, but fully adequate for others. If any doctor did not wish to operate or give an anaesthetic he would be at liberty to ask any other to act in his place. The fee should come from the same

source as the daily payment for patients, except in the case of persons having an income above a certain amount. Other special fees might be paid for sight-testing (5s.), and bacteriological examination (according to some acknowledged rates in general use). In addition to its use for in-patients, the hospital might be used for minor casualties, and operations on out-patients (insertion of sutures, and opening abscesses). This would greatly relieve the out-patient departments of the large hospitals, and would enable doctors to do far more for their own patients than at present.

4. *The Nursing Staff* should be on the plan of a V.A.D. hospital; to accomplish this it would be necessary to obtain the active interest of the Red Cross Society and the St. John Ambulance Brigade. There must be large numbers of V.A.D. nurses who would be willing to continue the work they have been doing (perhaps with shorter hours, and for a few weeks at a time instead of continuously); it would be a means of keeping active one of the many forms of useful voluntary work which the war has brought into being. No suspicion of charity should be entertained in regard to this any more than with many other forms of voluntary work: a certain number of the patients might well be the sick and wounded soldiers for whom the V.A.D. nurses have already been working.

5. *Administration*.—There would be a paid matron, sisters, and kitchen staff. The secretarial work might possibly be undertaken by those who have had experience of this work in V.A.D. hospitals, or might have to be paid for as part time work by a clerk.

6. *Management*.—A Committee of Management should represent the medical staff, the V.A. detachment, the municipal authority, the Insurance Committee, and the townspeople; the help of an active member of the committee of a general hospital would be a great advantage.

Hospitals on the lines sketched above would be a boon to many patients at present unable to be properly cared for in their illnesses; they would relieve the strain on the present voluntary hospitals, and would take from these the slighter and more chronic cases which occupy the beds, but do not need specially skilled treatment; they would be an advantage to doctors in that they would enable them to take a greater interest in their work, to do more themselves for their own patients, making it possible for every doctor to have some hospital work, and they would utilize the services of those who have begun to have some knowledge of nursing as members of voluntary aid detachments, and whose experience would otherwise be lost.—I am, etc.,

F. CARR BOTTONLEY, M.D.Camb.

Boscombe, Hants, Nov. 28th, 1918.

GRATUITIES OF TERRITORIAL MEDICAL OFFICERS.

SIR,—I have noted with interest the remarks in your columns on the Army Order of November 29th, 1918, and its effect on the gratuities of the Territorial medical officers. The R.A.M.C.(T.F.) is, I think, the only corps in which temporary rank is not granted.

I suggest that it would be fair if an Army Order were issued that in the R.A.M.C. gratuities on acting rank would be issued to all officers who had held such acting rank for six months and still held it on demobilization or on November 11th, 1918.

Owing to the variable policy of the War Office, it was largely a matter of chance whether an officer got temporary or acting rank in the R.A.M.C.(T.F.)—in fact, some of the more fortunate got permanent promotion where others for the same work obtained only acting rank.

What the future fate of the Territorial Force may be intended to be is not yet announced. What the fate of the R.A.M.C.(T.F.) and (S. Reserve) will be unless there is retrospective redress or general conscription is obvious.

In your issue of January 18th (p. 88, "The Services") you publish an Army Order with reference to acting Majors T.C., and there was a similar order about a year before regarding acting Lieut.-Colonels T.C. This order shows, I think, what the intended policy was with regard to T.F., S.R., and T.C.—unless, indeed, it was part of a deliberate policy, as is suggested by your correspondent "Contemptible T.F. M.O."

But it might interest the Association and the T.C. officers to note that a contract was broken when the £60 gratuity was withheld. Would a court of law assess damages at the amount promised under this Order?—I am, etc.,

January 22nd.

T.F. RESERVIST.

MEDICAL DEMOBILIZATION AND RESETTLEMENT.

SIR,—The scheme under which the rival claims of medical officers for demobilization will be adjudicated has now been published, and also leading articles have appeared in the medical press pointing out how best the medical officers who return to nothing can reasonably hope to become established. It is opportune, therefore, to offer certain comments.

Age.—Why does the scheme stop at 45? Is an officer of age 50, 55, or even 60, equally able to re-establish himself in practice as another of age 40? Only one additional point is given him. This is an impossible task for the senior officer, and therefore he is entitled to special consideration. On the combatant side "every officer of 51 years and over" can at once claim his demobilization in accordance with the War Office decision of January 5th, 1919, and every medical officer over that age should be similarly treated.

Service.—Many medical officers, although they may have held a commission for four or even more years, yet have never been away from their practices, but have drawn their military pay, retained their practices, and with the best intention in the world have obtained newly arrived families as permanent patients. The colleague medical officer absent for a similar period of time may have to start again through no fault of his own; the stay-at-home has financially improved his position. Yet no allowance is made in the committee's scheme for absence on military duty.

Volunteers.—No difference is made between a medical officer who volunteered and another who had to be dragged into the army. Both classes are treated alike. Surely the scheme fails here also.

These omissions should be included at once amongst the six additional points for which extra points are allowed, every six months of absence obtaining at least three points.

Then with regard to the question of re-establishment. The Association should take steps to ensure that positions for medical officers in the Ministries of Pensions, National Service, and Labour should be offered to returned medical officers, if they ask for a temporary or permanent post, in preference to all civilian practitioners; and, what is more, that the latter should be discharged from these duties directly a returned medical officer is available and requires something wherewith to carry on. Committees of hospitals, etc., should be urged to give preference to demobilized medical officers.

The Central Medical War Committee would be well advised at once to appoint a small energetic and sympathetic subcommittee, whose reference should be to assist in every way possible the re-establishment of returned demobilized medical officers who may find themselves in need of such assistance in the difficult situation they are bound to find themselves in. Better still if one of the demobilized hard-hit medical officers is given the secretaryship and a few of his colleagues are placed on the committee. Until all are established once again, the duties of such a committee cannot be considered to have ceased. It would be a grand thing if that committee also had included in its reference assistance to medical officers in pressing every claim possible before the Minister of Pensions for injuries or diseases caused or aggravated by military service.

For obvious reasons I enclose my card, signing myself, Yours, etc.,

January 14th.

CARRY ON, R.A.M.C.

SIR.—The question of demobilization is naturally exercising the minds of those military medical officers who are anxious to return to civil life as early as possible. So far as I am able to gather from the various memoranda which have been published on the subject, very little consideration is to be given to those medical men who have not got actual practices to return to. If this method is to be

adhered to, considerable hardships will be caused to those younger men who at the commencement of the war were students or only recently qualified, and who came forward and offered their services to the Government at once. The majority of these men have never had the opportunity of obtaining clinical experience, and many have still courses of study to complete for university degrees.

It would seem to be of the highest importance to the State that such men should be given an opportunity to make themselves efficient practitioners. If it is not practicable to demobilize medical officers in order of their length of service overseas—the only fair method—would it not be possible to consider all men intending to take up resident house appointments or to continue classes for a definite degree as coming under Group 43 (students), and release them from the army at once? I would further point out that although more than two months have elapsed since the signing of the armistice, the Ministry of National Service has made no efforts to ascertain the wishes and claims of medical officers in this country regarding demobilization. On the other hand, instances have come to notice where the Ministry has demobilized not only men whose wishes were never consulted and who were actually desirous of remaining a little longer in the army, but also men whose age and service gave them little grounds for consideration.—I am, etc.,

G. F. P. GIBBONS,
Major R.A.M.C.(S.R.).

B.E.F., Jan. 11th.

SIR,—I wish to record a protest against the heavy and unfair penalization of men with whole-time appointments in the public health service by the system of precedence outlined in the SUPPLEMENT of January 11th. It is equivalent to over two years' service, or fifteen years of age, or possibly more in certain cases.

A man in a public service may have a job to go back to, but he has lost so many years of seniority through the war, and the position to which he returns is certainly of much less value than one to which he would have attained but for the war, which is practically equivalent to a heavy financial loss.

The great majority of general practitioners should be able to receive the bulk of their practice owing to the real shortage of medical men in civil life, apart from the fact that many have received a part of the proceeds of their practice while in the army, while most whole-timers have received nothing.

The whole-timers may not have lost as much income as the general practitioners, because they had it not to lose, but they will be much worse off than they were because they cannot increase their salaries as the practitioner can his fees to recoup his loss. Time is of great value to us personally, as it is a dogma of our service that a man rarely receives a better appointment after he is 40.—I am, etc.,

PUBLIC HEALTH OFFICER AND CAPTAIN R.A.M.C.

January 12th.

SIR,—The proposals for the demobilization of medical men under the age of 30, outlined in Part II of the scheme prepared by the Central Medical War Committee, constitute such a violation of accepted principles that it is surprising that the Ministry of National Service should have thought fit to adopt them.

Nobody can reasonably take exception to the general proposal that the older men should be demobilized first. But the arbitrary decision to release every man of 30 and over, before men slightly junior in age, without regard to rank, length of service, and date of qualification is so palpably unjust, that a modification of this ruling is surely called for immediately.

Under existing conditions a man of 29 who qualified a year ago, and who has had but twelve months' service in the army, will actually take precedence of other men who, by qualifying young, have been able to give their services to the country continuously since the commencement of the war. Neither by reason of length of service nor in virtue of any experience in professional work has such a man the slightest right to early demobilization.

The Ministry of National Service ought to realize that in disregarding long and continuous service in the case of medical men under 30, it is subverting a principle which is being universally applied, and which every medical officer

of four years' service has naturally assumed would govern the conditions of his own release.—I am, etc.,

B.E.F., Jan. 17th.

W. R. H.

GONORRHOEA AND DEMOBILIZATION.

SIR,—I read with surprise and dismay the letter by Mr. Macalpine on the above subject which appeared in the JOURNAL of January 18th, p. 87. He suggests that each man on demobilization should be compelled (*sic*) to micturate in the presence of the M.O. so that a search for threads in the urine might be made and probable victims of gonorrhoea thus detected.

I wonder if the author of this letter has given serious consideration to the amount of injustice and irreparable harm, with little benefit, that would accrue from the adoption of such a procedure. A vast army of gonorrhoeal hypochondriacs already exists—men melancholic and introspective, men who are perpetually squeezing and milking the penis for secretions and searching eagerly in the urine for threads. What effect would it have upon such men if it was brought to their notice that the M.O. attaches great importance to these threads, and, what is more, their freedom depends upon their presence or absence?

At the present time, when victims of venereal disease are compelled to report sick, what proportion do? Some surreptitiously swallow capsules by the hundred, others seek outside advice, and others "carry on" trusting to *vis medicatrix naturae* for ultimate cure, but never report. How many, then, would present themselves for urine examination? If they did, what subterfuges would be adopted by the knowing to disguise the test. And the test itself, what value would it be? One might as well suggest that each man should expectorate in the presence of his M.O., his discharge or detention to depend upon the nannular character of his sputum.

The crux of the whole matter lies in the infectivity of the individual—namely, whether he harbours the gonococcus or not, and threads in the urine are not of pathognomonic significance.

When we consider that about 80 per cent. of the population have had gonorrhoea and that a vast number of men pass threads who have never had the disease, and, finally, when we note the present phase or craze for irrigations, thus irritating the delicate urethral mucous membrane into shedding its epithelium, one can readily see of what value ocular inspection of the urine would be.

A more feasible procedure would be to give each man on discharge a pamphlet advising him, if he has or ever had the "clap," to seek advice at a clinic or from a venereologist. Then an expert could carry out a proper examination; the true significance of a thread can only be determined after a careful exploration of the seminal vesicles and prostate, without and with gentle massage of these organs (in case of sealed prostatitis), examination of Cowper's and Tyson's glands must be made, and patient microscopic search for the gonococcus in all discharges. An olivary bougie ought to be passed in order to detect any signs of infiltration (soft or hard); and, finally, a careful urethroscopical examination of the whole urethral mucous membrane must be made, when often pathological changes can be detected not recognized by any other means. A man must also be questioned as to his marital relation; he must be warned of the possibility of having infected his wife, and so reinfecting himself. The whole problem bristles with difficulties, but if this scourge is to be eradicated the female element must be considered as well, and often, with a little tact, the patient will get his wife to seek medical advice. The treatment of venereal diseases has for decades been subterranean, and in the hands of the unqualified; it is now emerging from that atmosphere, the public and the medical profession are beginning to consider these diseases in the light of other diseases, and an opportunity is now presenting itself to raise the standard of this specialty.—I am, etc.,

Manchester, Jan. 18th.

M. W. BROWDY, M.B.

RISKS AND REWARDS.

SIR,—With reference to the letter by "Fairplay" on this subject (BRITISH MEDICAL JOURNAL, January 4th, p. 25). I think his remarks are more suitable for publication in a military than in a medical journal. It is the custom in the

army that periodical rewards should be given whenever there is a war in progress, but these are given on a fixed system.

Rewards can be divided into two classes: Those most worth having are the immediate awards—the V.C., D.S.O., and M.C., for valour. In addition, a certain number are given for general good service. As far as the risks go, the man who does the dirtiest and most dangerous work, and gets least pay and rewards, is the infantry soldier, so that the R.A.M.C. is not the only branch of the service that may have a grievance.

Rewards other than immediate are given chiefly to certain appointments, such as those of D.M.S., D.D.M.S., A.D.M.S. and their staffs: ambulance and hospital commanders, and consultants.

In an ordinary group of medical officers a few have exceptional merit, a few are exceptionally bad, but the majority have a fairly uniform standard, and as the ordinary military work is very cut and dried it is very hard to choose amongst the majority class. Selection, therefore, naturally goes by seniority and responsibility, and I have found that temporary officers are just as keen on seniority as anybody else quite irrespective of age and medical experience.

That commanding officers should get most of the rewards seems only fair, as if things go wrong they get the blame. In the R.A.M.C. the regulars get most of the administrative appointments, as they are not only the seniors but have had the most experience.

The point I wish to make is that rewards have been for years, and still are, given on a system prevailing in the army. Whether this system is right or wrong may be a moot point, but the regular R.A.M.C. is not responsible for it. As a matter of fact the majority of awards are selected by combatant officers, and not by the R.A.M.C. at all. The regular R.A.M.C. have come in for abuse lately, but I do not think they should be blamed for the system of giving rewards, so long prevalent in the army, and for which they are in no way responsible.—I am, etc.,

B.E.F., Jan. 14th.

UNDECORATED REGULAR.

"RURAL WATER SUPPLIES AND THEIR PURIFICATION."

SIR,—Your reviewer, in his kindly notice of my little volume on *Rural Water Supplies and Their Purification*, unintentionally does me a slight disservice, for which I am perhaps to blame for not having made my intentions absolutely clear to the reader. Thus he says:

The practical sanitarian will, however, ask himself whether Sir Alexander Houston has not taken too narrow a view of the whole problem, and whether it would not be better to improve the whole supply at its source by structural alteration of the filtration plant, etc., rather than every day to treat 10 gallons in a cistern.

I am, of course, entirely in favour of public water supplies and in communal and collective effort to accomplish water purification. My little book was written with the avowed object of trying to help those who, as regards water supply, are cut off from collective aid, and are obliged as individuals to make the best of existing circumstances. I quite agree, however, with your reviewer when he says:

One lays down the book with the feeling that water purification, which can be easily accomplished by communal and collective effort, presents great difficulty to the individual.

It was this feeling that induced the author to say in conclusion:

In this brief account of Rural Water Supplies and their Purification the author has doubtless failed in many particulars, but if the reader cares to write and explain his (or her) difficulties, or to offer any suggestions or criticisms, the author will endeavour to answer any such communications to the best of his ability.

—I am, etc.,

London, Jan. 21st.

A. C. HORSFORD.

ANTE-NATAL TREATMENT OF VENEREAL DISEASES.

SIR,—I would just like, with your permission, to say that, as far as I can remember, no one in the speeches that were made at the London Hospital claimed that it and the Thavies Inn were the only places where residential treatment was provided for ante-natal treatment of venereal disease. Any of us would, I am sure, have deeply regretted

to have said anything which could detract from the merit of the pioneer and excellent work done by the Lock Hospital, in this or any other direction—work done under great difficulties during many years when no other hospital was treating these cases. All credit to that hospital.—I am, etc.,

London Hospital.

KNUTSFORD.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The University Senate on January 17th gave approval by 162 votes to 14 to the report of the special syndicate on the re-arrangement of the Previous Examination, Part I, according to which Greek is made an optional subject, together with certain modern languages. The additional subjects of the "Little-go" are also abolished.

Dr. W. H. R. Rivers, F.R.S., formerly University Lecturer in Physiology and Experimental Psychology, has been appointed to the newly-created post of Praelector in Natural Sciences at St. John's College.

The following medical degrees have been conferred:

M.B. AND B.CH.—H. T. H. Butt.

M.B.—S. Riddiough, L. G. Higgins, P. K. Liang.

UNIVERSITY OF EDINBURGH.

At the meeting of the University Court on January 13th, when the scheme for the establishment of a Chair of Mental Diseases in the University to which reference was made last week was approved, the Dean of the Faculty of Medicine reported that Dr. R. Murray Leslie of London (ettles Scholar in Medicine in 1892) had provided an endowment for a gold medal in connexion with the Ettles scholarship in medicine, in memory of his mother, to be known as "the Leslie gold medal in medicine." The Court recorded its cordial thanks to the donor.

At the same meeting the following additional examiners were appointed or reappointed: Dr. Dawson Turner (Medical Physics) G. P. Yule, M.A., B.Sc. (Public Health), Professor Farmer (Botany), Professor J. P. Hill, F.R.S. (Natural History), Dr. A. Lauder (Chemistry), Professor J. A. Gunn (Materia Medica), J. H. Pringle, M.B., F.R.C.S. (Surgery); Professor A. Donald (Midwifery).

CONJOINT BOARD IN SCOTLAND.

The following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—*Medicine*: D. A. Stegman, T. F. Minford, J. M. Speirs, R. L. Wright, J. A. S. Campbell. *Surgery*: W. Gibb, J. A. S. Campbell. *Midwifery*: Hassan Amin Madwar, T. F. Minford, G. A. Stanley, J. M. Speirs, R. L. Wright, S. H. Waddy. *Medical Jurisprudence*: D. A. Stegman, W. Carew, V. Ravagnan Katheravelu Paramanayagam, D. Mackay, G. Beveridge, L. H. Peries.

The following candidates, having passed the Final Examination, have been admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

L. Samuels, W. F. Gawne, Lachman Singh Ahluwalia, A. K. Towers, V. A. Rankin, J. V. Griffith, G. A. Grandcourt, Q. Stewart, W. B. Watson, B. Cheifitz, R. I. Dugale.

Obituary.

DEPUTY SURGEON-GENERAL JAMES HOWARD THORNTON, K.C.B., Bengal Medical Service (retired), died at Hove on January 6th, the day before his 85th birthday. He was the son of Major James Thornton, of the 78th Foot, now the 2nd Battalion of the Seaforth Highlanders, the Ross-shire Buffs. He was educated at Chatham House, Ramsgate, and at King's College, London; he graduated B.A. Lond. in 1854 and M.B. in 1855, and took the diploma of M.R.C.S. the same year. He entered the I.M.S. on January 9th, 1856, having won the appointment of assistant surgeon, which was given to King's College for competition by Mr. W. H. Melville, one of the Directors of the East India Company. He became surgeon on January 9th, 1858, surgeon major on July 1st, 1873, brigade surgeon on March 1st, 1882, and deputy surgeon-general on June 30th, 1886, retiring on August 13th, 1891. His service in India was spent alternating between civil employment in Bengal, where he held the civil surgeoncies of Shababad (Arrah), Monghyr, and Bankura, and military duty. He had a very long record of war service: Indian Mutiny, 1857-59, action of Benares, relief of Arrah, capture of Jagdeespur, action of Surajpur, defence of the Alamnagh, outside Lucknow, capture of Lucknow, and operations in Oudh and Gorakhpur; was mentioned in despatches in the *London Gazette* of October 13th, 1857, received

the Mutiny medal with two clasps, and a year's service for Lucknow. China 1860, action of Sinho, capture of the Taku forts, and occupation of Peking; medal with two clasps. North-East frontier of India 1862-63, Khasia and Jantia Hills campaign, wounded; mentioned in dispatches. Bhutan war, 1865-66, forcing of Durunga pass, capture and recapture of Dewangiri; medal with clasp. Egypt, 1882, medal and Khedive's bronze star. Soudan, 1885, Suakin, as principal officer of the Indian contingent; mentioned in dispatches, *London Gazette*, August 25th, 1885, clasp and C.B. North-West frontier of India, Hazara campaign of 1888, as principal medical officer; mentioned in dispatches, clasp. He received a good service pension on December 8th, 1886, and was created a K.C.B. on June 24th, 1904. He recorded his varied war services in a work entitled *Memories of Seven Campaigns*, published in 1895.

MAJOR MILES CHARLES CARISTON SETON, Australian A.M.C., who was shot in London on January 13th, was the representative in the male line of the family of Seton of Cariston, in Fife. He was born in 1874, and educated at Edinburgh High School and University, where he graduated M.B. and C.M. in 1900, also taking the diploma of F.R.C.S.Ed. in 1908. As a student he distinguished himself in athletics, and won the half-mile championship of Scotland. After graduating, he served as a civil surgeon in the South African Field Force and as a captain in the Cape Medical Staff Corps, and received the King's and Queen's medals. After the war he practised for some time at Calvinia, in Cape Colony, and, after a visit to Scotland, subsequently went out to Australia, where he was in practice at Melbourne, and honorary anaesthetist to the Alfred Hospital, Melbourne. In 1915 he joined the Australian Army Medical Corps, in which he served in Egypt and England, and was promoted to major towards the end of 1918.

CAPTAIN ALEXANDER GEMMELL, D.Sc., an analytical chemist employed in anti-gas research, has died as the result of experiments in atmosphere charged with poison gas. Captain Gemmell, after commanding the anti-gas school in the Scottish Command, was transferred in 1917 to the anti-gas department, London, and was engaged in research work under the late Lieut.-Colonel E. F. Harrison, C.M.G., whose lamented death took place early in November last, shortly after his appointment as Controller of the Chemical Warfare Department of the Ministry of Munitions.

PROFESSOR GUSTAVE BOUCHARDAT of Paris, well known for his researches on urea and sugar, died recently.

Medical News.

THE Belgian Government has appointed Professor Léon Frédéricq, of Ghent, who was imprisoned by the Germans for having declined to lecture in Flemish, to be rector of the University.

It is announced that the medical university at Peking now being erected by the Rockefeller Foundation at a cost of £1,200,000 will be opened not later than next October. Another medical university will be built at Shanghai.

MR. T. P. GOSTLING, formerly chairman of the Worcester Division and president of the Worcestershire and Herefordshire Branch of the British Medical Association, who is retiring from practice for reasons of health, was recently the recipient of a presentation, at a large meeting in the Guildhall, Worcester, presided over by the Mayor. The parting gifts, presented on behalf of more than 200 subscribers by Lady Hindlip, consisted of an illuminated address, a service of plate, and a cheque, and a set of diamond earrings to Mrs. Gostling. The Mayor, on behalf of the citizens of Worcester, spoke of the appreciation and the love and affection they all had for Mr. Gostling as a man and a doctor. Mr. Gostling was for twenty years honorary surgeon to the Worcester General Infirmary, and on his retirement last December his medical colleagues presented him with a silver salver.

At the meeting of the Medical Society of London to be held on Monday next at 8.30 p.m., a discussion on the modern treatment of gonorrhoea of the genito-urinary organs will be introduced by Colonel L. W. Harrison, R.A.M.C. He will be followed by Captain D. Thomson, Lieut.-Colonel R. Bolam, Major A. Campbell, Captain D. Lees, D.S.O., Captain David Watson, Mr. Campbell Williams, and others. Medical officers of the Colonial and Allied armies will be welcomed at the meeting.

A COURSE of four lectures on malaria will be delivered at noon on January 31st, February 7th, 14th, and 21st, in the Lecture Theatre of the Medical School, King's College Hospital, by Colonel Sir Ronald Ross, K.C.B., K.C.M.G., F.R.S., consultant in malaria at the War Office, and physician for tropical diseases, King's College Hospital. Officers and men of the Royal Army Medical Corps are invited to attend. Microscope specimens and lantern slides will be shown at the two last lectures.

A DISCUSSION on reconstruction in the teaching of obstetrics and gynaecology to medical students will take place at a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on Thursday evening, February 6th. Dr. Walter Griffith will open the discussion by a general survey of the subjects to be taught and the methods of teaching them. Dr. J. S. Fairbairn will follow with a paper on the training of the student from the standpoint of preventive medicine, and Dr. Lovell Drage will deal with the teaching of the student from the point of view of a general practitioner. Further particulars can be obtained from the senior honorary secretary of the Section (1, Wimpole Street, W.1).

THE council of the Royal Society of Medicine has arranged to have a meeting every Wednesday evening for the reception of medical officers of the Home and Dominion forces, and of America and our Allies. If it can be arranged, each evening will be opened by a short informal discourse. The first of these will be given by Sir John Bland-Sutton on Wednesday, February 5th, at 8.30 p.m. He will speak on "Gizzards and counter-foil gizzards," illustrating his remarks by specimens. At these meetings visitors will be free to raise and discuss any question in which they are interested, but the social side of the evenings will be emphasized. Tea and coffee will be provided and smoking will not be forbidden.

WHAT is termed "a mass meeting of the medical profession" has been called by the National Medical Union, at Wigmore Hall, Wigmore Street, London, on Sunday, February 2nd. The chair will be taken by Professor William Russell of Edinburgh, at 4 p.m. It will be proposed to form a provisional committee to arrange for the election of a body representative of the whole profession to watch its interests, and to be prepared to act in an advisory capacity in connexion with prospective legislation and the proposed establishment of a Ministry of Health.

SPECIAL branches of the employment exchanges for both employers and employed in every neighbourhood have been set up to deal with discharged men only, and in many instances special sections for disabled men have been established. A great part of the work is carried on by men in the same position as those whom they are helping back to civil employment. Of the discharged men who take part in this work a considerable proportion are themselves disabled. The loss of an arm, a leg, two legs, and even eyesight has not been found an insuperable obstacle to efficient work if willing employers can be found.

LAST July the Carnegie trustees offered to establish and equip a central institute for maternity and child welfare in Edinburgh. At a meeting of the Provisional Committee on January 17th the draft constitution was submitted dealing with the membership and administration of the institute, which, it was suggested, should be called "the Scottish Carnegie Institute." Steps are being taken to find a suitable site for the building.

Sanidad y Beneficencia, the organ of the National Public Health Service of Cuba, issued a special number (July-August, 1918) as a homage to the memory of Carlos F. Finlay, the first propounder of the view that yellow fever is transmitted by a mosquito. Dr. Juan Guiteras and Professor Aristides Agramonte contribute biographical sketches on Finlay, Drs. Claudio Delgado and Jorge Le-Roy an account of his scientific work, and Drs. Le-Roy and Cassi a bibliography of his publications. The number forms a solid volume of 197 pages, containing a summary of the literature relating to the man and his discovery.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *BRITISH MEDICAL JOURNAL* alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Aitology*, *Westrand*, London; telephone, 2651, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2650, Gerrard.

3. MEDICAL SECRETARY, *Medisecra*, *Westrand*, London; telephone, 2654, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

INCOME TAX.

SCOT inquires as to the method of adjustment of his assessment for 1918-19 in view of the fact that he sold his connexion and retired as from October 1st last.

* * "Scot" ceases to be liable to tax on his earnings as from October 1st, even though some accounts may be paid to him after that date—that is, he is liable for the first half of the financial year only. This does not mean that his correct liability is necessarily one half of the tax for the year, because his retirement would presumably reduce his total income for the year, and thereby might entitle him to a lower rate of income tax. He is adopting the correct course in informing the local surveyor of taxes of the facts, and the usual practice in such cases is, we understand, for the surveyor to compute the liability of the vendor of the practice for the first portion of the year and of the purchaser for the second portion, and arrange for the collector to apply to each person for his share of tax which is credited against the single assessment on the practice profits. We suggest that our correspondent might write to the surveyor again, and in the event of his again making no reply—which from our general experience would seem an unlikely contingency—an application for an adjustment of the assessment might perhaps be made direct to the Commissioners of Inland Revenue at Somerset House.

PUZZLED inquires as to liability to income tax in connexion with the sale of a house.

* * If the sale of the house is an isolated transaction, and the house was not bought with the intention of reselling, no liability to income tax attaches. If, on the other hand, a "profit" is realized, and the whole transaction was of the nature of a speculation made in the hope of profit, then our correspondent is apparently liable to income tax. Any expenditure on improvements would be legitimately deducted in calculating the profit on the selling price, as it presumably is, by the carrying out the improvements. In the instances mentioned the liabilities are—A nil, B nil, C £50.

LETTERS, NOTES, ETC.

THE process of demobilization is affecting members of the medical profession engaged in all types of practice; thus Major-General Cuthbert Wallace, C.B., C.M.G., surgeon to St. Thomas's Hospital, and Colonel Maynard Smith, C.B., surgeon to St. Mary's Hospital, having relinquished their appointments as consulting surgeons with the British armies in France, and Sir Nestor Tirard, physician to King's College Hospital, who has retired from the command of the 4th London General Hospital, have returned to civil practice.

TRANSPORT OF PATIENTS: DISINFECTION.

DR. J. LEWIS THOMAS (Tuberculosis Institute, Newport, Mon.) writes: Any one who has practised in a rural district has frequently been met by the difficulty of getting acute cases conveyed to the nearest hospital, and getting bedclothes and other infective material disinfected in septic cases. Would it not be possible to make use of the ambulance cars and disinfesting lorries which will shortly be available after

demobilization? It would be a great waste to scrap these useful vehicles when they might be of much use in the future to obviate the difficulties mentioned.

THE TREATMENT OF ACUTE PNEUMONIA.

DR. F. TRESILIAN (Enfield) writes: The recent influenza epidemic, which is now coming to a close, has given us fresh opportunities for seeing and treating acute pneumonia. I have tried various lines of treatment suggested at various times. The brunt of the epidemic in this district fell on the workers in factories and munitions, and on maid servants—that is, almost entirely on what one may call patients of the club and panel type. Owing to want of proper care and nursing, bad ventilation, dirty surroundings, and such contributory causes, most of the deaths were in the poorer class of houses; as one mounted upwards to better types of rooms, food, and nursing, one found a corresponding number of cases got well. A very great difficulty was to obtain any proper supply of suitable food, such as beef-tea, eggs, and milk and jellies. There were about eight deaths in my practice; two were in tuberculous persons with cavities of old standing, one was in a man discharged from the army for mitral and aortic valvular disease, but the compensation had been good, and he worked in a factory up to the day of his illness. All three of these cases died quickly. One death was in a child aged 2½, from empyema; the lung never expanded, though the pleural cavity drained thoroughly. One was in a man aged 80, with old mitral disease and failing ventricle.

I tried the much vaunted iodide and creosote mixture in two cases; they both died. It was commenced when the condition was diagnosed. Calcium chloride was tried in three cases, and they got better, but the best results I obtained were from a mixture of quinine and strychnine with syrup of orange or peppermint water. In two cases I added calcium chloride to this mixture. I think the combination of strychnine and quinine is the most trustworthy treatment of the present influenza pneumonia, which is undoubtedly a mixed infection. In two cases I used pneumococcus serum (Wright). They both recovered. One was a creeping pneumonia of the right lung, secondary to a basal axillary focus in the left lung. The temperature kept up owing to the extension from one lobe to another for about sixteen days. During that time I gave four injections of serum, each being followed by a fall of temperature and corresponding improvement. I have only seen two cases of influenza develop pneumonia while they were in bed. They were both of a mild type, and did well. There are two distinct types: the sthenic or wild type, and the asthenic or quiet type. In the former morphine or opium are very useful. The quieting effect they produce is very satisfactory. Many years ago, when I was an assistant in Yorkshire, I found that the medical men there treated nearly all their cases of pneumonia with opium (gr. j. three or four times a day). But that was in pre-influenza days. Ten grains of Dover's powder is still the most useful of all hypnotics in acute pneumonia, or gr. ½ of morphine.

PELVIC MEASUREMENT.

MR. WILLIAM R. MACKENZIE (Assistant Surgeon Samaritan Hospital, Belfast) writes: In the *BRITISH MEDICAL JOURNAL* of January 18th Mr. A. W. Bourne, F.R.C.S., in his interesting article on "Pelvic measurement in ante-natal clinics," states: "If measurement of the pelvis were a certain means of knowing the size of the brim, the examination and its judgement would present little difficulty, but unfortunately in the slighter degrees of contraction the measurements often give no true information," etc. May I refer him to "Remarks on roentgenographic pelvimetry," published in the *BRITISH MEDICAL JOURNAL*, June 1st, 1918, by which he will see that, having experienced the same difficulty with regard to uncertain measurements, I devised a method of pelvimetry which makes it possible not only to see the existence and extent of the pelvic contraction, both of the inlet and outlet, but also to measure its degree accurately, at the same time causing much less inconvenience to the doctor and patient?

LICENTIATES.

DR. J. C. McWALTER writes from Alexandria to express the opinion that Licentiates of the Colleges of Physicians and Surgeons should be given a voice in the management of college affairs. Any person holding a degree in a university has, he says, a share in its functions.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *vostis* *restante* letters addressed either in initials or numbers.

SOME POINTS ABOUT BONE GRAFTS.

[WITH SPECIAL PLATE.]

BY

LIEUT.-COLONEL W. I. DE C. WHEELER, F.R.C.S.I.

R.A.M.C.

SURGEON, MURTER'S HOSPITAL, DUBLIN.

Four years of war has provided such a plethora of material for the study of bone grafting operations that it is possible for surgeons to survey the field from the standpoint of considerable experience. Heretofore discussions about bone grafting have centred mainly round theoretical and academic questions, such as the rôle of the periosteum in the osteogenetic process, and the ultimate fate of the graft in its new position, the all-important clinical standpoint receiving but scant recognition.

So far as the osteogenetic power of periosteum is concerned, the controversy largely appears to hang round the point, What is meant by the periosteum? If merely the fibrous sheath which surrounds bone, then the periosteum is but a limiting and vascularizing membrane; if, on the other hand, the cambium or epiosteum layer lying between periosteum and bone, and rich in osteoblasts, is included as part of the periosteum, then most certainly the periosteum plays an important part in the production of bone. This bone-producing layer, lying between the periosteum and the surface of the bone, clings in children to the periosteum, whereas in adults it appears to belong more properly to the bone, and, in the absence of trauma or inflammation, to be inseparable from it.

If the periosteum is preserved, with its clinging osteoblasts, as in the case of subperiosteal resection of bone in a child, new bone will be formed with mathematical accuracy in every case. In adults subperiosteal resection may or may not be followed by new bone formation, the result apparently depending to a large extent on whether or not the osteoblasts are detached from the bone in the process of separating the periosteum.

From a practical point of view absence of the periosteum from an implanted bone graft probably means slower vascularization and a more prolonged convalescence for the patient. The retention of periosteum with the graft is not essential for success, but appears to play a decided part in the formation of an involucrum of new bone, which is seen with comparative regularity round a graft a few weeks old. Periosteal covered grafts are more permanent, and less likely to be absorbed.

Murphy and others held that the graft was nothing more or less than a scaffold, which is replaced by new bone. When the graft was contacted with living bone, the Haversian vessels permeated the Haversian canals of the graft, and carried with them osteoblasts and osteoclasts. The osteoblasts made good the defects in the graft produced by the activity of the osteoclasts. Thus the osteoblasts produce and insert a new brick *pari passu* with the demolishing of the old structure by the osteoclasts. That the graft is not a mere scaffolding removed by the action of the osteoclasts and replaced by the activity of the osteoblasts, but is really viable and inherently carries its own osteogenic powers, becomes obvious under certain pathological conditions.

If a fracture occurs, the result of accident, the graft unites by the formation of callus, by a process simulating the repair of normal bone, and if a graft becomes infected, and the infection is not sufficiently severe to kill it outright, then an involucrum and sequestrum may be formed. In other words, almost from the time of insertion, a graft behaves in a manner identical with ordinary bone.

Sir Robert Jones illustrates a case of bone graft introduced to replace a tibia lost from disease. The graft broke near the centre, but subsequent x-ray photographs demonstrated a very definite formation of callus at the site of fracture.

Experience teaches many interesting points in connection with the surgery of bone grafting. Ruin is not inevitable if accidental infection follows the operation, either through error of technique or the result of latent sepsis. A graft will often survive all but the streptococcal and other severe infections, and a bacteriological investigation should be made of the pus, in order to gauge the prognosis. Technique should approach perfection in every surgical

operation, but should infection occur, or from the nature of things be inevitable, a bone graft will withstand the assault in a surprising manner, and the end result may be admirable. (Figs. 3 and 4.) In proof of this we have only to watch the completely separated fragments of bone in a compound "ploughed" fracture the result of gunshot wound, and see the fragments not only remaining viable, but rapidly consolidating with the fractured ends during repair. It is not true to suppose that bare bone is of necessity devitalized and will end in sequestration in a septic case, and the same observation applies to a bone graft. Hence the golden rule not to remove loose fragments in the early treatment of septic fractures, nor disturb a bone graft because unexpected infection follows the operation.*

In fifteen cases of Albee's operation for Pott's caries during the last five years the wound twice became infected. In one case, a child seen by Professor Osgood when visiting Dublin, the graft protruded through the lower angle of the wound for some weeks, without any sign of local inflammation in the soft tissues. Eventually the protruding portion was removed with bone pliers, and the skin at once healed across the gap, leaving the main portion of the graft undisturbed. This case recovered rapidly, with the graft firmly consolidated *in situ*.

In the second case, a very thin young adult, a pressure sore developed from insufficient padding of the frame on which the patient was placed after operation. The lower third of the graft became exposed, and the wound suppurated freely. In twelve months' time a sequestrum was thrown off, and the wound healed. X-ray photographs showed the graft *in situ* and firmly fixed to the diseased segment of the spine.

The first thought of the surgeon must be how to fix the graft in its new bed and by what method the limb is to be immobilized immediately after operation. A small amount of movement does not delay union in a simple fracture, as evidenced by the rapid repair of a broken rib or jaw, but the slightest mobility in a bone graft may make all the difference between success and failure.

In planning the line of the incision there will be no difficulty in dealing with easily accessible bones, such as the ulna and tibia, but in the case of the humerus and radius real respect must be paid to anatomical structures. Cases operated on previously, and exhibiting many scars, require ingenuity in planning the operation, so as to avoid, *inter alia*, the musculo-spiral and posterior interosseous nerves. The best plan is to expose the bone in its most easily accessible portion and then to extend the dissection by keeping under the periosteum, or as close to the bone as possible. The less the muscular attachments are interfered with the more rapidly will the osteogenetic process be established. Ruthless stripping of the bone must be avoided.

In old ununited fractures the difficulty at once arises of how to prepare a bed for the graft in the presence of, perhaps, two or three inches of sclerosed avascular bone. Complete resection often cannot be done without undue sacrifice of length of the limb. In such cases reliance may be placed on a long stout graft extending for a considerable distance above and below the sclerosed area, and an attempt made to create new vascular channels by drilling holes and reaming out a new medullary cavity before placing the graft in position. (Fig. 7.)

A long stout inlay graft is most likely to succeed, but it should be remembered that the recipient bone in the critical area—that is, the region of the fracture—is unsuitable soil; osteogenesis and thickening of the graft may fail, and the solution of continuity reappear on absorption of the graft many months after operation. Radical shortening of the bone is the only remedy if grafting fails, and in the case of the humerus gives a good functional result. The operation should for choice take the form of "the step" coaptation recommended by Hey Groves.

In old cases a sliding graft, taken from above or below the site of fracture, must not be used; the lower or upper end of a graft so taken would consist of sclerosed bone, avascular and devitalized by prolonged inflammatory changes. Sliding grafts should be reserved to bridge a fracture in recent simple cases, and even then should be

* The practice of Leriche and others of freely removing loose fragments subperiosteally in early cases is to be condemned in view of late results, unless the method is limited to those violently septic cases which would end in amputation without drastic sacrifice of the injured bone.

sparingly employed; they are frequently too short and insecure.

The intramedullary peg is condemned by many, but it provides the simplest form of bone graft, and in the late J. B. Murphy's hands it gave excellent results, the peg becoming firmly incorporated with the bone into which it was inserted. In one of my cases, an ununited fracture of the humerus of eight years' standing, the upper portion of the peg failed to unite, and gradually formed a species of ball-and-socket joint within the medullary cavity, but there was firm incorporation of the lower end of the graft with the recipient bone. At a second operation, three months afterwards, it was found impossible to remove this portion of the graft without the free use of the chisel.

There is one obvious difficulty in the introduction of a peg graft, for if half be driven into the medullary cavity of one fragment it is impossible to complete the introduction of the other without undue traction of the limb. To overcome this difficulty, the end of the graft which protrudes from the medullary cavity of one fragment should be laid in a groove cut in the other during traction of the limb. When the traction is relaxed the end of the peg glides past the groove into position. The alignment is of necessity perfect.

It must be remembered that over strenuous traction of the arm in a case of ununited fracture of the humerus will produce transient musculo-spiral paralysis, and give rise to anxiety for two or three months. The peg graft is admirable if it were not for the real danger of fracture during convalescence. (Fig. 6.) This accident has occurred over and over again notwithstanding the greatest care in applying splints and plaster dressings. Owing to this liability to fracture, the use of a peg graft may with advantage be confined to cases of fracture or defect in the bones of the forearm (Figs. 1 and 2), and more stable lateral inlay grafts be reserved for the repair of the femur and humerus.

Injury to the radius or ulna is followed often by pronation deformity, the correction of which is an important part of the preliminary treatment. An intramedullary peg in the radius will not be disturbed by the coxing of the lower fragments into a supinated position, although, whenever possible, every deformity should be corrected before operation is undertaken. When an inlay graft is employed it is a simple matter to lay the upper end in a groove of the proper dimensions and then push it for a short distance into the medullary cavity above; but in this case the lower end may tend to spring away from the lower fragment, and some means must be adopted for its fixation. Surrounding the bone by two or three heavy catgut ligatures tightly tied round the graft suffices in most cases, provided the rigid fixation of the limb is afterwards ensured.

By some, reliance is placed on the rigid fixation of the graft *in situ* by mechanical aids, and early movements of the limb encouraged to stimulate the activities of the bone (so well seen in children) according to Wolff's law. By others the graft is so arranged that success entirely depends on the fixity supplied by the splint or plaster cast, and no movement is allowed for at least three months. All are agreed that unless the graft lies in its bed incapable of movement the operation is certain to fail.

In the hands of Lane, Hey Groves, and others, as might be expected, excellent results follow the use of plates, bolts, and screws in combination with grafts. This procedure, however, prolongs and complicates the operation, and I am frankly afraid of disappointments in attempting too much. Bone nails can be readily made with the lathe and appliances provided with the Albee electro-motor saw, and the graft can be thus secured in position. It is fascinating but tedious work. I have twice fixed the graft successfully with a series of bone nails, but the operation appeared to me to be unduly prolonged. By making the graft a tight fit for the groove and hammering it into position reasonable fixation can also be secured.

In all my cases (except two) the graft, consisting of periosteum, compact bone, endosteum, and marrow, was taken in the orthodox manner from the subcutaneous surface of the tibia by means of Albee's twin electro-motor saw. In the two cases—one a congenital dislocation of the hip, and the other caries of the spine with much deformity—a rib transplant was found most suitable in size and shape.

A note of warning is necessary regarding fracture of the tibia from which a graft has been taken. This may occur some months after operation. As a precautionary measure a light plaster casing should be employed, and the use of crutches encouraged until strength of the leg is assured.

Hey Groves expresses the thought of most workers in this branch of surgery when he states that his "feelings are those of disappointment and hope—disappointment that the proportion of successes has been so small, and hope that by the experience gained one may be able to avoid causes of failure, which are seen to be so obvious, and therefore so possible of evasion."

From the above remarks, based on a study of thirty cases, it may be concluded that—

1. Whatever the histological rôle the clinical usefulness of a bone graft is not affected.

2. The final success of bone grafting in cases in which a gap is bridged depends upon the operation of Wolff's law (Fig. 5)—that is, the graft, stimulated by strains and stresses, changes its internal architecture and external conformation until the required strength is attained. In other words, "the amount of growth in a bone depends on the need for it" (Murphy).

3. The periosteum should be left on the graft, because, although not essential, it is the medium through which new blood vessels enter the graft and the surrounding structures. Furthermore, in removing the periosteum superficial layers of osteoblasts may be sacrificed. A periosteum covered graft is less likely to become rapidly absorbed.

4. To provide the necessary strains and stresses it is advisable to allow the graft to functionate as early as possible, but in most cases preliminary fixation for three months is essential.

5. In old ununited fractures with false joints the bone in the critical area (near the site of fracture) is sclerosed and avascular, and makes an unsuitable soil for that portion of the graft in contact with this area. Growth in the graft is impeded by the surrounding sclerosis. Dense sclerotic bone has no osteogenetic power.

6. In such cases a periosteal covered graft, instead of exhibiting osteogenetic powers and responding to Wolff's law, may become attenuated and absorbed or break in the critical area five or six months after operation.

7. In the same class of case very prolonged fixation is particularly unfavourable to osteogenesis, to the establishment of blood supply, and bony union. Early movements and the bearing of mechanical stress and strain, on the other hand, may lead to yielding of the graft and failure. The problem is a difficult one in the case of the humerus or femur, where strength is essential from the commencement of treatment, but may be solved by wide resection of the sclerosed bone, and resignation on the part of the patient to a short limb.

8. But for slightly slower osteogenetic powers, and a real tendency to fracture, the intramedullary peg is effective. This method of bone grafting is satisfactory in the case of the radius and the ulna.

9. In the case of the humerus and femur, long stout inlay grafts give the best results. Sliding grafts should only be employed in simple and fresh cases.

10. The bone graft has inherent bacteria-resisting properties.

11. Absolute fixation of the graft in its bed, either as part of the operation, or afterwards, by splints or plaster, is essential to success.

12. Bone grafting for spinal caries is followed by more uniformly successful results than is seen elsewhere. This is to be expected, since both the graft and the recipient bed (in the region of the spinous processes) consist of healthy bone.

13. As in the operation of tendon transplantation and nerve suture, the operation of bone grafting should be preceded by correction of any existing deformity and by the freeing of adhesions in neighbouring tendons and joints.

ON the initiative of Professor Carlo Besta, director of a neurological centre in Milan, an institute for sufferers from wounds of the brain is to be established in that city. Already £7,200 has been subscribed for the purpose.



FIG. 1.—Bones of forearm on admission. Great angular deformity and shortening.



FIG. 2.—Showing reconstruction of the forearm shown in Fig. 1 by resection of bone, plate, and wires *en bloc*, and bridging of gaps with intramedullary pegs. The radial peg increased in diameter to size of normal radius after six months.

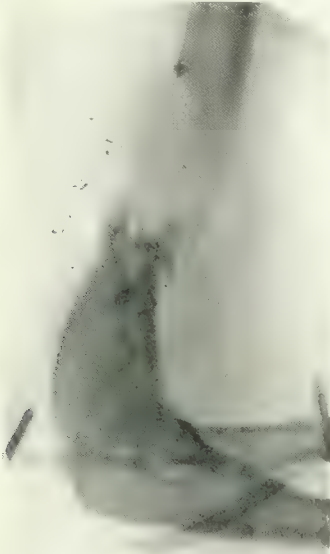


FIG. 3.—Gunshot wound of lower end of humerus before operation. Temporary musculo-spiral paralysis disappeared *pari passu* with the healing of the wound three months after injury.

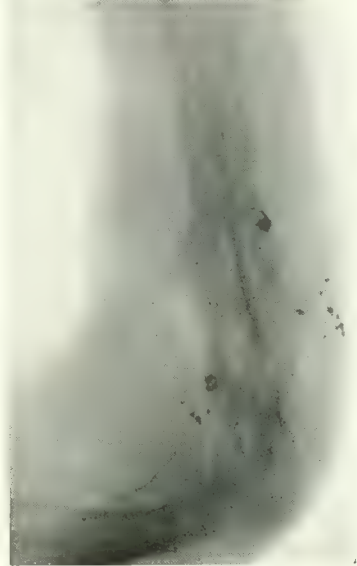


FIG. 4.—After operation. The introduction of a peg graft four months after healing was followed by lighting up of latent sepsis in the old wound. The graft survived, firm union followed, with full movements at the elbow-joint.

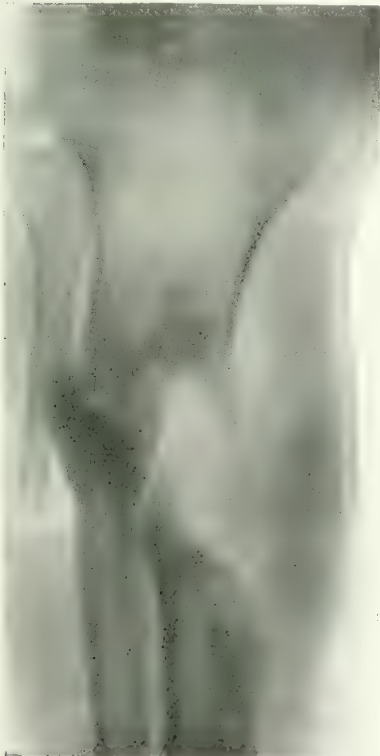


FIG. 5.—Union of fibula and tibia. Note thickening of fibula, the result of weight bearing. Good functional result.

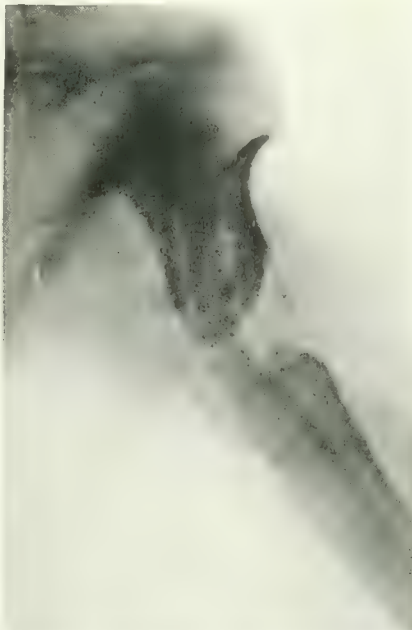


FIG. 6.—Illustrating fracture of humerus. These cases should be treated by shortening and inlay grafts or the step operation.

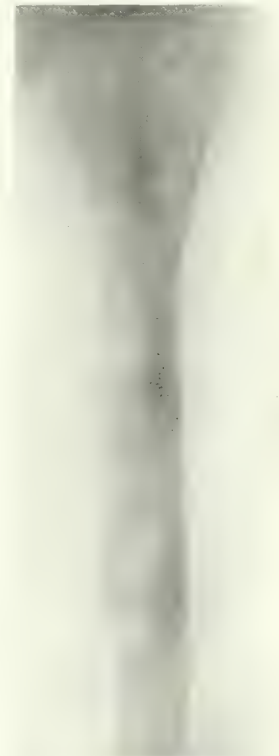
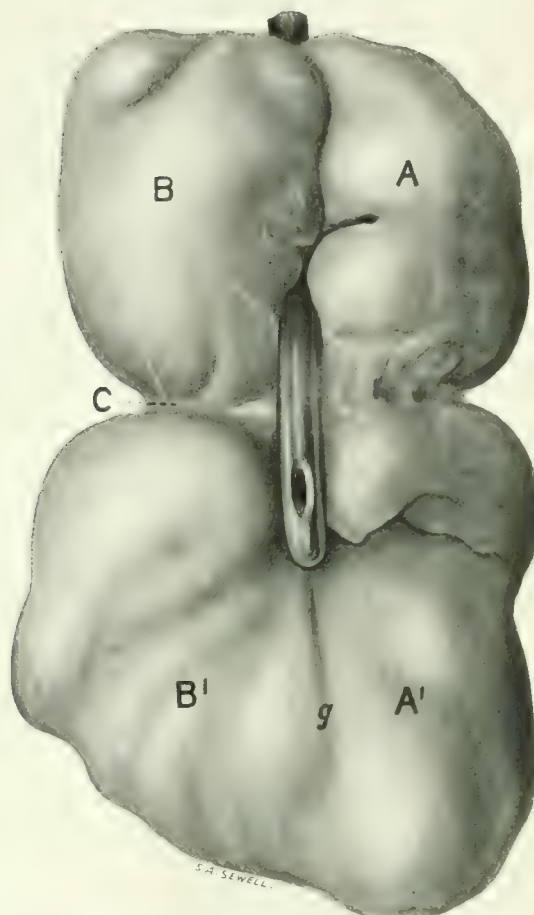


FIG. 7.—Long inlay graft in an ununited fracture of the humerus of eight years' standing. Six months after operation there was absorption of the graft in the "critical area" and failure of union.

SIR PETER FREYER: TOTAL ENUCLEATION OF THE PROSTATE.



Prostate weighing $8\frac{1}{2}$ oz. removed from patient aged 79 (Case 1,091). A. Right lobe. B. Left lobe. A' B'. Outgrowth in the bladder, springing equally from both lobes, the furrow *g* showing the posterior commissure of prostate. The neck *c* was caused by the grip of the upper margin of the prostatic sheath, or recto-vesical fascia, and sphincter muscle of bladder.

TOTAL ENUCLEATION OF THE PROSTATE.

A FURTHER SERIES OF 550 CASES OF
THE OPERATION.

[WITH SPECIAL PLATE.]

BY

COLONEL SIR PETER J. FREYER, K.C.B., M.D., M.Ch.,

SURGEON TO ST. PETER'S HOSPITAL; CONSULTING SURGEON TO
THE EASTERN COMMAND AND TO QUEEN ALEXANDRIA'S
MILITARY HOSPITAL.

SEVENTEEN and a half years have now elapsed since, in a lecture published in the *JOURNAL* of July 20th, 1901, I placed before the profession at large a full description of my operation of total enucleation of the prostate for radical cure of enlargement of that organ, illustrating my method by details of four cases successfully performed by me. Since then numerous papers and lectures of mine have been published, chiefly in the *JOURNAL* and in the *Lancet*. In the earlier papers I recorded complete details of every one of my first 110 instances of the operation. Later, as each paper dealt with scores and then with hundreds of cases, I had to confine details to special instances illustrating some novel or important feature of the operation. Finally, in the *JOURNAL* of October 5th, 1912, I reviewed 1,000 cases of the operation performed by me. Since the outbreak of the war the absorbing interest attaching to communications connected with the wounds and diseases of our fighting forces have hitherto deterred me from encroaching on the limited space of our medical press. I have now completed a further series of 550 cases of the operation, and in the present paper I propose reverting to my practice of emphasizing certain aspects of the procedure by illustrative cases, dwelling particularly on its employment in advanced old age and in those conditions in which it is desirable to divide the operation into two stages—namely, (1) a preliminary suprapubic cystotomy for drainage of the bladder, and (2) enucleation of the prostate at a subsequent date.

When the operating surgeon is consulted with a view to enucleation of the prostate he will not infrequently be confronted by the fact that the patient has drifted into a stage in which the primary disease—the enlargement of the prostate—is complicated by other conditions which have undermined his constitution and seriously diminished his vital powers, thus rendering the undertaking of an operation of this magnitude a very serious matter. In cases of this kind the question will arise as to whether or not it is advisable to divide the operation into two stages—(1) a preliminary suprapubic cystotomy for free drainage of the bladder with resulting relief to the backward pressure on the kidneys, and (2) enucleation of the prostate at a subsequent date, when the kidney functions are re-established, the cystitis has disappeared, and the general health of the patient has improved. It would be extremely difficult, if not impossible, to lay down any general classification of cases in which this procedure should be had recourse to, but it is hoped that the illustrative cases that follow will help towards forming a decision on this point.

There are, however, three definite conditions in which I consider that, as a rule, it is advisable to drain the bladder before removing the prostate:

1. When the bladder is very septic, generally complicated by the presence of phosphatic calculi, and particularly when there is reason to believe that the kidneys are secondarily affected, as indicated by recurrent attacks of rigors and pyrexia with emaciation and debility of the patient.

2. When, no catheter having been previously employed, a patient consults you for intensely frequent but painless micturition with dribbling of urine, the result of an over-distended bladder. The urine in such cases will be pale and of low specific gravity (from scantiness of urea), and the patient will complain of intense thirst, with probably headache and pains in the limbs; the tongue will also probably be red, dry, and fissured, and he will complain of a bitter taste—symptoms which indicate incipient uræmia. The disease will have advanced insidiously and the patient,

who will probably have informed you that he is passing urine too freely, will be astonished when on introducing a catheter one or two pints of urine are drawn off, and as much more left behind. The bladder should in cases of this kind be slowly drained by tying in a catheter of narrow calibre, and suprapubic cystotomy performed in two or three days' time, the enucleation of the prostate being deferred for a fortnight or longer, till the kidneys have regained their normal functions and all the uræmic symptoms have disappeared. The procedure here indicated is that which I almost invariably follow; but when a catheter of large calibre tied in the bladder is well borne, this method of drainage of the bladder and giving relief to the backward pressure on the kidneys may be tried; and, if the uræmic symptoms soon pass off, the urine regaining its normal specific gravity, the preliminary cystotomy may be dispensed with.

3. When rigors and pyrexia, followed by cystitis, set in after the introduction of a catheter for the first time—and this is an event that may occur in the hands of the most experienced surgeon and with the most scrupulous aseptic precautions—and urgent relief of the symptoms is required. It is never advisable to remove the prostate during an acute attack of cystitis. The catheter should be introduced frequently, or tied in if its introduction is difficult and painful, and the cystitis subdued by the usual remedies before operation is undertaken. If, however, it is found that this procedure is badly borne and cannot be followed, the bladder should at once be drained suprapubically, the enucleation of the prostate being postponed till the cystitis has disappeared and the patient has regained strength.

Personally, I do not favour the division of this operation into two stages except when absolutely necessary, as indicated by the fact that amongst 1,550 prostatectomies performed by me the two-stage operation has been undertaken in only 73 cases, or 4.75 per cent. I see no advantage in this procedure in ordinary straightforward cases, which are the general rule, and many disadvantages. Apart from the extra period the patient has to remain in bed, it is much more difficult to enucleate the prostate when deferred for ten days or longer after the cystotomy, for the tissues around the suprapubic wound will have become tense and rigid from the plastic lymph thrown out, with the result that the abdominal wall will not be soft and yielding to the hand, the finger of which is in the bladder for the purpose of the enucleation, and there will, in consequence, be difficulty in reaching the distal aspects of the prostate.

CASE 1,065.

On April 13th, 1913, I was urgently summoned to Brighton by Dr. Donald Hall to operate on a gentleman, aged 81, who had suffered from the usual prostatic symptoms for ten years, culminating in retention of urine twelve days previously. Since then he had been entirely dependent on the catheter, the introduction of which gave rise to much pain and was attended by severe hæmorrhage at times.

Assisted by Dr. Hall and Mr. Ionides of Brighton, I forthwith enucleated the prostate suprapubically, a pear-shaped, symmetrical specimen, the median outgrowth in the bladder being only the size of a pea. The weight of the growth was about 4 oz., and the operation was completed in three minutes. Recovery was slow but complete, and the patient has had no urinary troubles of any kind since. On December 29th, 1918, he wrote to me: "I am thankful to report good health on this my 86th birthday."

CASE 1,083.

This gentleman, aged 75, consulted me on May 21st, 1913, on the advice of Dr. Courchet, St. Raphael, France, and of Dr. Gordon Pollock, Warrington. In February, 1912, he had an attack of whooping-cough in the south of France, and at the time felt his clothes tight from distension of the abdomen. In June of the same year he passed much blood in the urine. Towards the end of that year he had dropsy in his lower limbs, and later on uræmic symptoms. On January 9th, 1913, Dr. Pollock by the catheter drew off 2½ quarts of urine containing blood, and since then the patient had been entirely dependent on the catheter, which had to be employed every four hours. Subsequently he consulted three surgeons in Paris, where he was laid up in a surgical home, and a catheter tied in for a week; this had the effect of diminishing the quantity of urine secreted from 4 to 2 quarts, evidently owing to the relief to the backward pressure on, and physiological rest afforded to, the kidneys. He also had his bladder washed out daily with borax and nitrate of silver lotions.

I introduced a catheter and drew off 8 oz. of pale-coloured urine, of specific gravity 1010, containing pus, but with no kidney albumin. The patient was thin but wiry, the heart being irregular and intermittent. The prostate was much enlarged.

* BRITISH MEDICAL JOURNAL, February 1st, July 26th, November 8th, 1902; April 18th, July 4th, October 17th, 1903; May 21st, October 20th, 1904; May 20th, October 7th, 1905; March 9th, October 5th, 1907; October 2nd, 1909; October 5th, 1912. *Lancet*, July 23rd, 1904; February 25th, 1905; May 1st, 1909; April 8th, 1911; April 12th, 1913.

On May 29th, Dr. Pollock assisting, I enucleated the prostate entire in three minutes. The gland, which weighed 3 oz., was hard at the centre of each lobe, but pathological examination showed that it was adenomatous and shaple. On June 11th some urine was passed per urethram; by June 24th the suprapubic wound was healed, and the urine retained and passed naturally. The bladder, however, did not completely empty itself. On July 24th the patient left for the country, with instructions to pass the catheter at first daily, and then at more distant intervals, to completely empty the bladder, and thus enable it to regain its tone, which it had lost through prolonged over-distension. In the course of a few months the bladder regained its power of expelling the whole of the urine. On June 10th, 1916, this gentleman's wife wrote: "My husband is very well and bright, and works as hard as ever"; and on December 15th, 1918, the patient wrote: "The result of the operation changed my life from one of misery to one of great comfort; my health is such as I ought to be thankful for at fourscore years. I am out every day that is possible. I sleep well, seldom leaving my bed more than once instead of twenty times."

CASE 1,091.

On June 27th, 1913, I saw a gentleman, aged 79, who had come from New Zealand to consult me, on the advice of Dr. Gilbert Mirans, Wellington. Prostatic symptoms, gradually increasing, had existed for ten years, and for the last four he was entirely dependent on the catheter. The largest catheter that could be introduced was a No. 4 English scale, and this only by stiffening it by means of a metal stylet, for, in addition to the prostatic enlargement, a stricture of the urethra was present. The introduction of the catheter was attended by much pain and frequently by bleeding; it had to be employed six times daily, and on each occasion it took half an hour to empty the bladder owing to the small calibre of the instrument. The prostate was felt bimanually to be greatly enlarged, particularly in the bladder. The general health was poor, the heart intermittent and irregular, the feet swollen, the urine contained pus and albumin, and the patient suffered from troublesome psoriasis.

On June 30th, Dr. W. E. Herbert of Wellington, N.Z., being present, I performed an internal urethrotomy, and then enucleated the prostate entire with great ease. The operation was well borne and unaccompanied by shock, but was followed for twenty-four hours by vomiting of dark grumous matter, the pulse though irregular remaining strong. Convalescence was rapid; on July 15th some urine was passed by the urethra, and on July 26th the wound was dry, the whole of the urine being retained and passed naturally from this date. In the end of August, about a month after passing from under my care, the patient had a paralytic stroke, due, apparently, to his motoring fifty or sixty miles daily; but from this he recovered. On June 14th, 1914, he wrote from New Zealand: "I have no bladder trouble and, save for a weakness in the left leg, I am well in health, have a good appetite and enjoy sound sleep"; and on March 15th, 1918: "Not only has the removal of the prostate gland been a complete success but the psoriasis has disappeared."

The prostate from this case, which weighs 8½ oz., is shown in the figure (special plate). It is a remarkable specimen, one of the most interesting in my possession, presenting an enormous outgrowth in the bladder.

CASE 1,132.

The patient, aged 84, was admitted to St. Peter's Hospital, November 14th, 1913, with prostatic symptoms which had existed fourteen years; he had been dependent on the catheter for five years and was in great distress, almost worn out from pain and constant desire to micturate. The urine contained pus and mucus from chronic cystitis.

On November 19th I enucleated the prostate, weighing 6 oz. A rapid recovery ensued, the patient being discharged on December 22nd in fairly good health. On July 24th, 1916, the patient's wife wrote me: "My husband is enjoying very good health and has not the slightest return of the trouble for which you operated on him; he is taken for 70 instead of 86!" And on October 17th, 1918: "Everything is quite normal as regards the operation performed in 1913."

CASE 1,257.

This gentleman, aged 64, sent by Dr. W. G. Sargent, Padstow, Cornwall, I examined on June 29th, 1915. Prostatic symptoms had existed fifteen years, and during the last three years he was entirely dependent on the catheter, which had to be introduced every three or four hours. The urine contained much pus and blood, and was extremely offensive. The general health was extremely bad, the heart being intermittent and irregular, and the skin was of a bluish-grey colour, the result of septic absorption from the bladder. The temperature varied up to 102° F.

On July 1st I opened the bladder suprapubically and removed seven faceted phosphatic calculi, weighing nearly 3 oz. The prostate was extremely large, fully one half of it projecting in the bladder. As the patient was extremely weak, and suffering from sepsis, I postponed enucleation of the gland, and contented myself with temporary drainage of the bladder.

By July 6th the patient's health had vastly improved, the pyrexia had disappeared, and the urine was inoffensive, so, on July 7th, I enucleated the prostate, which weighed 8½ oz. The operation was well borne, and convalescence rapid, the wound

being closed on July 23rd. On August 16th the patient returned to Cornwall, able to retain and pass his urine normally, and on August 18th Dr. Sargent wrote: "Such a result was beyond anything I anticipated, for the case had assumed a very grave aspect, and the general health was at a very low ebb." On July 2nd, 1916, a year after the operation, the wife wrote: "My husband has made a great recovery. He is free from pain and urinary troubles, from which, as you know, he suffered for many years"; and on August 1st, 1918: "My husband is in splendid health, and looks so well."

CASE 1,266.

Captain X., aged 72, sent by Dr. D. M. Davies, Aberayron, on August 4th, 1915, suffering from prostatic symptoms for four years; completely dependent on the catheter for six months; urine contained much pus and blood, and was very offensive. The bladder had been washed out twice daily for many weeks. The prostate presented in the rectum as a large, rounded, dense tumour, with median furrow, like the buttocks of a 7-months fetus. Bimanually it was felt as a large rounded movable tumour in the bladder, projecting above the pubes. The patient's general health was fair.

On August 6th, Lieut.-Colonel G. Bull, I.M.S., being present, I opened the bladder suprapubically, and found that about two-thirds of the bulk of the prostate lay in the bladder. It was gutter shaped, with the lateral lobes lying apart, the distorted urethra, carried by the growth up into the bladder, forming a deep vertical slit. I enucleated the gland, weighing 12½ oz. entire, the operation lasting eight minutes. The incision in the abdominal wall was only 3 in. long and that in the bladder only 2½ in., the prostate being of the soft, compressible, adenomatous type, and being delivered from the bladder like an open b valve. There was scarcely any bleeding, no shock, and the patient complained of no pain; in fact, as he repeatedly stated, he never felt the operation. The progress of the case was uneventful, the wound being closed on August 27th, and the patient returned home on September 9th in good health, able to retain and pass his urine as well as ever. On September 26th Dr. Davies wrote: "I am extremely pleased with the result of the operation. He is remarkably well and has good control of his sphincter." On December 13th, 1918, the patient wrote me: "I am glad to tell you I feel as well as when I was eighteen."

The prostate, a fine specimen, shaped like a small shrapnel shell, has been placed in the museum of the College of Surgeons, London.

CASE 1,274.

The patient, aged 48, was admitted to St. Peter's Hospital, September 20th, 1915, with the usual symptoms of enlarged prostate, which had existed six months, the most marked of which were great frequency of micturition and loss of control of the urine at night. The bladder was distended, containing about two pints of urine. The prostate was felt enlarged per rectum and bimanually, and of the usual adenomatous type. There was marked loss of flesh during the previous two months, and the patient's general health was very indifferent.

On September 22nd I enucleated the prostate entire in its capsule, a good specimen (now in the College of Surgeons Museum), weighing 1½ oz., presenting a scoop-shaped lip in the bladder. On October 8th the patient was discharged, able to retain and pass urine normally but still in indifferent health. On August 10th, 1916, he wrote me: "I am delighted to tell you that I am at last in the best of health."

This (48 years) is the lowest age at which I have enucleated an adenomatous prostate, and only in four instances at this age.

CASE 1,281.

The patient, a fine old soldier, aged 84, who had served in the Crimean war, was admitted to St. Peter's Hospital October 3rd, 1915, suffering from prostatic enlargement and stricture of the urethra. Twenty years previously he had a stone crushed in the bladder. Eighteen months before admission he had retention of urine, and since then he was entirely dependent on the catheter. Owing to the stricture the size of the catheter was limited to No. 5 of the English scale. The urine contained pus and blood, but the patient's general health, considering his great age, was good.

On October 6th I dealt with the stricture by internal urethrotomy and then enucleated the prostate suprapubically. The gland, which weighed 2 oz., was very dense. A rapid recovery ensued, the patient being discharged on October 29th—twenty-three days after operation—retaining and passing his urine as well as he ever did. On July 23rd, 1916, the patient wrote me that he was in good health. Subsequent to the operation he worked as a recruiting sergeant. On December 27th, 1916, he came to see me; he was then in good health in his 86th year.

CASE 1,309.

This patient, a well known public man, aged 76, consulted me on December 21st, 1915, introduced by Dr. Douglas, Camden Road, London. The usual prostatic symptoms had existed only one year. There was intense frequency of micturition by day and night, but no pain or other discomfort. I found that the bladder was overdistended, reaching as high as the umbilicus, and on passing a catheter I drew off 35 oz. of urine, leaving a large quantity behind. The urine was pale, like water, the

specific gravity being only 1002; albumin *nil*. The prostate was considerably enlarged, bilobed and very dense at parts; general health indifferent.

Owing to the low specific gravity of the urine and insufficient action of the kidneys from prolonged backward pressure, I decided to drain the bladder in the first instance and defer to a later date the enucleation of the prostate.

The bladder was opened suprapubically on December 23rd and a large drainage tube inserted. The patient bore this comparatively slight operation very badly and was for some days in a very precarious condition. Then he rapidly improved, and on January 26th, 1916, I enucleated the prostate entire. It was adenomatous, pear-shaped, and weighed 2 oz. This second operation was well borne and convalescence was rapidly established, the patient leaving the surgical home on March 6th in fairly good health, retaining and passing his urine normally. I have met this gentleman on several occasions since, looking remarkably well and attending to his parliamentary duties. He has had no urinary troubles since. On September 25th, 1917, he wrote me: "I am enjoying very good health"; and on December 10th, 1918: "I am very well."

CASE 1,310.

On January 26th, 1916, I was called to see this gentleman, aged 67, in consultation with Drs. J. S. Part of Chiswick and T. H. Bishop of Bedford Park. For two years he had suffered from prostatic symptoms, with, latterly, intense frequency of micturition. Three days previously a catheter had been passed and 85 oz. of urine drawn off. The evening before I saw him it was found impossible to introduce the catheter. With considerable manipulation I managed to pass a No. 16 French *coudé* and draw off 82 oz. of urine containing much pus. The tongue was foul, the pulse weak, and the patient was wretchedly ill, unable to move on the couch on which he was lying. The prostate was felt per rectum to be very large and of the usual adenomatous type, but it could not be felt bimanually owing to the stoutness of the patient.

Owing to the large quantity of pus and albumin in the urine and the weak condition of the patient, I decided to drain the bladder suprapubically in the first instance, and to remove the prostate later on. The former operation I performed in a surgical home on January 27th. By February 7th the patient had wonderfully improved in health, so next day I enucleated the prostate, a fine specimen of the scoop-shaped pattern, very prominent in the bladder, and weighing 5 oz. The anaesthetic and operation were well borne. On February 29th the patient left the surgical home in fairly good health, able to retain and pass urine normally. On August 28th he wrote: "I am in better health than I have been for years, and have no trouble with my waterworks." On September 15th he called to see me in perfect health. I heard from him on December 12th, 1918, that he was in excellent health, and in the active pursuit of his profession.

CASE 1,358.

This gentleman, aged 85, consulted me August 2nd, 1916, on the advice of Dr. J. Unthoff, Brighton. He had seen military service in the Indian Mutiny and Persian war, but had passed the greater portion of his life in South America. His prostatic symptoms dated back fifteen years, culminating in retention of urine a year ago, since when a silver catheter was passed twice daily by an attendant, latterly with much difficulty, pain, and bleeding. For the last three months he was practically confined to bed, but had to rise every hour or less for urination, which was attended by straining and scalding. The urine was of low specific gravity, 1008, and contained much pus and some blood. Three months previously he had a slight stroke of paralysis, accompanied by loss of speech for three days. He had double inguinal hernia. The prostate was large and adenomatous, and, though no stone was detected by the sound, I suspected the existence of one behind the prostate.

On August 7th I enucleated the prostate, which weighed 3½ oz., and found a small oval urate stone, weighing 22 grains, in the bladder. The operation, which lasted only three minutes, was well borne. Some urine was passed per urethram on August 17th, and the wound was closed on August 19th. The patient left the surgical home for Brighton on September 1st—twenty-five days after the operation—in fairly good health, able to retain and pass his urine normally. I saw him some months after in fairly good condition, untroubled by any urinary symptoms. I heard that he died some months later from heart and kidney troubles.

The rapidity of cure in this case, considering the great age and the debilitated condition of the patient, as well as the fact that the kidneys were affected, is, indeed, remarkable. I attribute success in such cases largely to rapidity in operating, thus reducing the time under the anaesthetic to a minimum.

CASE 1,429.

General H., aged 70, first consulted me in 1913, suffering from symptoms of enlarged prostate. Though the gland was considerably enlarged the symptoms were so slight that I refrained from passing a catheter, and advised postponement of any operative interference. He did not consult me again till June 6th, 1917. The symptoms had gradually increased in intensity, so that he had now to pass urine every hour and a half by day and night. A sterilized catheter was introduced and 12 oz. of residual urine drawn off. The prostate was felt bimanually the size of a large orange, and of the usual adenomatous type. Next day he had pyrexia followed by cystitis. The

intense frequency of micturition and the pain caused by the introduction of the catheter were so great that I tied in the catheter; but this gave little or no relief, the inflamed bladder resenting the presence of the catheter. I therefore drained the bladder suprapubically on June 12th, but, owing to the fever and weak state of the patient, I postponed removal of the prostate. The temperature soon subsided and the urine became normal, and on June 25th I enucleated the prostate, which weighed 4 oz. The suprapubic wound closed on July 9th, and the urine was passed normally after that date. On December 4th, 1917, the patient wrote: "I am perfectly well; I feel that you have given me a new lease of life"; and on December 6th, 1918: "I am doing well, and have no trouble or discomfort."

CASE 1,477.

Gentleman, aged 82, seen at Ipswich February 23th, 1918, in consultation with Dr. E. Hollis, Woodbridge. Prostatic symptoms had existed for seven years. Catheter employed twice daily for last fortnight. Cystitis, with temperature 103° F., supervened after commencing the catheter, but this had now subsided, though the urine contained pus, and urination was painful. The general health was feeble. Assisted by Dr. Hollis, I enucleated the prostate in three minutes; weight 3 oz. The patient made an uninterrupted recovery, and on March 24th Dr. Hollis wrote: "The patient has done well, the general condition is good, and he intends to return home in a few days." On December 19th the patient wrote me: "I am quite recovered, and have had no further urinary troubles."

CASE 1,484.

C. F. C., aged 80, was admitted to St. Peter's Hospital, March 2nd, 1918, with acute retention of urine, the bladder being distended to the umbilicus, due to prostatic obstruction. He complained of thirst and headache, and the tongue was red, dry, and fissured, denoting incipient uraemia. A catheter was passed and tied in and the bladder slowly drained. On March 6th I performed suprapubic cystostomy for drainage of the bladder preparatory to prostatectomy at a later date. The uraemic symptoms gradually subsided and the patient's general state was so improved that on March 20th I was enabled to complete the operation by removing the prostate, which was adenomatous and weighed only 1½ oz. The suprapubic wound was slow in healing, but was finally closed on May 6th. On May 11th the patient was discharged in fairly good health, able to retain and pass his urine normally. On December 11th, 1918, he wrote to me: "I am pleased to say that I feel remarkably well and have no set-back since leaving the hospital."

CASE 1,490.

Dr. McR., aged 80, consulted me on March 22nd, 1918, on the advice of Major A. Neve, R.A.M.C. Prostatic symptoms had been gradually increasing for three years, culminating in complete retention of urine the night before, when the catheter was passed and two pints of urine drawn off. Though he had since passed some urine naturally I drew off 32 oz., specific gravity 1008, with more than a trace of albumin. The feet were oedematous, the tongue glazed, dry, and fissured, and the patient was suffering from intense thirst. I sent him forthwith into a surgical home and tied in a catheter to drain the bladder continuously. This was well borne; the uraemic symptoms rapidly subsided and the general condition was so much improved that, on April 8th, Major Neve assisting, I enucleated the prostate, which weighed 1½ oz. and contained numerous minute calculi. The patient scarcely felt the operation, made a rapid recovery, and left the surgical home on May 3rd in excellent spirits, able to retain and pass urine as well as he ever did. On October 10th he wrote: "I am all right and have resumed my London engagements." I have recently seen him, in excellent health, untroubled by any urinary symptom.

In this case the overdilatation of the bladder coming on slowly and causing backward pressure on the kidneys, resulting in the early symptoms of uraemia: there was no necessity for dividing the operation into two stages, as the tying in of the catheter was well borne, and the relief thus afforded enabled the kidneys to recover their normal functions, and the uraemic symptoms to disappear before undertaking the enucleation of the prostate.

CASE 1,501.

Colonel P., aged 80, consulted me on March 6th, 1918, on the advice of Dr. G. D. McReddie, Greenhithe. The usual prostatic symptoms had existed for twelve years. The residual urine contained pus and albumin. On May 13th, Dr. S. H. Curry being present, I enucleated the prostate, which weighed 2½ oz., the operation lasting three minutes. An uneventful recovery ensued, the patient leaving the surgical home on June 28th, in good health, able to retain and pass urine normally. He called to see me on December 13th, 1918, in excellent health, untroubled by any urinary symptom.

The age in the 1,550 cases of total enucleation of the prostate now performed by me ranged from 48 to 90 years, the average age being 69; and the prostates removed weighed from ½ to 17 ounces.

There were in connexion with these operations 83 deaths, or 5½ per cent, the mortality diminishing from 10 per cent. in the first 100 to 3 per cent. in the last 200 cases.

There were 89 octogenarians between 80 and 90 years of age, and 13 bordering on this age, in their eightieth year. Amongst these there were 12 deaths, or 11½ per cent.

In 274 instances the prostatic enlargement was complicated by the presence of stone in the bladder, mainly of the phosphatic variety, due to cystitis, the calculi varying in number from one to hundreds; and in one case, reported in the *Lancet*, April 12th, 1913, there were sixteen calculi weighing 8 oz. Amongst these 274 patients there were 21 deaths, or 7½ per cent. I may draw attention to the fact that, though the operation in these cases involved a suprapubic lithotomy as well as enucleation of the prostate, the whole of the mortality has been accepted in connexion with the latter.

It will have been observed that in practically all the cases detailed in this paper—and they are typical of scores of others—the prostatic disease had been allowed to advance to such a degree that grave complications had supervened before surgical relief was sought. It is, of course, mainly amongst cases of this kind that a fatal result occasionally follows operation. I would, therefore, once more appeal to the profession at large to advise early operation, before the vital organs, and particularly the kidneys, become secondarily affected. When undertaken whilst the general health is sound and the kidneys unaffected there is scarcely any danger attached to this operation in experienced hands, even in advanced old age.

A NOTE ON THE STATE OF THE URETERS AND THEIR ORIFICES IN CASES OF GUNSHOT WOUNDS OF THE SPINE.

BY

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ONE of the most frequent causes of death in cases of gunshot wounds of the spine is infection of the bladder and kidney, attributable in most cases to the use of the catheter for retention of urine. It is well known that obstruction to the urinary outlet is a predisposing cause of infection, and this state of affairs is present to a certain degree in spinal injuries. Fearnsides¹ points out that after gunshot wounds of the spinal cord complete retention occurs in practically every case, commencing from the date of injury and lasting for a variable time. During this period a lax condition of the bladder musculature as a whole is found, accompanied by a considerable amount of spasm at the neck of the bladder, and of the urethra. To the first stage of complete retention there succeeds, after days, weeks, or months, a second stage of periodic spontaneous micturition or of active reflex incontinence which is entirely involuntary.

It is important to ascertain whether any relaxation or paralysis of the ureters or their sphincters is present in view of the frequency of "ascending" infection of the kidney. If it could be demonstrated that incompetence of the uretero-vesical sphincter and dilatation of the ureter occurs it would be easy to understand the frequency of kidney involvement following on bladder infection. A few observations were made in 1916 with the object of clearing up this point, but for various reasons their publication was delayed. It has been assumed that ascending infection of ureters and kidneys may be due to paralytic relaxation of the ureteric sphincters,² and as my observations bear on this subject I have thought it well to record them so that they may be corrected or confirmed by those interested.

It is easy to see how regurgitation of infected bladder contents into the renal pelvis could take place if the uretero-vesical orifice and the walls of the ureter were paralysed or relaxed. The object of this article is to show that there is no evidence that such a state of affairs is present. Physiologists are familiar with the fact that the ureters can carry on their functions independently of the central nervous system by virtue of an intrinsic neuromuscular or muscular mechanism upon which their rhythmical movements depend, and this is to be expected as the ureter simply serves as a channel down which urine secreted by the kidney is propelled to the reservoir provided for its reception until a convenient opportunity offers

for its discharge from the body. Elliott,³ experimenting on the innervation of the bladder and urethra in animals, incidentally investigated that of the ureter, but could not find any proof of the control of its peristalsis by the sympathetic nerves. The spinal segments connected with the ureters are the tenth, eleventh, and twelfth thoracic (Head). Cases with injury at or above this region were therefore chosen for investigation.

CASE I.—Cervical Region.

Pte. K., wounded with high explosive, September 17th, 1916. Complete lesion of the cord at the level of the fifth cervical segment. Complete retention of urine. The patient had been catheterized. Cystoscopy, September 22nd, five days after injury. Intramuscular injection of indigo-carmin. Colour did not appear in half an hour, though ureters discharged clear urine in jets, with normal movements of the ureteral orifices. The blue colour of indigo-carmin came through later in the day and the urine remained tinted for twenty-four hours. A mild cystitis was present. The delay in the appearance of the dye was doubtless due to the serious general condition of the patient who died two days later. *Post-mortem* examination revealed complete lesion of the cervical cord.

CASE II.—Upper Dorsal Region.

Pte. G., wounded by bullet, August 22nd, 1916. Diagnosed as a complete lesion of the cord at level of fourth dorsal segment. The patient had been catheterized for complete retention. Cystoscopy, August 24th, two days after injury. Already there was extensive cystitis, with ecchymoses, which formed slate-coloured patches in places. Ureteral orifices buried in oedematous mucous membrane. Intramuscular injection of indigo-carmin. No colour at end of thirty-five minutes, when a second injection was given. Ten minutes later colour appeared at both orifices. The urine issued in jets, which were short and abrupt and not definitely finished off as in a normal case. The area round the ureteral orifice moved only slightly upon closure of the latter. The alteration in behaviour of the ureteral orifice was probably due to the swelling of the mucous membrane present. The jets were irregular in rhythm, the intervals varying on the right side from two to thirteen seconds, and on the left from twelve to thirty-eight seconds. There was no escape of urine from the ureteral orifices in the intervals between the jets.

CASE III.—Mid-dorsal Region.

Pte. W., wounded with shrapnel ball, August 27th, 1916. Diagnosed as a complete lesion of the cord at level of sixth dorsal segment. Complete retention of urine. Catheter twice a day. Evening temperature varied from 103° to 104° F. Cystoscopy, September 1st, four days after injury. Intramuscular injection of indigo-carmin. Coloured urine emitted ten minutes later. Very vigorous jets from both ureteral orifices, with normal movements of the latter. Rhythm very irregular, three minutes elapsing on one occasion between two successive jets. At other times the rate was much more rapid. A mild degree of cystitis was present.

CASE IV.—Lower Dorsal Region.

Sergeant K., gunshot wound in dorsal region. Admitted base hospital, August 16th, 1916. Diagnosed as a complete lesion of the cord at the level of the eighth dorsal segment. Complete retention of urine, for which the patient had been catheterized. Cystoscopy, August 18th, a few days after injury. Slight degree of cystitis. Ureteral orifices perhaps slightly patulous. Intramuscular injection of indigo-carmin. Twelve minutes later coloured urine appeared in jets which were not very vigorous. No leakage from orifices of ureters in the intervals between jets.

CASE V.—Lower Dorsal Region.

Pte. K., wounded by shell, June 25th, 1915. Diagnosed as a complete lesion at level of tenth dorsal segment. Complete retention for which patient had been catheterized. Cystoscopy, a few days after injury. Small punctate ecchymoses. Floating flecks of mucus. Cystitis. Ureteral orifices appeared to be patulous, but there was distinct systole and diastole of the uretero-vesical sphincter. Intramuscular injection of indigo-carmin. Eight minutes later coloured jets with a thin stream appeared at intervals of twenty seconds.

Indigo-carmin was used in these cases to study more easily the shape and size of the issuing stream and to ascertain if any leakage occurred through an incompetent valve.

CONCLUSIONS.

A study of the foregoing cases justifies the conclusions that in complete transverse lesions of the cord in the cervical and dorsal regions, examined a few days after injury:

1. Peristalsis of the ureters continues, as evidenced by the rhythmical discharge of urine rendered more visible by indigo-carmin.
2. Normal movements of the lips of the ureteral orifice take place, as evidenced by the visible systole and diastole present in all the cases.

3. The tone of the uretero-vesical sphincter is maintained and the valve is competent. This is shown by the shape of the jets, which demonstrates that the urine has been ejected against the resistance of a narrow opening, and by the absence of leakage in the intervals.

The irregularity in rhythm and in the amount of fluid ejected in some of the cases was probably due to alterations in the rate of renal secretion. It is well known that the peristaltic movements of the ureter are originated by the presence of drops of urine in its lumen. I have noticed similar irregularity in conditions quite unconnected with spinal injury.

PRACTICAL CONSIDERATIONS.

The observations just described have a practical bearing on the treatment of patients with retention of urine due to spinal lesions. In order to avoid the disasters likely to result from the use of the catheter, other methods of treatment (pending the establishment of spontaneous micturition) have been suggested by various surgeons. One is to allow the bladder to distend until overflow takes place through the urethra (paradoxical incontinence). The urine is received into a receptacle placed between the patient's thighs. A second is to endeavour by pressure in the suprapubic region, combined, perhaps, with counter-pressure by two fingers in the rectum, to overcome the resistance at the vesical outlet, and so to empty, partially at least, the bladder. The important point to consider here is whether such distension or pressure is likely to force urine through the uretero-vesical orifices towards the pelvis of the kidney. With this end in view the following observations were recently made.

CASE VI.—Integrity of Uretero-Vesical Valvular Mechanism.

Pte. J. K. was wounded by bullet in the lumbar region on October 22nd, 1918. He had complete retention of urine, for which he was catheterized from October 23rd onwards. Admitted to a base hospital October 29th. Examination showed loss of sensation below the level of the iliac crest and motor paralysis of the right lower extremity and of the left below the knee. Slight voluntary movement of left thigh. The urine contained pus, albumin, and a few red blood cells. Cystoscopy, November 2nd, eleven days after injury. The bladder at this moment contained 900 c.cm. of turbid, foul-smelling fluid. Irrigation with warm water was carried out until the medium was sufficiently clear to see the ureteral orifices, which were almost hidden by oedematous mucous membrane. There was a severe degree of cystitis, and many flecks of pus floated in the injected fluid.

An intramuscular injection of indigo-carmin was given, and blue jets were seen to issue nine and a half minutes later. There was no leakage in the intervals between the jets. Gradually increasing pressure was made by introducing fresh fluid through the cystoscope and the effects observed. The ureteral orifices were so indistinct that accurate observation of changes in their shape, due to increased intravesical pressure, was impossible. The jets, however, continued to be vigorous even when the bladder had been so distended that it could be felt to reach half way between the pubis and the umbilicus. The intravesical pressure thus produced supported a column of water 29 cm. in height. This was increased to 91 cm. by firm abdominal pressure, such as is recommended for evacuation of the bladder contents in these cases, with no visible result as regards the issue or the colour of the jets.

Though I have found that the presence of the ureteral catheter in the uretero-vesical orifice sometimes interferes with the valve-like action of the latter, I determined to try the effect in this case. Accordingly small catheters which did not tightly fit were inserted, and passed for about one and a half inches along the ureter. The jets were now transformed into a series of drops, three or four at a time, from the distal end of the catheter. No amount of abdominal pressure, within the limits of safety, was capable of forcing fluid up into the ureters and out through the catheters which drained them. Urine was collected from each side while pressure was being made, and was found, notwithstanding all the manipulations carried out, to be clear, though the bladder contents were turbid from the presence of minute floating particles of pus.

The integrity of the uretero-vesical valvular mechanism in this case was demonstrated by the following tests:

1. Increase of pressure did not cause any appreciable alteration in the character of the jets.
2. No accentuation of flow through the ureteral catheters occurred on pressure over the bladder through the abdominal wall.
3. The fluid issuing from the catheters throughout the observations remained of the same colour, and free from pus, which could not have been the case had it been diluted by admixture with the contents of the bladder.

It is also interesting to note that in this case apparently the kidneys were not yet affected. Indigo-carmin appeared in normal time, and the specimens from both sides had a specific gravity of just under 1015 and were free from pus and albumin.

There are three obstacles to the passage of fluid from the bladder to the ureter in a normal man. First, the peristalsis of the ureter, which is continually driving its contents towards the bladder; secondly, the tonicity of the uretero-vesical sphincter; and, thirdly, the valve formed by the oblique course of the lower end of the ureter through the coats of the bladder. The last-named arrangement is such that increased intravesical pressure, whether produced by urine or by fluid introduced through the urethra, actually tends to increase the efficiency of the valve, provided that the ureteral orifice is not paralysed or dilated. There is no evidence that in a normal subject the ureteral openings can be forced by distending the bladder from without. Having regard to the state of the ureters and their orifices as observed by cystoscopic examination in the cases mentioned, it would appear to be safe, from the point of view of forcing the uretero-vesical orifices, to attempt to empty the bladder by manual massage or pressure. It has been proved in animals that with moderate intravesical pressure, regurgitation of air, milk, and coloured fluids introduced into the bladder may take place from the latter into the pelvis of the kidney. It is quite possible that under certain circumstances a similar regurgitation takes place in man, but the observations here recorded would appear to show that it is not favoured by any abnormal relaxation of the uretero-vesical orifice special to spinal injuries.

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MANAGEMENT OF VENEREAL DISEASES IN EGYPT DURING THE WAR.

BY

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THE efforts made in Australia to deal with venereal diseases on a comprehensive scale date from the Dunedin Session of the Australasian Medical Congress (1896), and culminated in the comprehensive investigation made by the Government of Victoria in 1910 and 1911.

From 1911 to 1914 a good deal of educational work was done. Clinics were provided, but the Government did not move as fast as the Advisory Committee to the Ministry of Public Health (of which I was a member) thought necessary. Accordingly, a committee of medical men and women was formed, and drafted a circular, and arranged with the leading chemists that prophylactic outfits, each accompanied by one of these circulars, should be sold. Before, however, actually taking action, the circular was sent to every member of the medical profession and to every minister of religion in the State. They were asked to express approval or disapproval of the step proposed to be taken; if they disapproved they were asked to indicate a better method of controlling these diseases. All the medical men who replied expressed their approval. Of the 800 ministers of religion, about sixty replied; a strong minority replied in dignified language expressing approval, but at the same time regret that such a step should be necessary; a majority disapproved, whilst a few were simply abusive.

A deputation from the Council of Churches met the Medical Committee and a frank discussion ensued. The venerable president stated that he did not approve of the method proposed, but that he had no alternative to suggest. The committee asked him whether the churches felt any responsibility for the wholesale infection of the innocent which goes on at present and whether he could withhold assent from measures which would save them. Finally, the committee invited the Council of Churches to visit the asylums, the women's hospital, and the venereal clinic, examine the facts and meet again. At this juncture and

in the frame of mind indicated I left for Egypt on the outbreak of war.

On the way to Egypt, by direction, I gave systematic lectures to the 800 men on the ss. *Kyarra* on the natural history of these diseases and on the modes of prevention and treatment. The attitude adopted was that now familiar—namely, urging abstinence, but in its failure precautions against infection.

On arrival in Egypt in January, 1915, I found that the military authorities were much perturbed by the amount of venereal disease amongst the troops, and, after consultation, General Sir William Birdwood entrusted me with the organization of a moral and military campaign so far as the Australian troops were concerned. He informed me, however, that he was unable to authorize the use of prophylactics, and that any medical officer who adopted that policy must do so entirely on his own responsibility.

I visited all troops arriving from Australia. I handed to the officers a circular from General Birdwood, and the matter was fully discussed with them. Then each soldier was given a warning leaflet. Consequently every officer and every man arriving in Egypt was fully and adequately warned and a proper appeal made for his help.

In my own unit, however, the 1st Australian General Hospital, by permission of the officer commanding, the education begun on the voyage was continued. In addition, prophylactic outfits of calomel ointment and argyrol jelly, together with the Victorian circular, were made available for anyone who wanted them, with the intimation that whilst I should be better pleased if they were not required, still if exposure was contemplated, they should be used in the interests of the service. It may be that in other units similar measures were taken at that time, but of such action I have no first hand knowledge. At the same time, a number of other steps were taken—for example, limitation of the hours of sale of liquor.

The Result.

Before the troops left for the Dardanelles 800 to 1,000 men were known to be suffering from venereal disease at any one time (2.5 per cent. to 3 per cent. of the force). The average stay in hospital of a venereal case was sixteen days, so that the number of infections was large. In addition, 1,344 men were sent back to Australia, and 450 to Malta. The cost of sending a soldier to Egypt and back to Australia, together with his equipment and pay has been estimated at £300. If so, the cost of these cases to the State must have been somewhere about £500,000 without any commensurate return.

At this juncture a medical officer in conference challenged our estimate of the value of prophylaxis, and a test examination was immediately made of all the men in our own unit who had been supplied with outfits whenever they wanted them. Only one man had been infected, and he had not used the outfit. The number of men examined was under 200.

The number of infected was so large and the damage so great that renewed efforts were made, and the moral campaign was pushed harder than ever. By arrangement, the Y.M.C.A. opened the now celebrated Esbekieh Soldiers' Club, the Central at Alexandria, and many others. We recognized that men cannot be made moral against their will, but they can be given a reasonable and healthy alternative.* Furthermore, as time passed by the men were treated to personal exhortations, and were given printed documents, such as "Women: a Word to Men" (Y.M.C.A.); "Consequences" (Y.M.C.A.); "A Warning to Men Going Abroad" (The Association for Moral and Social Hygiene).

During the latter half of 1915 I ceased to be in charge of the work, and in November was invalided to England. I am inclined to think that for some time there was an interregnum in which no one pushed the work.

The result was that an intense moral and restrictive campaign, together with constructive work in the establishment of magnificent soldiers' clubs, staffed by ladies in some instances, had produced a moderate result. It had secured tolerable decency; there were no obvious orgies, but there was far too much venereal disease. On the

other hand, where prophylaxis had been properly taught and applied, the diseases were practically non-existent.

At the end of 1915 the men returned from Gallipoli, and later moved to France, and during this period infections became more numerous.

From January to May, 1916—that is, five months—there were no fewer than 10,000 known cases in Egypt. The matter was regarded as so serious that a combined civilian and military committee was appointed to investigate and recommend. This committee—the Cairo Purification Committee—appointed subcommittees in other cities and took much evidence from medical officers and others. The conclusions have never been formally published, but in practice may be expressed as follows:

1. Rigorous repression of public indecency, unnatural offences, the suppression of pimps, the control of advertisements, and the restriction of the sale of alcohol.
2. Continuance of the system of medical examination of prostitutes.
3. Provision of ablution rooms and the supply of prophylactics.
4. Moral and hygienic lectures, guides to meet trains, and the like.

These measures were adopted, and by the middle of 1917 the diseases were again under control and the second phase of the Egyptian venereal diseases campaign was closed.

Again attention became less acute, the advance into Palestine took place, and another outbreak of venereal disease occurred. Another inquiry was held, this time by one combatant officer. After a full investigation, a combined campaign was again instituted and conducted with vigour. The chaplains did their best on the purely moral side. The medical officers delivered lectures and were allowed to provide ablution rooms. For a third time the disease was checked and held. The lesson to be learnt, however, is that it would have been better to place the matter throughout in the hands of one competent senior officer who should have made himself acquainted with every detail and every phase of the problem. His advice would have been indeed valuable.

Experience at Port Said.

Whilst these events were taking place throughout Egypt a remarkable development had occurred at Port Said. Lieut. Colonel Elgood, C.M.G., was appointed Base Commandant of Port Said at the outbreak of war and has occupied that difficult and important post ever since. He states that before taking office he had no experience of the management of venereal disease and suddenly found himself in an uncharted sea of trouble.

He had to deal with a city of mixed nationalities, with multifarious consuls and with consular law, with a centre of the white slave traffic, and with very large numbers of troops and sailors of all nationalities—European and Eastern. Martial law was proclaimed in November, 1914. He did his best, and the activities are summarized as follows:

- The suppression of the white slave traffic.
- The closing of the brothels in the European quarter.
- The segregation of the women who would not leave Port Said in the Arab quarter, where they were placed under the control of the medical officers of the Egyptian Public Health Department and were systematically examined. Experience having proved that the results of such medical examinations are misleading and dangerous, a subcommittee of the Cairo Purification Committee at Port Said was formed to deal with the local aspect of the problem and to assist in the development of healthy social agencies for the benefit of the men.
- The punishment of pimps and touts.
- The restriction of the sale of alcohol to the hours of 1 to 3 p.m. and 6 to 9 p.m. Enforcement of this order was difficult.

With all these activities he gradually realized that venereal disease continued on a large scale, and he then followed the conclusion of the Cairo Committee and authorized the ablution tent plan. The result was that of 9,282 men who passed through the local rest camp, 4,580 reported exposure, and there were only 13 infections.

Ablution Tent.

- The measures adopted in the tent were:
 1. Washing with a solution of perchloride of mercury 1 in 1,000.
 2. Irrigation of the anterior urethra with a solution of potassium permanganate 1 in 3,000.
 3. Application of calomel ointment and the use of bandages to avoid soiling the clothes.

* A full description of this splendid work on the part of the Y.M.C.A. will be found in the book published by Lieutenant Deane and myself entitled *The Australian Army Medical Corps in Egypt*, and in a forthcoming work of my own, *The Y.M.C.A. in Egypt*.

Such in outline is the history of this remarkable effort, the results of which agree with those obtained elsewhere in Egypt. When Lieut.-Colonel Elgood introduced prophylaxis he did not in any way relax any of the other precautions.

General Conclusions.

The lesson taught by the experience in Egypt is that all the repressive measures, all the constructive social measures, all the educational efforts and all the emotional appeals result in only a limited amount of success and only reduce venereal diseases to a moderate extent. It is evident that a very large number of men either find the sexual appetite overpowering or deliberately indulge, and unless some form of prophylaxis is adopted many infections are certain. Some of the men were quite candid and stated they intended to indulge, despite generals, doctors, and chaplains, and with or without prophylaxis, though they preferred to be safe.

The conclusions reached by me were that primary prophylaxis and ablution tents are both quite effective in preventing infection. The objections raised by some people to primary prophylaxis are both moral and medical. The moralists say that the free use of primary prophylaxis would induce people to become more immoral. I am unable to follow this line of reasoning. The use of prophylactics at the time of exposure, say 9.30 p.m., cannot produce a very different moral result from the use of prophylactics half an hour later in the ablution tent.

Medically the position, as I understand it, is as follows: The civil authorities in Great Britain contemplate establishing treatment centres throughout the country. These centres will subserve treatment, prophylaxis by ablution rooms, and educational propaganda. If all these measures are carried out nothing but good can result; but I still think many cases will arise owing to geographical difficulties, in which primary prophylaxis will be requisite. If these centres are to issue the outfits, so much the better; if not, it is certain some one else will provide them.

The aim of all medical men, I submit, is not simply the reduction of the amount of venereal disease, but the removal from this globe of the spirochaete and the gonococcus, a task which does not seem to me more difficult than the destruction of other noxious animals and plants.

Medical men dislike vice rather more than any class of people because they see it on the nauseous side. They are not, however, as medical men, professors of morality. Their business is to prevent or cure disease, and they have a right to object to their action being hampered by those who seem to think that venereal diseases were created to enforce chastity.

For the benefit of those interested I will state the case in the form of questions:

1. Is there any material difference from the moral point of view in preventing venereal disease by the use of measures adopted before, at the time of, or after exposure? He who exposes himself knows that in any event he is practically safe.
2. If morality is secured by fear of infection, why not forbid treatment altogether?
3. Is a morality which depends on fear of immediate consequences worth very much?
4. In practice does fear of infection deter many men?
5. If, as Mr. V. Warren Low put it, we discover tomorrow, as we may, a vaccine which will protect those vaccinated completely against venereal disease, will any one forbid its use, in the interests of morality?
6. Is not the fundamental ethical fact which concerns us the wholesale infection of the innocent which goes on at present?
7. Is it not a fact that the *lex talionis* cannot be enforced solely against the transgressor, but is enforced with terrible severity amongst the innocent?
8. Finally, why not frankly recognize the fact that the world will not be rendered more or less moral by the extinction of venereal disease?

To me the problem of chastity involves a much wider survey. We have a physiological instinct of great intensity round which has been built up the finer feelings which we value more than anything else in life. No sane man wishes to see the animal instinct divorced from these emotions, but he cannot fail to see that if the legitimate gratification in marriage is postponed to the summer of life irregular relationships are certain to be formed. If a

be asked why men and women marry so late in life, the answer is the standard of external requirements set, and, as a valued friend observed, still more the artificial assessment of those values. The matter lies largely in the hands of women. If they revise their standards of value, most of the sexual difficulties will disappear.

But any revision requires a complete knowledge of the fundamental data, a clear and sane vision, and good judgement. Until social arrangements are recast, irregular sexual relationships are likely to continue, and whilst they do prophylactics are necessary for bodily salvation.

To me, much of the value of the knowledge gained in Egypt was contact with the facts of the case. We had to deal with an organized commercial system of vice provided with agents catering for the gratification of this powerful instinct by healthy men. We found that we could not succeed by social and moral means alone, and that prophylaxis was an absolute necessity if the men were to be kept healthy. Without recasting social relationships I see no present prospect of sweeping away the whole of this hideous paraphernalia.

PRELIMINARY REPORT ON THE PRESENCE OF A "FILTER PASSING" VIRUS IN CERTAIN DISEASES,

WITH ESPECIAL REFERENCE TO TRENCH FEVER,
INFLUENZA, AND NEPHRITIS.

BY

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AND

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(A report presented to the Director-General Medical Services,
British Armies in France.)

DURING the autumn of 1917, and the spring and summer of 1918, observations were carried out by us on the pathology of acute infective polyneuritis. These resulted in the detection, isolation, and culture by the Noguchi method of an organism that reproduced the malady when inoculated into animals; and, further, this organism was recovered by culture from such experimental animals. The details of this work will be published in the forthcoming number of the *Quarterly Journal of Medicine*, and therefore need not be considered here.

The causative organism of polyneuritis belongs to the group known as "filter passers," in that the virus will pass through certain filters, although it is not a filter passor in the sense that some other organisms are, as it does not pass through certain filters with very fine pores.

The satisfactory results obtained in the study of polyneuritis led naturally to the same method that had proved so successful with this disease being applied to other diseases where there was either evidence, or suspicion, that the causative agent was a filter passer. A considerable number of such diseases have been investigated on these lines during the last six months in the laboratories attached to certain hospitals in the Etaples area.

Captain J. A. Wilson conducted the whole of the bacteriological portion of these inquiries in the laboratory of No. 20 General Hospital. Further, the observations on trench fever mentioned below were all made in this hospital, and Major Frank Clayton, R.A.M.C., had charge of the clinical observations on the volunteers inoculated with the virus of trench fever.

Captain Peacock controlled the whole of the entomological part of the inquiry, and more especially the provision of clean lice to control observations on infected lice.

The experimental work on animals, and the histological work on the lesions so produced, has been carried out by Captain Bashford in the special laboratory attached to the Observation Hut at No. 26 General Hospital. The present report is merely a preliminary statement as to certain results achieved; the full details—clinical, experimental, and histological—will be published later.

Trench fever was one of the first diseases examined at the suggestion of Captain Wilson. Other observers have

* Captain Bashford took no part in the portion of this work dealing with trench fever.

adduced evidence showing that the virus of this disease belonged to the group of filter passers.

Trench Fever.

The virus isolated in trench fever consists of minute coccus-like bodies, grouped in pairs, with the opposing surfaces flattened, and varying in size from 0.3μ to 0.5μ . It is Gram-positive and stains readily if the film preparations are washed in ether before the stain is applied. It passes through Berkefeld N and V filters, and also through Massen porcelain filters, and can be cultivated from such filtrates. It resists heating to a temperature of 56°C . for thirty minutes, and it is an anaërobe.

This organism has been recovered by culture from the blood in 11 out of 15 cases of trench fever examined during the pyretic stage, and in 3 out of 8 cases examined when apyretic. It was not found in over 40 control cases where blood culture with the same technique was carried out. A similar organism was recovered from four separate supplies of infected louse excreta kindly supplied to us by Sir David Bruce.

It was not found in thirty-one specimens of excreta from batches of clean lice.

The culture obtained either from the blood of man, or from louse excreta, when inoculated by scarification into man, produces a mild illness, and the organism can be recovered from the blood by culture during such illness, and also from clean lice fed on the patient during the illness.

Influenza.

The virus isolated in cases of influenza consists of very minute rounded coccus-like bodies, varying from 0.15μ to 0.5μ . It is Gram-positive, and passes through Berkefeld N and V filters and Massen porcelain filters. It is an anaërobe, and resists heating to 56°C . for thirty minutes.

It has been isolated by culture from the blood in 6 out of 9 cases examined, from the sputum in 6 out of 6 examined, from pleural fluid in 4 out of 4 examined, and from the cerebro-spinal fluid in the only case so examined. It has also been isolated from the lymphatic glands *post mortem* in the only two cases examined. This organism can not only be grown from the blood, and from exudates, but it can also be seen in stained films prepared from exudates—for example, sputum, pleural fluid, cerebro-spinal fluid.

The culture (second generation), when inoculated into animals subdurally or intravenously, produces illness in guinea-pigs and monkeys, and on *post-mortem* examination the following lesions have been found: Extensive lobular pneumonia with haemorrhages, some nephritis, myocardial and hepatic lesions, such as extreme congestion, interstitial haemorrhages of small size, and fatty degeneration. Passage experiments done from such animals when slightly ill, by injecting their blood, bile, etc., into healthy animals, causes in these more severe and even fatal illness, and *post mortem* the same lesions are found. The organism has been recovered by culture from the tissues of such experimental animals.

Nephritis.

Up to the present time (January, 1919) only one variety of nephritis has been investigated—that is, that characterized by the presence of pyrexia and haematuria at the onset.

The virus isolated in such cases of nephritis consists of a round coccus-like body varying from 0.3μ to 0.6μ in size, and in culture often occurring in the form of short chains of four individuals. The same organism may be seen in urinary sediments either singly or in pairs. It is Gram-positive, and passes through Berkefeld N and V filters, and also through the Massen porcelain filter. It is an anaërobe, and resists heating to 56°C . for thirty minutes.

It has been isolated from the blood in 6 out of 9 cases examined, and from the urine in 7 cases. The culture (second generation), when inoculated into animals, produces nephritis in monkeys and guinea-pigs. In monkeys this can be determined not only by *post-mortem* examination, but also clinically, since the urine contains blood, albumin, and casts. In both guinea-pigs and monkeys extensive lesions, glomerular and tubular, are found on microscopic examination. In severe cases pulmonary lesions are also present.

The organism has been recovered by culture from the tissues of the animals experimentally inoculated.

These three diseases are those that have been most

studied as yet, but organisms of the same group, although differing from one another, have been recovered by culture in a number of other diseases of obscure etiology. In most of these no adequate experimental work has been possible up to the present, and in others it is incomplete owing to insufficient time having elapsed to establish results with certainty. Amongst the more important diseases where true "filter passing" organisms have been isolated by culture from the blood, and seen in suitably stained films, mumps, measles, rose measles, and typhus may be mentioned. In mumps four cases have been examined, and all gave the same positive result. Two cases of typhus have been examined, but as yet it has only been possible to get material from one each of measles and rose measles.

An organism allied apparently to that of polynucleitis has been isolated from brain tissue in cases of encephalitis lethargica, both from material obtained from England, and also from cases observed in the army in France. A considerable amount of histological work has been done on the lesions present in animals (monkeys) successfully inoculated with these cultures. These results will be published later.

If the organisms found in polynucleitis and encephalitis are excluded, all the others have many points in common and possibly belong to one group. Although exceedingly small, they present individual differences in their morphology and in their mode of growth in culture. These details must be reserved for fuller and later publication.

Etampes, Jan. 21st, 1919.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TREATMENT OF THE WAR PSYCHO-NEUROSES.

IN a memorandum under this heading (January 11th, 1919, p. 42) Captain Prideaux states that forgotten experiences are the rule in psychoneurotic patients, and infers that the symptoms are in all cases to be attributed to these latent experiences, their ultimate cure being brought about by their "revival" or reassociation with the general content of consciousness. In support of this contention he quotes three cases.

Case I illustrates the fact that it is possible under a mild degree of hypnosis to restore the memory of past experiences, a sufficiently interesting fact, but one which is well known and generally accepted, and hardly relevant to the points at issue.

Cases II and III, on the other hand, show the relation of a special symptom to a forgotten experience, and, so far as they go, would appear to confirm Captain Prideaux's theory.

It would be interesting to know from what, if any, additional symptoms Cases II and III suffered, and if these also were to be referred to a forgotten incident, either the one quoted or some other not identified. It is at least remarkable that other observers who have examined a large number of cases of a similar type have been equally successful in their results, and this without invoking the particular agency he favours, and indeed in many cases by working on apparently diametrically opposite lines. I am ready to believe that "forgotten experiences are the rule in psychoneurotic patients," but I am not sure that it is not equally true of normal individuals. I am prepared to believe, moreover, that individual symptoms in a given case are definitely related to a specific but forgotten incident, but when I am asked to accept this as the principle underlying all or even the majority of the psychoneuroses I must demur.

My purpose, however, is to plead for a more catholic acceptance of the various forms of psychotherapy, and especially for a consideration of the individual cases on their merits. One may have a prejudice in favour of hypnotic or waking-suggestion, the explanatory method of Dubois, psycho-analysis, or what you will. Experience has shown that each and all have their uses and their special application. For in the domain of the psychoneuroses, if anywhere, is it true that one man's meat is another man's poison. Moreover, the discarded system of yesterday leads by a natural evolution to the accepted theory of to-day, and, apart from its quota of "cures," is to that extent justified. But for Mesmer, Braid would never have written his famous treatise on *Neuropsychology*, in which

he showed that the effects produced by so-called animal magnetism were entirely subjective; and but for the classical encounter between Charcot and the Nancy school we might still be regarding hypnotism as a disease of the nervous system. Even Freud availed himself of the hypnoidal state in his early investigations in psycho-analysis if only as a means to an end. Dejerine and Guekeler amongst recent writers have exemplified the truly philosophic attitude of mind towards these questions. By their lucid and convincing account of the share of the emotions in the genesis and fixation of obsessions and morbid mental states alone, they would have earned our gratitude.

If, therefore, the patient is highly suggestible and his mind is an open page waiting to be written upon, by all means persuade him "*for his good*"—there is nothing inherently indefensible in the process, even though the treatment is not directed, properly speaking, to his higher intelligence. Similarly, if a troublesome symptom is cured by hypnosis it must not be supposed that the whole personality has been altered, and it will not be surprising if the patient comes up six months later with a wholly different mental syndrome, which yields in turn to the same treatment. The explanatory method of Dubois, which was primarily addressed to the intelligence, fails in so many cases because man is largely a creature of the emotions, and Dubois's method failed to take sufficient account of the fact. It is none the less true that there are individuals in whom the rational appeal is the only successful one. Psychologists say that the emotions supply the dynamic energy of the mind, galvanize, as it were, the purely intellectual functions into activity, or more correctly, it is the affective element entering into every idea which gives it its purposive and creative value. This certainly appears to be borne out by experience. The psycho-analysts, on the other hand, attach equal weight to the emotions, but as pathogenic agents relegate them mostly to the plane of the subconscious. So that for them the springs of our actions or "conative tendencies" are hidden from us. They further inform us that we are not really such rational beings as we suppose, that, in vulgar parlance, we can always "find a reason" for our actions, but that the alleged reasons are frequently a sort of camouflage for our hidden desires. This they call the process of "rationalizing." I believe this to be partly true, but I do not think it takes sufficient account of the power of self-introspection which most people possess in some degree—perhaps to their detriment. What self-introspection does not reveal to us in moments of clear vision is generally elucidated by the disinterested efforts of friends and critics. This I believe to be quite the common experience. When the psycho-analyst further informs us that the act of forgetting is always purposive and significant—that, in short, we only forget the things we wish to forget—once again one's credulity is strained. Surely if there is such a thing as a normal process of memorizing or retaining an idea, presumably a failure of the memory function is as natural a phenomenon as, say, a digestive disturbance or a passing headache. Moreover, what becomes of the memory, as an instrument of the mind, if it is to be invested with an autonomy and purpose of its own?

So with all the various types of mental therapy, none of them can lay claim to an exclusive and special validity. For after all, it is the individual who counts and not the method; and if this be true of the patient it is at least equally true of the physician.

J. E. MIDDLEMISS,
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Act Committee; late Lieutenant R.A.M.C.

GANGRENOUS CYSTITIS OF GONOCOCCAL ORIGIN.

WHILE serving in the Mediterranean about two years ago the following case came under my care for haematuria:

The patient, a skipper R.N.R., aged 27, stated that six months previously he had had an attack of acute gonorrhoea, and that the urethral discharge had never completely disappeared. He had treated himself from the commencement by urethral injections of potassium permanganate, and he had also taken the drug by the mouth. He admitted having caused himself considerable pain at times owing to the strength of the lotion used.

A fortnight before I saw him haematuria came on suddenly and without warning. The bleeding ceased in twenty-four hours. A fortnight later the haemorrhage had recommenced.

He then complained of having to pass urine every half-hour by day and twelve times during the night. Pain in the suprapubic region followed the act of micturition. His general condition was poor; frequency of micturition prevented sleep. The pulse was 90, and the temperature subnormal.

Rectal examination revealed no evidence of disease of the prostate, but palpation of the base of the bladder elicited some tenderness. There was also tenderness on pressure in the hypogastric region immediately above the pubes. He was passing bright red blood. For four days after the commencement of this second attack of haematuria there was no change in the local condition. Attempts to stop the bleeding by frequent irrigation of the bladder with solutions of silver nitrate of varying strengths failed; and it was therefore impossible to determine the cause of the haemorrhage by cystoscopy.

On the fifth day I was called up early in the morning to find the patient in great distress with blood pouring out of the urethra. The pulse was 100 and thready. The temperature, previously subnormal, had risen to 101°. The patient was transferred to the operating theatre, and under general anaesthesia I performed suprapubic cystotomy. On incising the anterior wall of the bladder I found the whole mucous membrane swollen and in places sloughing. Arterial blood was escaping from beneath these sloughs. The pathological condition was similar to that observed in any virulent infection of a mucous membrane where secondary haemorrhage occurs. The bladder was irrigated with silver nitrate solution (1 in 5,000), packed tightly with gauze and a drainage tube inserted. During the following forty-eight hours the general condition showed a slight improvement, and the bleeding from the bladder temporarily ceased. On the third day the temperature rose to 103°. Cough commenced, and the breath was offensive. A severe haemorrhage from the bladder occurred on the fourth day, and when removing the gauze packing large sloughs came away. After thorough irrigation with a strong solution of silver nitrate the bladder was repacked and morphine $\frac{1}{2}$ gr. given hypodermically. From this time until death, five days later, the patient grew rapidly worse. His breath became very offensive, and there was consolidation of the bases of both lungs, but no expectoration. The temperature rose steadily to 104°. The respirations varied between 40 and 48, and the pulse between 100 and 120. Examination of the fluid from the bladder, a mixture of urine, blood and slough, made by Surgeon Lieut. Commander R. Willan, R.N., demonstrated the presence of the gonococcus.

Post-mortem Examination.

The whole of the mucous membrane of the bladder was one large slough and in places the muscular wall had become gangrenous. The lower lobes of both lungs were also gangrenous, and the stench was horrible. Unfortunately, through an error, investigation of the bacteriology of the diseased lungs was not made, but clearly the patient died of gonococcal septicaemia. All the other organs of the body were healthy.

Infection of the bladder is one of the rarer complications of gonorrhoea; a remarkable fact, since the posterior urethra and prostate are frequently involved in this disease; nor is it easy of explanation, when one remembers that the gonococcus finds its habitat in the submucous tissues of the urethra, which are continuous with those of the bladder. Whatever the explanation may be, experience has shown that when cystitis does occur there is a history of too drastic treatment of the local condition. In this case the patient, foolishly treating himself, had used too strong injections. In Thomson Walker's treatise on genito-urinary surgery the author refers in the chapter on cystitis to exfoliation of the mucous membrane of the bladder in very virulent infections, and states that the necrosed membrane may be passed as a cast of the bladder.

A. CLIFFORD MORSON, F.R.C.S. Eng.,
Temporary Surgeon Lieutenant R.N.

Reports of Societies.

MEDICAL ASPECTS OF AVIATION.

A LECTURE on medical aspects of aviation was delivered before the Royal Aeronautical Society on January 15th by Lieutenant L. E. STAMM, M.D., R.A.F., the chair being taken by Lieut.-General Sir ALFRED KEOGH.

In dealing with the conditions of the air involving strain on the physical functions of the body, the lecturer pointed out that these were chiefly height, centrifugal force, and equilibrium, and emphasized the fact that those stresses and strains not only demanded healthy organs, such as heart and lungs, but above all a sound controlling nerve mechanism. Various tests had been devised (for which credit was chiefly due to Lieut.-Colonel Flack) by which pilots could be examined on the ground for their capacity to withstand these strains, and they were specially directed to testing this controlling nerve mechanism as well as the organs themselves. Dr. Stamm's own work had been the

determination of the essential mental qualities of a good pilot and the means by which these might be detected. An experienced pilot controlled his machine automatically, but in the air circumstances constantly arose calling for conscious discrimination, judgement, decision, and action in the most rapid manner. For this not only quick and accurate co-ordination was required between senses and muscles, but also between these and the higher mental functions. To test this it was not sufficient to take the "simple reaction time" (the interval of time between a person receiving a signal and his response to it) as in the French air service, because the higher conscious mental functions were not involved. The lecturer demonstrated an apparatus, devised by him, by which a number of different signals could be given, requiring different responses, the candidate not knowing which to expect, and consequently necessitating conscious thought and decision.

Briefly, the apparatus consists of four signals, two lights, a horn, and a bell. When one of these signals is given by the operator, a chronoscope registering to $\frac{1}{100}$ sec., and electrically driven, also starts, and the response of the examinee consists in touching a key appropriate to the signal, which stops the chronoscope. The interval of time is then read off. The examinee is first given a series of each signal, then a series of two signals, the examinee not knowing which to expect, then a series of three-signal tests, and finally four-signal tests. Each series involving more conscious thought shows a longer reaction time, and the mental ability is tested by the rapidity and accuracy of response in proportion to the complexity of the test. The final four-signal test is the crucial one, and as it involves considerable adjustment and co-ordination between senses and muscles, and also calls for rapid and accurate working of the higher conscious mental functions, it offers a complexity of conditions similar to that involved in piloting an aeroplane.

These tests were applied to 150 cadets at the Northolt aerodrome, and an independent opinion was obtained from the instructors as to the capacity of the cadets as pilots; they were classified as "very good," "good," "average," or "poor." The results of these tests were thrown on the screen in tabulated form and showed that there was remarkable agreement with the opinions of the instructors. Those giving reaction times of about $\frac{1}{100}$ sec. for the four-signal tests were for the most part marked "very good" or "good," those with a reaction time of about $\frac{1}{80}$ sec. were usually "average," and those above $\frac{1}{60}$ sec. were "poor" or "turned down" or "sent to heavier machines." In addition to a quick alert mentality, a good pilot must also possess emotional stability, so as not to be liable to mental paralysis by the emotion of fear. The lecturer considered that a rapid pulse caused by uneasiness at coming before a doctor for medical examination was a very fair indication of emotional instability or "windiness." Quick accurate judgement and emotional stability were the two chief mental qualities of a good pilot, and there should be a nice balance between them. The aviator required above all things a strong tough nervous system, able to withstand all stresses and strains, both mental and physical, in the air, to control well the vital organs, to react to external conditions quickly and accurately, and not affected detrimentally by emotional disturbance. In this connexion the lecturer suggested the term "nerve-physique." This type of nervous system was to be found most often in young men who had led an outdoor life and engaged habitually in sports.

Referring to the ill effects of alcohol and tobacco on pilots, it was pointed out that staleness from stress of long service led to greater indulgence in these poisons, and it was recommended that no one should be engaged in continual flying for more than three months without at least a fortnight's complete rest. The lecturer urged the same medical supervision for pilots in civil life as in the R.A.F. by medical men specially qualified for the purpose, and claimed that it was highly desirable that medical officers engaged in such work should have some personal experience of flying; he had found his own small flying experience of the greatest value.

A discussion followed, in which Colonel FLACK, Captain RIPPON, Captain THURSTON, and Sir MACKENZIE CHALMERS took part, and spoke appreciatively of Dr. Stamm's work.

LIVERPOOL MEDICAL INSTITUTION.—At a pathological meeting held in December, when Mr. THIRLWALL THOMAS, the president, was in the chair, Captain E. E. GLYNN

narrated a case of acute yellow atrophy in a munition worker with a pseudo T.N.T. reaction in the urine. The patient, a girl aged 20, died comatose and jaundiced after a week's illness nine months after leaving the factory. The liver was soft and yellow and weighed 41 oz. There was intense necrosis with slight fibrosis and round-celled deposit; fat was in excess in places. By a process of exclusion the diagnosis was reduced to acute yellow atrophy and the urine reaction explained by a vegetable aperient (rhubarb). Captain S. M. CONE, U.S.A., read a paper on the growth and gross appearances of war-injured nerves, based on a study of over 500 cases. His conviction, from clinical, gross, microscopic and experimental observation, that nerves may grow from Schwann-sheath cells wherever injured, as well as from the central end of a divided nerve, was emphasized. Unusual and early recoveries occurred where the divided ends came together in a protoplasmic state. Wallerian degeneration always preceded the new nerve growth. A trophic connexion with the spinal centre was essential for the maturation of new fibres. The paper was illustrated by lantern charts of normal nerves and of injured nerves in process of repair.

Reviews.

EARLY ARYAN SCIENCE.

THE ancient Hindus achieved, in both abstract and concrete science, a degree of excellence which has excited wonder and admiration, although modern knowledge has, both in methods and results, greatly transcended the early efforts of even the most civilized and progressive nations. In discussing Hindu achievements in exact science, Professor BENGY KUMAR SARKAR avers that the main object of his little book "is to furnish some of the chronological links and logical affinities between the scientific investigations of the Hindus and those of the Greeks, Chinese, and Saracens." His disquisitions are avowedly somewhat sketchy, but he supplies an elaborate bibliography which will be found helpful towards a more detailed study of this interesting subject.

The particular sciences with which the book deals may be classified as abstract, physical, and medical. The sciences of number and form occupy six chapters; physical sciences also six, and medical science four. Curiously all reference to mental sciences—grammar, logic, metaphysics and psychology—is omitted. The author makes it quite clear that the Chinese on one side, and the Greeks and Arabians on the other, were mutually indebted for knowledge to the Hindus, but on which side the preponderance of obligation rested as regards either general or medical science it is difficult to say. It is not improbable that both Greeks and Hindus derived much of their science from a common prehistoric Aryan source. The Arabians probably drew from both Greeks and Hindus, and the Chinese no doubt interchanged with the Indians. The early medical researches of the Hindus were recorded in the *Ayurveda*, much of which survives in the writings of Charaka and Susruta of much later date. The acquisitions, medical and surgical, chronicled by these authors were perpetuated, practically unchanged, by oral tradition, until the invasion of India by Western nations, especially by the British, introduced the doctrines and methods of rational and progressive medical science.

The Hindu mind is prone to abstraction, speculation, and mythology, and though much exact observation had been made in anatomy by the dissection of animals and men, good descriptions of diseases recorded, many mineral and vegetable drugs empirically discovered and employed, and rough surgical operations practised with rough appliances—still the three supposititious humours, *vajra*, *petta*, and *kofa* (wind, bile, and phlegm), dominated both physiology, pathology, and therapeutics, just as astrology governed and debased astronomy, and alchemy chemistry.

The work is clearly arranged and pleasantly written, and will be found both interesting and instructive.

Hindu Achievements in Exact Science. A study in the history of scientific development. By BENGY KUMAR SARKAR, Professor National Council of Education, Bengal. London and New York: Longmans, Green, and Co. 1918. Pp. 82. (Cr. 8vo. 1 dol. net.)

RE-EDUCATION OF THE MAIMED.

The physical and occupational re-education of the maimed soldier is a subject of such world-wide importance that we cannot have too much discussion of it, and our thanks are therefore due to Surgeon W. F. CASTLE, R.N., for his translation, under the title *Physical and Occupational Re-education of the Maimed*,² of the book by JEAN CAMUS and his collaborators. While it does not make a large volume it includes essays by a score of contributors.

Although among the maimed are included men who have not lost a limb, yet the majority of cases here dealt with are those of amputation. The problem in France is somewhat different from that in Great Britain, for while here the vast majority of wounded are town workers, in France over 60 per cent. were employed upon the land in civil life. This simplifies the problem as regards the upper extremity, since it has been shown that among men who have suffered amputation he who has lost an arm is best fitted for agricultural pursuits, while the man who has lost a leg is perhaps better suited to town life, though even this is doubtful. A little reflection will make these statements comprehensible, but the fact that French experience shows that blind men are best employed in country pursuits is somewhat startling. At the time when the French original of this book was written—probably at least a year ago—there were 4,000 men in the French army who had lost the sight of both eyes, and it is estimated that three-fourths of this number might have been saved by the use of shell-splinter goggles.

In reviewing so condensed a work as this, which is packed with details, it is not possible to deal with most of the points raised, but an impression is left upon the reader of the enormous value of re-education. It seems clear that a universal artificial arm is an unattainable ideal. In fact, except for special tasks involving frequent repetition of similar movements or sequences of movement, anything more elaborate than the old hook is not likely to be used. The fact is, and it cannot be too much insisted upon, that no man will use an artificial hand for any purpose for which his sound hand can be employed.

Cases of amputation of both upper extremities form a class apart; only rarely can they be rendered self-supporting. Although re-education has not been so thoroughly or so generally carried out in this country as in France, the appendix by Mr. Dudley Myers on the re-education work at Roehampton and the institutions working with it will show what good work has been accomplished. Attention should be called also to the appendices giving an account of the Lord Roberts workshops, and to the description by Sir Arthur Pearson of the great work among the blinded at St. Dunstan's and elsewhere. To those unfamiliar with the results achieved at St. Dunstan's by re-education, it will seem incredible that a blind man who has lost an arm should be capable of becoming a skilled mechanic or even a competent poultry farmer, yet such is undoubtedly the case.

This book should be in the hands of every one who has to do with the maimed, and a copy should be at the disposal of every War Pensions Committee.

NOTES ON BOOKS.

PROFESSOR RUDDIMAN'S *Pharmacy, Theoretical and Practical*,³ is a book for the student of pharmacy, to be used in conjunction with the United States Pharmacopoeia and National Formulary. It is well arranged and clearly written; the author should, however, distinguish between virility (page 83) and virulence.

The fourth edition of MOOR and PARTRIDGE'S *Aids to the Analysis of Food and Drugs*⁴ is a valuable little book, full of information, and as well up to date as it is possible to be in these days of changing standards and orders. It should be in the hands of all students of public health.

² *Physical and Occupational Re-education of the Maimed*. By Jean Camus. Authorized translation by W. F. Castle, Surgeon R.N. London: Baillière, Tindall, and Cox. 1918. (Cr. 8vo, pp. xii + 195; 64 figures. 5s. net.)

³ *Pharmacy, Theoretical and Practical*. Including Arithmetic of Pharmacy. By Edsel A. Ruddiman, Pharm.M., M.D., Professor of Pharmacy and Materia Medica, Department of Pharmacy, Vanderbilt University. New York: John Wiley and Sons, Inc. London: Chapman and Hall. 1917. (Demy 8vo, pp. vi + 267. 8s. 6d. net.)

⁴ *Aids to the Analysis of Food and Drugs*. By C. E. Moor, M.A. Cantab., F.I.C., and William Partridge, F.I.C. Fourth edition. London: Baillière, Tindall, and Cox. 1918. (Fcap. 8vo, pp. xii + 268. 4s. 6d. net.)

Dr. CROCKER'S translation of the book on *Mastitis of the Cow*,⁵ by Dr. SVEN WALL of Stockholm, provides the reader with an interesting essay on a subject of great importance from the point of view of public health. The book is briefly but clearly written in summary style, and contains a great deal of practical advice as well as of scientific description. It should be in the hands of all who have to inspect dairies or slaughterhouses, or meat intended for human consumption. The translation has been adequately performed.

Professors MORAT and DOYON of Lyon are to be congratulated on the appearance of the fifth and last volume of their monumental *Traité de Physiologie*.⁶ This contains an account of the organs of special sense, locomotion, and reproduction, and is written with the thoroughness and clarity which have characterized its predecessors. The whole treatise forms a book of reference in which the literature of the subject is submitted to a critical analysis; the reader has the evidence placed before him, and is left to draw his own conclusions from it but little biased by the authors.

⁵ *Mastitis of the Cow*. By Sven Wall, Assistant in the Veterinary High School at Stockholm. Authorized translation, with annotations, by Dr. Walter J. Crocker, B.S., V.M.D., Professor of Veterinary Pathology, University of Pennsylvania. Philadelphia and London: J. B. Lippincott Company. 1918. (Med. 8vo, pp. x + 166; 29 figures. 12s. 6d. net.)

⁶ *Traité de Physiologie*. Par J.-P. Morat, Professeur à l'Université de Lyon, et Maurice Doyon, Professeur adjoint à la Faculté de Médecine de Lyon. Paris: Masson et Cie. 1918. (Roy. 8vo, pp. xxx + 872; 221 figures. Fr. 25.)

THE MILITARY MEDICAL SERVICES
IN 1918.

THE following notes constitute the fifth annual review of the military medical services in the war, with tables of casualties and honours. Previous articles were published in the *BRITISH MEDICAL JOURNAL* of January 2nd, 1915, January 15th, 1916, January 27th, 1917, and February 9th, 1918.

As the official *Army Lists* are not yet available for consultation it is not possible to give the numerical strength of the various services. Nor can the percentages of casualties and honours to strength in the various services be calculated.

The mortality among medical officers during just four and a quarter years of war is briefly shown in Table I. Medical officers of all services, and also medical men serving as combatants, are included in this table. In both this and the following table officers who died of wounds, or who were lost at sea by enemy action, are included among the killed.

In all the tables the figures are probably not exactly accurate, but they are approximately so, within a few units. While deaths in action ceased from the date of the armistice—November 11th—deaths from wounds and from disease are included up to the end of the year.

TABLE I.—Deaths

Year.	Killed.	Wounded.	Total.
1914 (five months)	9	45	55
1915	97	45	142
1916	162	100	260
1917	258	135	393
1918	17	319	336
Total	685	654	1,036

The number of medical officers killed in 1918 is somewhat (13 per cent.) less than in 1917; this may be attributed to the cessation of hostilities nearly two months before the end of the year. The total of deaths from disease, on the contrary, is much higher than in any of the previous years—more than 50 per cent. above the totals for 1916 and 1917—and, for the first time, almost equals the number of killed. This increased mortality is due to the influenza pandemic, nearly half the total number of deaths from disease having taken place in the last quarter of the year.

In Table No. II are shown the numbers killed (including died of wounds and lost at sea), died while serving, wounded, missing, and prisoners, in each of the medical

services, during 1918. The figures of wounded, missing, and prisoners have been compiled from the daily casualty lists, as summarized weekly in the *BRITISH MEDICAL JOURNAL*, and may be considered approximately correct, except for a certain amount of overlapping—small compared to the total figures—due to men who died of wounds having previously been included as wounded, and most of those missing having subsequently been reckoned over again, either as killed or as prisoners.

In the absence of information as to the numerical strength of the different services it is impossible to reckon the percentages of casualties. In actual numbers the temporary officers of the R.A.M.C. head the list, the number of killed among these officers being more than four times, and the number of deaths from disease well over double, those of any other group. But the total number of these officers is far greater than that of any other class.

In the review of the year 1917 it was noted that the proportion of deaths to strength was probably higher in the Australian A.M.C. than in any other medical service. In 1918 it has been the Canadians who probably furnish the highest proportionate mortality, partly owing to the fact that six Canadian medical officers (as well as fourteen Canadian nurses) were lost in the *Llandoverly Castle*.

The seat of war in which casualties have occurred has not been given in the official casualty lists, and seldom given in private obituary notices. It is certain, however, that by far the greatest number have taken place in France and Flanders, though other fronts—Italy, the Balkans, Palestine, Mesopotamia, and East Africa—have all contributed their share. Many of the deaths from disease have, of course, occurred in England.

Retired officers of the R.A.M.C. and I.M.S. who have died while serving are included among the regular members of these services.

TABLE II.—Casualties and Honours, 1918.

	Killed.	Died.	Wounded.	Missing.	Prisoners.	Honours.
R.N.	14	18	13	2	2	48
R.A.M.C.	13	13	21	6	7	219
R.A.M.C.(S.R.)	10	11	54	5	6	123
R.A.M.C.(T.F.)	16	20	46	14	13	227
R.A.M.C. (temporary)	86	54	258	78	99	526
Australians	7	2	43	—	—	102
New Zealanders	3	1	1	—	—	22
Canadians	20	12	58	—	—	99
South Africans	1	4	1	—	—	41
E. and W. Africa	—	5	—	—	—	16
I.M.S.	2	15	5	—	1	69
I.M.D.	—	3	—	—	—	26
Combatants	1	1	—	—	—	—
Miscellaneous	—	4	—	—	—	—
Total	173	163	500	105	128	1518

ROYAL NAVY MEDICAL SERVICE.

The strength of the medical department of the Royal Navy is probably much the same as in the previous year. The number of medical officers killed during the year was fourteen, of whom eight were temporary surgeons and six surgeon probationers, or surgeon sublieutenants, as they are now called. Eighteen have died, of whom four were surgeon sublieutenants.

During the year new designations were given to the medical officers of the navy—compound titles, from Surgeon Vice Admiral to Surgeon Sublieutenant, being introduced, in place of those of the former ranks, Surgeon General to Surgeon Probationer.

ROYAL ARMY MEDICAL CORPS.

As stated above, little can be said about the strength of the different branches of the R.A.M.C. The number of

new appointments to the regular R.A.M.C. probably fully covers the loss by deaths in action and from disease, and by retirements. The number of Territorial medical officers probably remained much the same, while it seems likely that the number of temporary officers and of the Special Reserve somewhat increased, for demobilization had hardly begun before the end of the year.

The number of officers of the regular R.A.M.C. killed (including two lost at sea, one of whom was on the retired list), was the same as in 1917, thirteen; while the number of deaths from disease rose from five to thirteen. Of the Special Reserve, ten were killed, including one lost at sea, and eleven died, as compared with thirteen and two in 1917. Of Territorials, sixteen were killed, including one lost at sea, and twenty died, the corresponding figures for 1917 being twenty and nine. Of temporary medical officers eighty-six were killed, including eight lost at sea, and fifty-four died, as against ninety-two and thirty-six last year.

Among the medical corps of the Dominion forces losses fell most heavily on the Australians in 1917, on the Canadians in 1918. In 1917 the Australians lost eighteen killed and five died, in 1918 only seven killed and two died. The Canadians, on the other hand, lost twenty killed and twelve died, as compared with only four and seven in 1917. The twenty killed include six lost at sea, all in the *Llandoverly Castle*. Of the New Zealanders, three were killed and one died; the South Africans lost one killed and four died.

Wounded, Missing, and Prisoners.—The figures for the different services are given in Table II. The total of wounded is much below that of 1917, while the numbers of missing and prisoners are much higher.

Titles.—In the *London Gazette* of February 27th, 1918, the titles of Lieutenant-General and Major-General were granted to the Surgeon-Generals of the Army Medical Staff, just twenty years after the grant of the other military titles in 1898. Subsequently, the grant of these titles was extended to the retired Surgeon-Generals who were serving during the war.

Combatants.—One medical man serving as a combatant, a major in the artillery, was killed, and one, Brigadier-General A. A. Howell, died.

Dental Surgeons.—Two dental surgeons were killed serving as combatants. Three dental surgeons in the British, and two in the Canadian service died. These officers are not included in the table.

Sons of Medical Men.—The number of sons of medical men whose deaths have been reported in the *BRITISH MEDICAL JOURNAL* was 385 in 1916, 338 in 1917, and 318 in 1918. The great majority of these were killed in action, but a few have been included who died of disease, chiefly of influenza in the last quarter of the year. A good many of the medical officers killed and died were also sons of medical men, though not counted under this heading. The figures are doubtless very imperfect, especially as regards men serving in the ranks and in the Overseas Forces.

Medical Students.—The number reported killed in 1916 was 57, in 1917 it fell to 35, and in 1918 was only 16. Many of the sons of medical men who were killed or died had been medical students before joining the army, but are not counted a second time under this heading. Here again the figures are no doubt very incomplete.

THE INDIAN MEDICAL SERVICE.

The strength of this service probably remains much the same as a year ago, the number of new appointments by nomination probably about balancing the losses by death and retirement. A considerable number of temporary officers have been appointed during the year, but, on the other hand, many of the earlier temporary officers have gone out for various reasons. On the whole, the number of temporary officers has probably somewhat increased.

No officer of the I.M.S. has been reported as killed during 1918. Two—one a retired and the other a temporary officer—were lost at sea. Fifteen died serving, of whom two were temporary and three retired officers.

As in the British army, the Surgeon-Generals of the I.M.S. were granted the title of Major-General during the year.

The Indian Medical Department.

From October 2nd, 1918, the objectionable epithet of "subordinate" was dropped out of the title of this service.

and the I.S.M.D. became the I.M.D. For a long time past the epithet "subordinate" has been quite misplaced as regards the members of the assistant surgeon class, military and civil, though appropriate enough to the lower grades.

The names of members of this service do not usually appear in the casualty lists, but the deaths on service of three military assistant surgeons—one senior and two of junior grades—have been reported. The actual mortality must have been much higher. The service gained twenty-six honours, including two Military Crosses.

THE AFRICAN MEDICAL SERVICES.

Under this head are included the West African Medical Staff and the medical services of British East Africa, Uganda, British Central Africa, Nyasaland, and Rhodesia; but not, of course, the forces of the Union of South Africa. Many of the younger members of these services are holding temporary commissions in the R.A.M.C., and their statistics are included among those of the temporary officers. The deaths of five officers of these services, of whom only one held a temporary commission, have been reported.

MISCELLANEOUS.

The four deaths shown under this head were those of the surgeons of an Admiralty transport, a cable ship, a mercantile steamer, and a Chinese coolie corps.

THE NURSING SERVICES.

These services have suffered far more heavily in 1918 than in any previous year of the war. Nine members were reported killed, no fewer than thirty-nine were lost at sea, and seventeen were returned as wounded. Six Canadian nurses were killed or died of wounds in the bombing of the Canadian hospitals at Etaples by enemy aircraft on May 25th, and six more were wounded on that occasion. The remaining casualties, other than those at sea, were presumably also caused by enemy aircraft. The number who have died of disease has also been very large. The nursing profession, both civil and military, suffered very severely from the influenza epidemic in the last quarter of 1918, probably more severely than any other class of the community, the very high fatality among nurses being presumably due to infection at a period of excessive work.

Of the thirty-nine lost at sea, ten were lost in the *Aragon* in the Mediterranean on December 31st, 1917 (five of these, however, were included in the casualties for 1917); eight in the *Glenart Castle* in the Bristol Channel on February 26th; two in the *Kenilworth Castle* on June 4th; fourteen, all Canadians, in the *Llandovery Castle* in the Atlantic on June 27th; and three in the *Leinster* in the Irish Sea on October 10th; while two were drowned at Basra in January.

HONOURS.

The honours bestowed on members of the medical services are shown in Table III. The figures include the honours gazetted on January 1st, 1918, but not those of January 1st, 1919. The figures in the table are doubtless not absolutely accurate, considering the very large number tabulated, but they are approximately so.

The total number of honours is considerably higher than in 1917. The increase is shared by most of the services, except the regular R.A.M.C. and I.M.S., which are slightly less, and the New Zealanders, which are exactly the same. The chief increases fall to the Special Reserve, the Territorials, the temporary officers, and the Canadians. The number of honours bestowed on the medical department of the Royal Navy is, as usual, only small.

Honours conferred on retired officers of the R.A.M.C. and I.M.S. are included with those on the active list. The column headed "miscellaneous" comprises a number of honours of each of which only a few have gone to medical officers: Knighthood (including that of St. John), the Royal Victorian Order, the Indian Empire, the Territorial Decoration, the Royal Humane Society's and Albert medals; also, in the I.M.D., the Order of British India, Indian Order of Merit, and Indian D.C.M. The foreign orders include French, Belgian, Italian, Serbian, Greek, Portuguese, Japanese, and Egyptian decorations, no Russian orders being now granted.

TABLE III.—Honours, 1918.

	V.C.	K.C.B.	C.B.	K.C.M.G.	C.M.G.	D.S.C.	Bar to D.S.O.	D.S.O.	Bar to M.C.	Military Cross.	British Empire.	Miscell.	Foreign.	Total.
R.N. ...	—	3	6	—	6	6 ¹	1	6	1	—	4	4	11	43
R.A.M.C. ...	—	4	18	9	31	—	8	62	1	15	7	9	55	219
R.A.M.C.(S.R.) ...	—	—	—	—	—	—	2	7	16 ⁴	84	2	—	12	123
R.A.M.C.(T.F.) ...	1	—	3	—	11	—	2	54	18 ⁵	76	7	20	35	227
R.A.M.C.(Temp.) ...	—	—	11	5 ²	12	—	7	34	62 ³	324	13	—	58	516
Australians ...	—	—	1	—	9	—	1	33	3	41	7	—	7	102
New Zealanders ...	—	—	1	—	3	—	—	4	—	8	5	—	1	22
Canadians ...	1	—	2	—	9	—	1	21	3	44	7	—	11	99
South Africans ...	—	—	—	1	1	—	—	9	—	16	12	—	3	41
E. and W. Africa ...	—	—	—	—	—	—	—	3	—	7	5	—	1	16
I.M.S. ...	—	—	3	1	4	—	—	14	—	13	12	19	3	69
I.M.D. ...	—	—	—	—	—	—	—	—	—	2	4	18	2	26
Total ...	2	7	45	15	86	6	22	247	104	630	85	70	199	1518

¹ Includes one bar. ² One a G.C.M.G. ³ Includes six second bars to M.C. ⁴ Includes two second bars. ⁵ Includes one second bar.

The most coveted honour of all, the Victoria Cross, was conferred on only two medical officers during the year—Captain J. Fox Russell, T.F. (posthumously), on January 11th, and Captain B. S. Hutcheson, Canadian A.M.C., on December 14th. Ten V.C.s and two clasps have been gained by medical officers during the war; no other clasps, except these two, have ever been given. Out of the total of twelve, four Crosses and one clasp have been won by Territorials, two Crosses and one clasp by temporary officers, two Crosses by Canadians, and one each by the regular R.A.M.C. and the I.M.S.

In addition to the honours shown in the table, one medical officer from Newfoundland received the C.M.G., one from Barbados the O.B.E., and two Egyptian medical officers the M.B.E.

INTERNATIONAL COUNCIL OF SCIENTIFIC RESEARCH.

Meeting in London.

At the instance of the Royal Society a meeting of scientific societies was held in London last October to consider what should be done in respect of the international relations of science after the war. It was felt that, though wars have in the past interrupted the co-operation of individual men of science without destroying their mutual esteem, the conduct of the Central Empires in this war had rendered it impossible to renew personal relations with their men of science. Confidence, without which fruitful co-operation is impossible, could not be restored until the Central Empires have disavowed the political methods which led to the perpetration of atrocities that have aroused the indignation of the civilized world. It was proposed, therefore, that the international agreements for certain associations should be denounced, and replaced by others established by the allied nations, to which neutrals might in time be admitted. The conference appointed a commission to draw up plans for international scientific organizations. It proposed the establishment of national councils, to be federated into an international council. It adopted a resolution to the effect that the conference, holding all progress, whether industrial, agricultural, or medical, to depend upon the discoveries of pure science, called the attention of governments to the importance of theoretical researches conducted without regard to immediate results, to the necessity for making the grants for these purposes as large as possible, and to the importance of establishing large private and national laboratories of experimental science.

Meeting in Paris.

The conference separated with the intention of meeting again at an early date in Paris. This intention was carried

out, and this second conference was attended by delegates from the principal scientific societies of Belgium, Brazil, the United States of America, France, the United Kingdom, Italy, Japan, Poland, Portugal, Rumania, and Serbia. The members represented all departments of science, and included Dr. S. Flexner (America) for the United States; Dr. Roux, director of the Pasteur Institute in Paris, for France; and Sir E. Sharpey Schafer, professor of physiology in the University of Edinburgh, for the United Kingdom. The conference resolved itself into an international council and appointed an executive committee of five members to report upon certain scientific and technical questions. One of the first businesses of the executive committee will be to form new associations of men of science of inter-allied and neutral nations. As soon as this can be done a further conference will be held to establish an International Research Council. The committee will consist of Mr. G. Hale, director of the Mount Wilson Observatory, California; M. G. Leconte, director of the Royal Belgium Observatory; M. Emile Picard, secretary of the French Academy of Sciences; Professor A. Schuster, one of the secretaries of the Royal Society of London; and

M. Volterra, professor of mathematical physics in the University of Rome. The executive committee is to have its business office in London. M. Picard was elected its chairman and Mr. Schuster its secretary. The immediate work of the executive committee will be to establish international associations for astronomy and geophysics, sciences in which international co-operation is essential if they are to be carried on at all.

Declaration of Principle.

The conference adopted a number of resolutions of which we have given the general effect, but it also adopted a declaration of principle, which may be rendered into English as follows:

"The conference, recognizing that in matters of science the first advances are always the result of individual effort, considers it to be one of its fundamental tasks to encourage every effort having for its object the provision of the necessary material resources to assure to capable men of science the intellectual liberty essential to the success of scientific researches of a high order."

THE CENTRAL MEDICAL WAR COMMITTEE AND MEDICAL DEMOBILIZATION.

It is thought that a brief statement should be made as to the status and functions of the Central Medical War Committee with regard to the demobilization of medical officers now serving with the forces. In the JOURNAL of January 4th last (p. 16) a sketch was given of the history of the professional committees which undertook to organize medical effort in the war, and of the large share taken by the British Medical Association in their establishment, both in England and in Scotland. The Central Medical War Committee was formally appointed in 1915, on the instruction of the Annual Representative Meeting, to organize the medical profession in England and Wales and Ireland in such a way as would enable the Government to make the best use of every practitioner fit to serve the country, and to deal with all matters affecting the profession arising in connexion with the war. The Committee's scheme of enrolment, whereby many medical men were obtained for the army, was officially recognized by the Army Council both before and after the enactment of the first Military Service Act, 1916. The second Military Service Act, 1916, directed the establishment of professional committees to deal with claims for exemption made in respect of duly qualified medical practitioners, the decision of such committees being binding on tribunals. The third Military Service Act, April, 1918, provided for the appointment of the professional committees as statutory medical tribunals for the hearing of applications for exemption from military service by medical men; and the Central Medical War Committee was made the medical tribunal for England and Wales.

Thus, up to the time of the armistice, the Central Medical War Committee was exercising statutory powers under the Military Service Acts in the selection of medical men for service in the forces. In this process the Committee had in effect to adjudicate between the demands of the military authorities, the needs of the civilian population, and the personal claims of the medical men concerned, until the time when this work was undertaken by the Ministry of National Service. In considering civil needs the Committee worked in close collaboration with various Government departments, such as the Insurance Commissions and the Local Government Board. Each of these departments held the power to say that any medical man for whom it was responsible should not be withdrawn from civilian practice, though in point of fact this veto was seldom, if ever, exercised owing to the closeness of the co-operation which existed. As time went on the Ministry of National Service gradually had a larger say in the process of distributing medical men to the various forces, and undertook a corresponding responsibility for safeguarding the medical needs of the civil community.

When the armistice was signed the statutory duties of the Central Medical War Committee as a medical tribunal came to a stop, for with the cessation of recruiting its legal powers automatically fell into abeyance, as did those of all the other tribunals. The Ministry of National Service

was nominated as the Government Department through which the demobilization of civilian doctors serving as medical officers in the Navy, the Army, and the Air Force would be arranged (SUPPLEMENT, December 28th, 1918), and exercises its functions through an Interdepartmental Committee on Medical Services. This contains representatives of all the Government bodies concerned in the employment of medical men, under the chairmanship of Sir James Galloway, Chief Medical Commissioner of the Ministry of National Service. Two representatives of the Central Medical War Committee attend by invitation the meetings of this Interdepartmental Committee when their advice is required.

Many months earlier the Central Medical War Committee had, in the interests of medical officers, entered upon the study of the various problems which were bound to arise in connexion with medical demobilization, and a scheme of priority of release on personal and professional grounds had been drawn up. In view of its long experience in obtaining medical men for the army with due regard to civilian needs, the Committee felt that it ought to offer its help in the reverse process, and this offer was accepted by the Government departments concerned. The Committee has thus been enabled to take a considerable share in organizing the return of medical officers to civilian life upon an orderly and equitable basis. It is important to note, however, that its functions in this respect are advisory and consultative.

The scheme of priority, which was mainly the work of the Committee, has been adopted by the Ministry of National Service for the purpose of general medical demobilization (SUPPLEMENT, January 11th, 1919). The scheme is already being used in deciding the order in which the limited number of releases at present possible are to take place, questions of the civil needs of particular areas being dealt with concurrently by a separate procedure. In the meantime, the form of questions (which is the necessary sequel of the scheme) is being issued by the Ministry of National Service to all serving medical officers, and the information received will be placed at the disposal of the professional committees, whose advice and assistance will be used to the full in assessing the claims of individual medical officers. The final word, however, rests with the Minister of National Service, to whom the Government departments which formerly possessed the power of veto in the recruiting of a medical man have the right to make direct representations as to the demobilization of doctors coming within their purview. As in the past, the Central Medical War Committee will continue its active co-operation with the Government departments concerned—more particularly with the Insurance Commissioners—and will have an opportunity of knowing and commenting on the selection of names by them; all of which it is hoped will be helpful in making the wisest choice. But the Committee, while undertaking to do the best that lies in its power, cannot be held responsible to the same extent as was the case when it performed statutory duties as a medical tribunal.

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HOSPITAL RESIDENTS.

It was in the nature of things that during the war civil hospital authorities should find their chief difficulty in the lack of a supply of younger men for resident appointments. In the larger hospitals with medical schools the difficulty was partly met by the seconding of newly qualified men for a period of three months prior to joining the forces. The smaller hospitals without medical schools have endeavoured to meet the shortage in various ways. Services have been cut down to a minimum; the unfit in a military sense, women, and non-Europeans have been used when available; while the senior staff have often filled the gap, even to the extent in some cases of acting in turn as orderly officer. But the task has been very onerous, and it has been inevitable that the attendance on the civil population in hospitals should suffer. Since the signing of the armistice, and with the progress of limited demobilization, it has been felt that some amelioration of these conditions could be effected.

The professional committees, upon whom has depended so largely the adjustment of civil resources to military demands during the war, are now faced with the task of balancing the immediate needs of the community, the future efficiency of the medical profession, and the personal claims of the medical officers. When demobilization came under discussion the Central Medical War Committee, in common with the public at large, very early adopted the view that, other things being equal, priority of release ought to be given to those who had served longest and were oldest. At about the same time the epidemic of influenza showed how narrow was the margin of safety in medical attendance on the civil population. Hence it became necessary to recognize that before the priority scheme of the Committee could be put into force some measure of consideration must be given to urgent civil needs. This was felt so strongly by one Government department, responsible for the medical care of a section of the populace, that for a time there seemed to be some risk of attention being distracted from the good of the community as a whole.

The hospital resident is of value to the community not merely from the fact that he attends to the immediate medical requirements of a large number of people. In carrying out his functions he is increasing his own efficiency, and therefore the value of his services to the community in the future, in a way which is almost impossible under any other conditions. At a time, therefore, when the demand for well-instructed medical men is clamant, it is essential that means should be concerted to ensure that this stage of medical education is not unnecessarily curtailed. On the other hand, it must be recognized that peace is not yet signed; that the army, of 900,000 men, must still be kept supplied with young medical officers; that no hospital can expect to return as yet to pre-war conditions in respect of resident officers; and that any process of releasing younger men for the advantage, immediate or prospective, of the community should not work to the disadvantage of the older men on service. This brings us at once to some of the real

difficulties of the situation. In the first place, the interests of the older medical officer, especially if he has served since the beginning of the war and wishes to return speedily to the remains of his practice, are incompatible with the release of any large number of younger men. It stands to reason that every young man now withdrawn from the army must postpone to some extent the release of an older man. The army as it exists to-day requires a certain number of medical officers; if a young man is detailed for service in a civilian capacity an older man will be kept in order to maintain the military standard. From this dilemma it is hard to escape. Yet all will agree that whatever is possible must be done for the younger men who, owing to their service in the navy and army, have not had the opportunity of rounding off their clinical and scientific training by the experience which a resident hospital appointment affords. In a paragraph last week on post-graduate medical study with the army in the field we expressed the hope that the military authorities would do their utmost to foster the professional education of medical officers awaiting demobilization. But no makeshift courses of instruction under active service conditions could replace the experience to be gained in a house appointment at home.

It is clear, therefore, that apart from the demands of the hospitals for the proper treatment of the sick, and apart from the public need for well-instructed doctors, the position of the young doctor as regards his own future has to be considered. There are first the men who volunteered in the early days of the war, immediately after qualifying and without allowing themselves time to take hospital posts; there are next those who have qualified during the war under the scheme by which the War Office allowed them to return for study; and lastly, there are those who avoided military service until conscription came. The third class gave themselves every chance, presumably took hospital appointments before they were called up, and consequently need be of no further concern to anybody provided that the legitimate demands of the hospitals can be satisfied without them. The men who qualified during the war by availing themselves of the facilities secured by the Ministry of National Service seem to require only limited consideration. It must generally have been easy for them to take advantage of the system of seconding, and so to obtain at least three months' experience as residents in their own hospitals. In some cases it may be found wise to give such men early facilities for more prolonged experience in hospital, or to arrange graduate courses for them when they return to civil life.

It is the early volunteers who merit most consideration; and it is from amongst these men that the immediate supply of hospital residents should, we suggest, be found. They are entitled to this preference on grounds of patriotism, of long service with its attendant risks, and of the deadening influence of army medical routine, especially in the front line, on professional knowledge and resource. Amongst these men—those that are left of them—must be many who would already have begun to distinguish themselves in civil practice or in research. They now find themselves four years behind colleagues who were physically unfit or otherwise immune from military service, and in their absence a new generation has arisen ready to step into the resident posts which would otherwise have been theirs.

In this connexion it is of interest to turn to certain recent proposals of the Department of Repatriation and Demobilization of the Australian Imperial Force.

The intention of this scheme is educative; it is designed to afford opportunities for a number of officers of the A.A.M.C. to obtain post-graduate instruction in the United Kingdom before returning to Australia. In this way not only will these medical officers be assisted in helping themselves, but the Australian civil population will be safeguarded against an influx of doctors who have had no training in the exigencies of civil practice. Medical officers of the Australian force who desire to avail themselves of this proposal will be struck off the strength of their units for a period of at least three months, while those who only graduated shortly before enlistment will be granted the opportunity of serving for six to twelve months as house-physician or house-surgeon at a general (non-military) hospital, either in the provinces of this country or in Australia. During this period of study or service in hospital the medical officer will receive full pay and allowances, together with 5s. a day subsistence allowance and such tuition fees as are approved by the Director-General on the recommendation of the Director of Education. Further, the medical officer will retain the emoluments of any post he may hold. At the end of the period, or at any time if his conduct has been unsatisfactory, he will be returned to his unit or repatriated.

This scheme, so far as it applies to resident hospital appointments in the United Kingdom, while easing the plight of some civil hospitals, should not materially prejudice the chances of the younger British medical officers whose case we have been discussing, if, as we are informed, the number of Australian medical officers availing themselves of the scheme will not be large. But it seems opportune to call the attention of certain Government departments in this country, and of the professional committees, to this admirable and far-seeing policy of the Australian Government, and to suggest that the mother country should not be backward in following this example. Have the War Office or the Treasury, or the Ministry of Labour, considered the practicability of providing medical officers in the British army with subsidized facilities such as Australia is offering? This form of seconding would at any event keep a supply of young medical officers available in case of urgent military need; and if demobilization proved slower than was anticipated, the plan would later on enable the older men to be released within a reasonable time while saving the younger medical officers from professional stagnation.

We have endeavoured to state the arguments for and against the methodical release of junior medical officers to fill resident appointments in the civil hospitals of this country. Briefly, our view of the matter is that a limited number of the younger medical officers should be made available for hospitals experiencing serious difficulty in carrying on their work; but while the authorities of the civil hospitals cannot as yet expect to return to pre-war conditions they should be made alive to the fact that they will be serving the interests of the patients in their institutions, of the community in the future, and of young men who have deserved well of the country, by giving them preference in the selection of residents. The withdrawals from the navy and army should be confined to those medical officers who volunteered early in the war.

A timely letter upon this aspect of the matter is printed in our correspondence columns this week; the writer, "F.R.S.," is a distinguished teacher. The Government departments concerned ought, we submit, to work out some scheme—on the lines possibly

of the proposal of the Australian Government—whereby the men withdrawn may still be at hand for military service should the occasion arise. The Treasury may not willingly grant terms of subsidized service on so generous a scale as is indicated in the Australian scheme; but the Government of the United Kingdom should be ready to risk an investment willingly undertaken in a spirit of statesmanship by one of its daughter states.

SENSATION AND THE CEREBRAL CORTEX.

DR. HENRY HEAD, in an article which occupies an entire number of *Brain* (vol. xli, Part II), has given in great detail an account of an elaborate and painstaking research into one of the most difficult of neurological problems—the relations of sensation and the cerebral cortex. The subject matter is highly technical, and the article will be studied in its entirety by neurologists. It deals with such questions as the integration of afferent impulses, the forms assumed by disturbances of sensation due to cortical and sub-cortical lesions, tests which appeal to the cortex and to the optic thalamus, and principles which determine the anatomical localization of sensory function in the cortex.

Dr. Head points out that between the impact of a physical stimulus and the sensation which it evokes many physiological changes occur which normally do not enter consciousness, and which can only be discovered by some form of dissociation. He describes also how perfectly the reactions of the optic thalamus express the non-discriminative aspects of sensation when the cortical control of the thalamus is removed. The task of the central nervous system in integrating the effects of a stimulus—sorting, combining, and inhibiting them—is proved to be carried out by certain end organs, or receptors, and to be separate from consciousness; and the modification of afferent impulses on their way to centres where they can form the underlying basis of sensation is described. The cortex and the optic thalamus are the two terminal physiological centres on which the final products of integration act.

Many afferent impulses never form the basis of a sensation. They control reflex activity or they co-ordinate movements, and they do not traverse the whole length of the central nervous system. Impulses, too, which fail to excite consciousness do not necessarily cease to exert a physiological influence. They may be merely repressed, ready to show themselves as soon as the dominant influence is withdrawn.

Dr. Head describes the influence, on the nature of the response of a reflex arc, of previous occurrences in it, also on a sensation or on the recognition of spacial relationships, and the bond between this factor and the phenomena of adaptation. The effect on projected sensation of the removal of cortical influence, whereby the activity of the optic thalamus is uncontrolled, is pointed out, and it is shown also that these factors in sensation do not depend primarily on judgement or conscious association, but are due largely to physiological activities. Finally, an account is given of the methods employed in the various tests, and a clinical description is added of some of the cases on which the research was based.

The monograph is replete with observations of a high scientific value on a fascinating, if difficult, subject, and it redounds greatly to the credit of one of the master minds of British neurology.

CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION IN APRIL.

As already announced in our last two issues, the British Medical Association has decided to hold a meeting in London this spring to discuss scientific and clinical matters, more especially in relation to work done during the war. For the convenience of Dominion and American medical officers it has been arranged to hold the meeting in the second week of April. On the evening of Tuesday, April 8th, the members and visitors will be received by the President of the Association, Sir Clifford Allbutt. The work of the conference will be divided into three sections—of medicine, of surgery, and of preventive medicine and pathology. The Sections will meet on Wednesday, April 9th, Thursday, April 10th, and on the morning also of Friday, April 11th. A general committee was formed at the preliminary meeting on January 14th, and Major-General Cuthbert Wallace, C.B., C.M.G., Colonel S. Maynard Smith, C.B., and Lieut.-Colonel Gordon M. Holmes, C.M.G., have consented to act as general secretaries. A subcommittee is engaged in the selection of a suitable building for the meeting, and in making arrangements for evening receptions, and for hotels and private hospitality. The clinical and scientific work of the meeting and its sections is being organized by a programme subcommittee, which met for the first time on January 24th. There were present Colonel J. G. Adami, F.R.S., C.A.M.C., Colonel C. T. M. de Crespigny, A.A.M.C., Sir Walter M. Fletcher, F.R.S., Secretary of the Medical Research Committee; Colonel H. M. W. Gray, C.B., Colonel L. W. Harrison, D.S.O., Surgeon-Commander D. W. Hewitt, C.M.G., representing the Medical Director-General R.N.; Lieut.-Colonel Gordon Holmes, C.M.G.; Lieut.-Colonel C. J. Martin, C.M.G., F.R.S., A.A.M.C.; Lieut.-Colonel F. W. Mott, F.R.S.; Lieut.-Colonel Bernard Myers, C.M.G., N.Z.M.C.; Colonel R. D. Rudolf, C.B.E., C.A.M.C.; Professor S. G. Shattock, F.R.S.; Colonel P. G. Stock, C.B., D.D.M.S. South African Defence Force; Colonel A. M. Whaley of the United States Army Medical Service; Colonel Maynard Smith, C.B.; Dr. R. T. Leiper, London School of Tropical Medicine; Dr. G. E. Haslip, Treasurer of the Association; and Dr. Dawson Williams. On the proposal of Dr. Haslip, seconded by Colonel C. J. Martin, Colonel Adami was appointed chairman. The business before the subcommittee included the nomination of organizing secretaries and the laying down of general lines for the scientific work of the conference. It was generally held that the meeting should be, as far as possible, practical in character, and that its main feature should be the demonstration of results and the gathering of lessons for future guidance in civil practice, together with a limited number of organized discussions on the most important general topics. In a meeting of the kind contemplated it was agreed that practical demonstrations would be preferable to formal addresses, and that debate and criticism should follow ordered lines.

DANISH COURTESY.

OFFICERS of the R.A.M.C. recently with the British military mission in Denmark met a very warm welcome in that country. The Royal Family, officials, and private persons alike went out of their way to show hospitality not only to the prisoners of war returning from Germany, but also to the staff sent out from England to arrange for their repatriation. For more than four years the Danes have necessarily avoided expressing their traditional affection for "Old England," but since the armistice they have felt free to show all the warmth of their sympathy. As a consequence our soldiers returning through Denmark have enjoyed almost embarrassing demonstrations of friendship, and "Rule Britannia" is received with enthusiasm in all the restaurants and places of amusement of Copenhagen. Early in January the staff of the Fredericksberg Hospital gave a dinner in honour of the

medical members of the British mission, and the occasion was much enjoyed both by guests and hosts. During the evening Dr. Carl Jørgensen toasted the visitors in a graceful speech. He told how the youths of Denmark from their earliest days were taught to venerate the country of Shakespeare and Byron, of Dickens and Kipling, and how Danish medical men looked with affection to the home of Jenner, Lister, Moynihan, and Mackenzie. He continued: "Five years ago we admired you as the most free people of Europe, because you refrained from conscription. Later, we had to admire still more, because England submitted to the raising of that glorious army now returning victorious from the most terrible war in history." The British officers made fitting replies to this very flattering address, and their relations with Danish colleagues in the prisoners' camps and on social occasions throughout the period of repatriation duty were most cordial. Most medical men in Denmark have a fair knowledge of English, and in conversation many of them expressed the wish that more opportunities for graduate work should be offered them in England. They also mentioned a desire that English medical books and periodicals should be made more easily available for the profession in Denmark, a matter to which we have on several occasions called the attention of British publishers. We hope also that it is receiving the consideration of our medical societies, and that they will see their way to present copies of their transactions and proceedings to the principal medical libraries in Denmark and other Scandinavian countries.

THE HISTORY OF ST. BARTHOLOMEW'S HOSPITAL.

DR. NORMAN MOORE, who has long been engaged on a history of the great London medical foundation with which he has so long been connected, has completed his task, and his *History of St. Bartholomew's Hospital* will be issued next week. It is in two volumes, which, taken together, contain 1,640 pages and 47 illustrations, which are chiefly reproductions of ancient charters. The first volume treats of the period from Henry I to Richard II, and includes the life of Rahere, the founder, and of his successor, Thomas of St. Osyth, a long chapter on the period of Henry FitzAilwin, the first mayor of London, and others on the reigns of Henry III, Edward I, Edward II, Edward III, and Richard II. Isidore of Seville is treated as showing the medical knowledge in London of the twelfth and early thirteenth centuries, and John Mirfeld as illustrative of the knowledge prevailing in the reign of Richard II. The second volume contains the history of the hospital from the reign of Henry IV to that of our present king. It describes the work of John Cok, the writer of the hospital cartulary, explains the mediæval estate of the hospital and its transactions with various ancient foundations. The new order of the reign of Henry VIII and the ledgers and journals which begin at that period and their continuations to the present day are set forth. The Elizabethan physicians are mentioned and are followed by a chapter on Harvey and by another on his successors, all the subsequent physicians. The surgeons in their successive stages of incorporation are described, and a separate chapter is given to Abernethy and another to his successors, the subsequent surgeons. Further chapters are given to the apothecaries and the other members of the staff, to the matrons, sisters, and nurses, the officials, the administrators, the medical school, the buildings, and the patients. An index of 105 pages of three columns each concludes the work. The price of the book is three guineas, and it may be obtained from the Clerk, St. Bartholomew's Hospital. It is a present from Dr. Norman Moore to St. Bartholomew's Hospital, and the proceeds of the sale will be given to the hospital. The publishers are Messrs. C. Arthur Pearson, Ltd.

GLIMPSES OF INFLUENZA IN THE PAST.

The disease now so well known as influenza was familiar to physicians from remote antiquity as a catarrhal pestilential fever. Among the people in different epidemics it went by various names, most of them indicative of novelty. Thus, in this country it was known in 1558 as the "new burning ague," in 1562 as the "new disease," the "new ague," and—with a touch of irony—the "new delight" and the "gentle correction." In France it was called *grippe* from the suddenness of its onset (*agripper*, to seize), *coquette* and *coqueluche* from the capriciousness of its manifestations, while the universality of its diffusion was designated as *la générale*. For the same reason the Germans called it *Modesieber*, and from the suddenness of attack *Blitzkatarrh* (lightning cold). Interesting descriptions are given by keen-sighted non-professional witnesses. In 1562 Mary Queen of Scots fell a victim to the prevailing epidemic. Randolph, Elizabeth's ambassador, writes to Cecil from Edinburgh in November: "Maye it please your Honer immediately upon the Queen's arrivall here, she fell acquaynted with a new disease that is common in this towne, called here the newe acquayntance, which passes also through her whole Courte, neither sparing lordes, ladies, nor damoyells, not so much as either Frenche or English. It ys a plague in their heades that have it and a soreness in their stomackes, with a great coughe, that remayneth with some longer, with others shorter tyme, as yt findeth after bodies for the nature of the disease. The quene kept her bed six days. There was no appearance of danger, nor manie that die of the disease, excepte some olde folkes. My lord of Murray is now presently in it, the lord of Lidingetone hathe it, and I am ashamed to say that I have byne free of it, seeing it seketh acquayntance at all man's handes." Nearly three centuries later we have an account by Thomas Carlyle in a letter written in January, 1837, to his young sister, Mrs. Hanning, then living at Manchester: "All people have got a thing they call Influenza, a dirty, feverish kind of cold; very miserable and so general as was hardly ever seen. Printing offices, Manufactories, Tailor shops and such like are struck silent, every second man lying *sniffling* in his respective place of abode. The same seems to be the rule in the North too. I suppose the miserable temperate climate may be the cause. Worse weather never fell from the Lift, to my judgment, than we have here. Reek, mist, cold, wet; the day before yesterday there was one of our completest London fogs—a thing of which I suppose you even at Manchester can form no kind of notion." Among the innumerable theories as to the cause of the disease that of the Scottish writer Patrick Walker deserves mention. In his life of Alexander Peden, the famous Covenanting leader, speaking of the epidemic of 1712 he attributes the "new burning agues" to "the effects and evidences of God's displeasure appearing more and more against us since the incorporating unious, mingling ourselves with the people of these abominations, making ourselves liable to the judgments, of which we are deeply shaming." The "people of these abominations" were the English, the incorporating union was the Union of the Crowns in 1707.

DRIED AND LIQUID EGGS.

The report by Dr. A. W. J. Macfadden, C.B., chief inspector of foods, Local Government Board, on the work of inspectors of foods in the year 1917-18, has been issued as a separate pamphlet.¹ It deals at some length with the difficulties created by the importation of liquid eggs from China. Before the war the bulk of this material went to Germany, and the relatively small quantities imported into this country were used principally for industrial

purposes, such as leather dressing, though to a limited extent also for confectionery. After the outbreak of war consignments arrived at ports in this country as cargoes in prize ships, and later on large quantities were imported in the ordinary course of trade. Usually the egg yolk and egg albumen were sent separately, and the albumen might come in a fluid state with preservative added, or in a crystalline dried form. The analyst to the City of London found samples of yolk to contain boric acid varying in amounts from 1.35 to 2.08 per cent., sometimes, however, common salt up to 10 per cent. was used with a smaller amount of boric acid. When liquid egg is used in the manufacture of cakes, biscuits, etc., the amount of boric acid in the finished food as eaten is reduced to about five grains a pound. More recently, however, liquid egg appeared on the market in large quantities packed for domestic use in small tins and jars, reputed to contain the equivalent of from ten to twelve or more eggs. The statement, it is said, must have been based on the weights of very small eggs; some of the packages said to contain "one dozen new laid eggs" weighed 12 oz., but twelve market eggs of good average size would weigh about twice this amount. The product in this form became available to the general public for use in milk puddings, pancakes, and so on; when used for these purposes the amount of boric acid consumed by the individual would be considerable. Although some of the packers put a notice on the smaller receptacles, sold retail, to the effect that they should not be used for omelettes or scrambled eggs, it is not known whether this injunction is obeyed in hotels, restaurants, and similar places. Investigations made by the Government chemist revealed the presence of boric acid in certain samples varying in amount from 49 to 113.4 grains to the pound. Compared with the composition of average genuine hen's eggs the preparations contained too much water, some of it probably due to the addition of boric acid in watery solution. It was also observed that whereas in genuine eggs the weight of white is approximately twice the weight of yolk, in most of the samples there was more yolk than white; for this reason, in spite of the added water, the calorific value of the contents of the jars and tins fell, with one exception, within the range of that of genuine eggs. Some public health authorities have required that the material shall be sold only to firms engaged in the bakery, wholesale confectionery and allied trades, the proportion of boric acid ultimately intended for human consumption to be negligible in amount. It has further been provided by these authorities that the egg material shall not be sold to the general public by retail over the counter, and that in order to ensure this, the receptacles should be made to contain not less than 7 lb. Dr. Macfadden thinks that the importation of egg products from abroad will necessarily increase in the future, and advises that it would be well, both from the point of view of the health of the consumer and of economy in shipping space, to arrange for the product to be shipped as dried eggs instead of in a liquid form. Dried egg imports have proved very successful, and if the eggs are prepared and packed properly in this form they are a wholesome and useful foodstuff.

FILTER-PASSING VIRUS.

The paper, printed at p. 127, by Sir John Rose Bradford, Captain Bashford, and Captain Wilson, on the presence of filter-passing virus in certain diseases, including a form of acute infectious polyneuritis, trench fever, influenza, and nephritis, records observations of so much general interest that it will be read by many readers unfamiliar with laboratory technicalities who may be perplexed by the statement with regard to the filters used. Being unable to supply the information from our own resources we applied to Lieut.-Colonel C. J. Martin, F.R.S., who, we are glad to learn, has resumed his duties as Director of the Lister Institute. The Berkefeld filters are

¹ H.M. Stationery Office. 1918. To be purchased through any bookseller. Price 3d. net.

made of compressed siliceous earth, not baked, and are more pervious than porcelain filters. They used to be made in three grades: W (Wenig), least pervious; N (normal), of average perviousness; and V (Voll), most pervious. The Massen filter, like the Chamberland, is of baked biscuit porcelain. The former is of larger grain, and therefore more pervious. The filter used by Nicollo and Lebailly was Chamberland L2, which is believed to be of the same material as the ordinary Chamberland filter, but of a different shape and more convenient for laboratory work. As a standard of comparison, it may be noted that the influenza bacillus is 1.5μ long and 0.3μ thick; the virus of poliomyelitis, which passes through Berkefeld N and V, is said to be 0.2μ in diameter.

CHIEF DEMOBILIZATION MINISTER.

SIR AUCKLAND GEDDES has undertaken, in succession to his brother Sir Eric Geddes, the duties of chief demobilization minister in addition to his responsibilities as Minister of Reconstruction. It will be recalled that Sir Eric Geddes, at the request of the Prime Minister, acted for the Government in this capacity to co-ordinate the work of the various departments. Sir Eric is at the present time a Cabinet Minister without portfolio, but he is shortly to become Minister of Ways and Communications, and with this task in view has been anxious to be relieved of demobilization cares. His brother, Sir Auckland, is intimately acquainted with the problems from his experience as Minister of National Service. This department has passed in the armistice from the active to the passive state, but its machinery and records are, of course, available; and, in the discharge of the additional responsibilities placed upon him, Sir Auckland will, it is understood, have the aid of a number of old colleagues of the National Service Ministry.

THE MEDICAL OFFICERSHIP OF THE LOCAL GOVERNMENT BOARD.

It is announced that Sir Arthur Newsholme, K.C.B., will shortly retire from the position of medical officer to the Local Government Board. It is probable that he will prove to be the last occupant of that office, since it appears to be the intention of the Government to press the Ministry of Health Bill early in the new session. When Sir John Simon, the first occupant of that post, vacated office in 1876, in the circumstances mentioned last week, he was succeeded by Dr. Edward Seaton, who, however, resigned in 1879 (he died in the following year) and was succeeded by Sir George Buchanan, who held the appointment with great distinction to himself and great advantage to public health until 1892. He was succeeded by Sir Richard Thorne Thorne, who retained the office until his death at the end of 1899. The next occupant was Sir William Henry Power, who held the office from 1899 to 1908; he was succeeded by Sir Arthur Newsholme.

MEDICAL GRADUATE COURSE IN LONDON.

THE Fellowship of Medicine has arranged with the medical schools in London for "an emergency post-graduate" course of three months for qualified medical men belonging to the medical services of the Royal Navy, Army, Air Force, the overseas contingents, the United States and Allies. Officers joining the course will be admitted to the general practice of the hospitals, including the clinical work of the wards and out-patient departments, clinical lectures and demonstrations, *post-mortem* demonstrations and laboratory work. Tickets for the whole course, or for one or two months, are issued at the rate of £3 10s. for each month. They can be obtained from the Secretary of the Fellowship, 1, Wimpole Street, London, W.1.

THE PREVENTIVE TREATMENT OF VENEREAL DISEASES.

A MEETING convened by the Faculty of Insurance (which represents the large approved societies) was held at Central Buildings, Westminster, on January 28th, to discuss certain aspects of venereal diseases as an urgent health problem. Sir KINGSLEY WOOD, M.P., chairman of the Faculty, presided.

Mr. E. B. TURNER, after describing the two forms of venereal diseases and the extent to which they prevailed, said that the only absolutely certain preventive was not to run the risk of infection, then the incidental cases which did not depend upon an act of immorality would soon disappear also. As to prophylactic measures, he differed entirely from the writers (Sir William Osler and his colleagues) of the recent letter in the *Times*, though he recognized that, equally with himself and those who thought with him, they were acting in perfect good faith and working towards the same end. It was suggested in that letter that it should be made known, primarily to men of the forces but ultimately, of course, to all young persons, that there were methods by which, before running the risk of infection, they could safeguard themselves against its pathological consequences. Such a procedure, he believed, so far from reducing the number of cases in the population, would actually increase them. The issue of these preventive "packets," in the first place, would induce a feeling of false security. Moreover, such methods of chemical prophylaxis, to be at all effective, must be carried out with all the care with which surgeons performed their surgical toilet for an aseptic operation. He had himself seen five educated young men of the officer class, three of whom were suffering from syphilis and two from gonorrhoea, and four of the five assured him that they would never have gone astray had they not been assured beforehand of the efficacy of such an expedient. If the conditions under which the prophylactic were administered were rigorous, like a laboratory experiment, he granted that in few cases would there be infection: but under ordinary conditions, with half-drunk and excited men, in places which made proper care impossible, the value of the expedient was quite different. He believed also that fear of infection was a powerful deterrent, and that, to take a parallel case, the standard of morality among young women had greatly deteriorated during the last forty years, owing to Malthusian propaganda and the sale and display of anti-conception appliances. Previously fear of the consequences had been a most potent factor in keeping thousands of young women chaste. He read a memorandum by Colonel W. F. SNOW, of the medical service of the American army, who stated that the supply of the prophylactic packet began in the United States army about 1912, combined with a propaganda of warning against risk, and a system of early detection and treatment of infected men. It was found that for various reasons the men could not be relied upon to use the packets promptly and thoroughly, while the practical administrative advantages of early treatment became more and more emphasized, with the result that the official status of the packet was abandoned in the enlarged programme for combating venereal diseases at the commencement of the war. Mr. Turner dwelt upon the advantages of early treatment, and pleaded for more education of the public, combined with a wider provision of venereal disease clinics.

Mr. P. ROCKLIFE, Chairman of the London Insurance Committee, said that as insurance bodies had been advised to forego their misconduct rule which forbade payment of benefit in cases of venereal diseases, certain influential members of the Joint Committee of Approved Societies had determined to take an active part in spreading the knowledge of simple sanitary measures for the prevention of infection. The matter concerned not only the men who actually ran the risk, but their present or future wives (many of them insured) and their children. The present policy of the National Council for Combating Venereal Diseases appeared to be to offer treatment only to those who might have become infected. He thought it desirable to establish a society for the prevention (not merely the cure) of venereal diseases. Even though, by spreading the knowledge of the facts or furnishing assistance in obtaining means of protection, the Venereal Diseases Act, 1917,

was infringed, the risk of prosecution would be gladly undertaken by leading men interested in the preservation of the health of members of the trade unions and friendly societies.

Sir MALCOLM MORRIS deplored the controversy which had arisen. He could not agree with the signatories to the letter in the *Times*, nor could he compromise, because it was a matter of conscience, and he did not doubt that the signatories to the letter were equally positive and unyielding. The obvious recourse was to a third party, and he suggested the President of the Local Government Board as adjudicator, assisted by assessors on both sides.

Sir BERTRAND DAWSON, while agreeing with the suggestion of a tribunal, thought it should be purely medical, with the president of one of the Royal Colleges at its head. He believed that the application of preventive treatment—that is, whatever was necessary to stop the disease before or after risk of infection—was desirable, though he agreed that no preventive method was wholly efficient. It was merely a question of discovering what method would allow the smallest incidence of disease after exposure to danger. As to the ethical point of view, he had yet to learn that to make people healthy resulted in a slackening of the moral fibre. If it were the fact that preventive treatment was advantageous when applied before infection, any man was taking a desperate risk who said that such measures should not be made available. Sir Bertrand Dawson also insisted that the early treatment which the National Council advocated merely camouflaged prevention. What was the difference between 10.45 o'clock and 11.15—between applying preventive treatment before infection and applying it immediately after, when the disease had not yet developed?

Dr. OTTO MAY agreed with Sir Bertrand Dawson. Major MCGIBBON, of the New Zealand forces, said that prophylactic expedients had been used (with the greatest reluctance on moral grounds) for the troops from that dominion; he hoped that on demobilization an effort would be made by energetic State action to clear up the whole position. Dr. LEONARD HILL thought that before talking of individual morality in this matter it was necessary to deal with the morality of the State, which permitted millions of its citizens to dwell under indecent housing conditions. Lieut.-Colonel Sir J. W. BARRETT (Australian A.M.C.), while supporting the scheme for local clinics, thought that geographical reasons would make it necessary to use prophylactic measures, which he had found effective among the men in Egypt, when combined with instruction by a competent and sympathetic medical officer. The Rev. J. SCOTT LIDDETT and Mrs. GORTO defended the policy of the National Council, and the meeting closed with a vote of thanks to Mr. Turner.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

CAPTAIN J. WILSON, R.A.M.C.

Captain John Wilson, R.A.M.C., died of pneumonia in Palestine on December 30th, aged 41. He was born in 1877, educated at Hillhead High School, Glasgow, and at Glasgow University, and took the Scottish triple qualification in 1903. Before the war he was in practice at Burnhope, County Durham. He took a temporary commission as lieutenant in the R.A.M.C. in May, 1917, and was promoted to captain after a year's service. He had served in Egypt and Palestine, in the 78th General Hospital. His brother, Captain Alex S. Wilson, has also been serving with a temporary commission in the R.A.M.C.

Repatriated.

Major W. J. Hirst, R.A.M.C.(T.F.).

Captain F. H. McCaughey, R.A.M.C. (temporary).

Captain A. T. I. Macdonald, R.A.M.C. (temporary).

Captain S. S. Meighan, R.A.M.C.(T.F.).

Captain F. J. Natrass, R.A.M.C.(T.F.).

Captain D. M. Spring, R.A.M.C.(T.F.).

CORRECTION: CAPTAIN A. J. MILNE, S.A.M.C.

It was assumed in our issue of January 11th, p. 54, that Captain A. J. Milne, S.A.M.C., whose death was recorded in the official casualty list published on December 30th, was Captain Arthur John Milne, S.A.M.C. We understand that, according to the latest information received by his family, Captain Arthur John Milne is happily still alive.

DEATHS AMONG SONS OF MEDICAL MEN.

Clarke-Morris, John, Lieutenant West Riding Regiment (the Duke of Wellington's, late 33rd Foot), youngest son of the late Dr. H. Clarke-Morris, accidentally killed flying in France on January 13th, aged 19. He had recently joined the Royal Air Force.

Semple, Robert Edward Watson, M.C., Captain Royal Field Artillery, second and only surviving son of Lieut.-Colonel Sir David Semple, R.A.M.C.(ret.), of Royston, Hertfordshire, whose death was briefly announced in the *BRITISH MEDICAL JOURNAL* of November 23rd, 1918, died at Rouen, of wounds, on November 5th, aged 22. He was educated at Campbell College, Belfast, and at the Royal Military Academy, joining the Artillery as second lieutenant in 1915, soon after which he went to the front, and had been there over three years, at first attached to the Guards Artillery, and later to a Guards Trench Mortar Battery, which he had commanded for nearly a year past. He had taken part in the battles of the Somme, Messines, and Cambrai, also of Ypres and Arras. In December, 1917, he received the Military Cross, and was afterwards again mentioned in dispatches. He became lieutenant on July 1st, 1917, and captain on February 8th, 1918. His elder brother, Second Lieutenant W. D. Semple, King's Royal Rifle Corps, was killed in France towards the end of July, 1916.

NOTES.

THE FRENCH ARMY DURING THE WAR.

The following official statistics of the number of men the French had under arms on the dates mentioned are of interest in connexion with the casualty lists recently published:

	Officers.	Other Ranks.	Total.
Aug. 15, 1914	92,838	3,781,000	3,873,838
Feb. 1, 1915	97,753	4,900,000	4,997,753
Jan. 1, 1916	109,614	5,096,000	5,205,614
Jan. 1, 1917	115,074	5,026,000	5,141,074
Jan. 1, 1918	128,372	5,054,000	5,192,372

The numbers of January 1st, 1918, were distributed as follows: Infantry, 2,106,575; Artillery, 899,845; Air Force, 59,275; Cavalry, 166,422; Engineers, 185,110.

General Peyton C. March, chief of the staff of the American army in France, has given figures of the forces in France on the day of the armistice which are difficult to reconcile with these. His statement was founded on the ration strength, and included every man who had to be fed, combatant and non-combatant, and supply:

French	2,559,000
United States	1,950,000
British (including the Portuguese serving with them)	1,718,000
Belgians and Italians	200,000

When the armistice was signed there were about 3,500,000 Imperial British officers and men on the pay and ration strength of the British army. The Royal Air Force had a strength of about 295,000 officers and men.

THE PILKINGTON SPECIAL (ORTHOPAEDIC) HOSPITAL.

A well illustrated description of the Pilkington Special Hospital for Disabled Soldiers and Sailors at St. Helens, Lancashire, has been published in *Engineering* (January 3rd, 1919). The facts and drawings will be of considerable value to any one called upon to advise on the planning of such an institution. The accommodation is sufficient for the treatment of the following numbers of men a day: Hydrotherapy, 800; thermotherapy, 150; mechanotherapy, 600; electro and massage, 600; remedial gymnastics, 400; curative workshops, 100. There is an operating room, a very necessary part of such a special hospital; also a radio room containing a complete installation in which a powerful transformer type apparatus is used. The account is written by Mr. James R. Kerr, Ch.M., surgeon in charge of the hospital.

THE GREEK ARMY IN THE BALKAN OFFENSIVE.

It was noted last week that at the time the armistice with Turkey was completed Greek troops under the command of General Milne were ready to take part in the advance on Constantinople. General Milne, in his dispatch, expressed his admiration for the gallantry and determination of the Hellenic army and his gratitude to the corps and divisional commanders for their ready co-operation at all times. A pamphlet entitled *The Greek Army and the Recent Balkan Offensive*, published in

London by Messrs. George Allen and Unwin (1s. 6d. net.), gives a brief account of the doings of the Greek army during the Balkan offensive, which culminated in the capitulation of Bulgaria. It consists of a series of official communiqués, speeches, telegrams, and press comments, including summaries of the campaign. It is well illustrated by numerous photographs, and has a map of the front.

CORRECTION.

In mentioning the conferment of the honour of K.C.M.G. on Major-General W. W. Pike, A.M.S., we fell into error in stating that he had been D.M.S. East Africa. After holding the appointment of D.M.S. First Army, France, he went to East Africa on a special commission for the War Office for ten months in 1917-18.

England and Wales.

INSTITUTE OF MASSAGE AND REMEDIAL GYMNASTICS.

In the autumn of 1916 a society was formed in Manchester under the name of the Institute of Massage and Remedial Gymnastics, with the intention of improving the training and status of persons engaged in medical gymnastics, massage, electro-therapeutics, and kindred subjects. Shortly afterwards it issued a syllabus of training, outlining a course to last thirty weeks. A year ago it was announced that negotiations had been opened with the Incorporated Society of Trained Masseuses, and that an agreement had been come to between the two bodies. At the recent annual meeting of the Institute in Manchester Sir William Milligan stated that a charter had been drafted in consultation with the Incorporated Society, expressing the settled views of the two bodies. It would shortly be submitted to the Privy Council, and if approved would become the charter of a new society. The amalgamation would, it was anticipated, yield a strong body, financially and otherwise sound, with a council elected by postal ballot of all the members, and therefore representative of all those engaged in massage throughout the country. The scheme provides for the admission of male certificate holders to membership and representation.

MEDICAL DEMOBILIZATION AND INSURANCE PRACTICE IN LONDON.

At the meeting of the London Insurance Committee, on January 23rd, Sir Kingsley Wood stated that the number of doctors on the London panel list on January 1st was 1,249, and that since the armistice 47 London panel doctors had been demobilized and 178 were still serving. He pleaded for a rigorous examination of the whole medical service in London. The present arrangement by which a doctor could have an unlimited number of persons on his list was unsatisfactory. The Committee should take power in future contracts to limit the lists. Dr. Richmond stated that the number of doctors on the panel was not sufficient for the one and a half million insured persons in London; and, in reply to an interrupter who said that for the proper distribution of doctor power over the area a system of State service was needed, said that before the exhaustive review contemplated had been completed such a service might be upon them. Mrs. Handel Booth said that in her experience doctors who had the largest panel lists gave the best service, because, as a rule, they had fewer private patients. Mr. David Davis, chairman of the Medical Service Subcommittee, said that, in spite of the vastness of the insured population, the number of complaints against doctors which were investigated by his subcommittee was less than 100 in a year. It was reported that the Commissioners had suggested that the time had arrived to consider the question of re-establishing, at the earliest date at which military exigencies permitted, an adequate service throughout each area as measured by a normal rather than a war standard of efficiency. In response to this suggestion, the Insurance Committee set up a special section to confer at once with representatives of the Panel Committee on the question of demobilization and to review the medical situation district by district. All doctors now carrying on insurance practice in London are being communicated with.

PRESENTATION TO DR. STACEY WILSON.

Dr. T. Stacey Wilson, who has retired from the office of honorary physician to the Birmingham General Hospital after twenty-nine years' service, was presented on January

22nd, in the board room of the hospital, with an illuminated and bound address, signed on behalf of the subscribers by the president, the chairmen of committees, and the senior physician and senior surgeon of the hospital. A portrait of Dr. Stacey Wilson was at the same time presented to the hospital. He became assistant physician in 1889, and full physician three years later; he served subsequently as chairman of the medical committee. He has given special attention to diseases of the circulation, and is the author of a work on the early diagnosis of heart failure. At the end of his term of office in 1917, he voluntarily continued work in order to help the hospital through the time of stress caused by the war, and was visiting physician to the 1st Birmingham Hospital at Rubery.

DIETARY TABLES.

The Local Government Board for England and Wales has issued a circular letter (January 24th) informing Poor Law authorities that they may now revert to the use of the dietary tables in force before the introduction of rationing. Pork, and all kinds of meat and meat articles other than butcher's meat, including tinned and preserved meat, are now outside the ration. Authorities will be required to keep within the Food Ministry's scales of rationed articles (butcher's meat, sugar, fats, and jam), and the present allowance of milk and cheese should not be increased without the concurrence of the local Food Control Committee. Further, it is notified that supplies of fish, poultry, lard, syrup, and eggs are limited at the present time. If the limitations indicated prevent the full restoration of the former dietary tables, any deficiency may be remedied either by a temporary revision of the tables or by the use of alternative articles as authorized on February 28th, 1917. In view of the changing food conditions, the Board has waived until September 30th the direction permitting a new or revised dietary table to come into operation only on one of the usual quarter days. The instruction of December 12th, 1917, permitting rations of potatoes and vegetables to be issued "according to appetite" in the same way as bread, is maintained.

CENTRAL MIDWIVES BOARD.

At a penal session of the Central Midwives Board, on January 23rd, Sir Francis Champneys in the chair, three fresh cases were heard. Two of the women were struck off the roll. Neglect in cases of ophthalmia neonatorum and general breaches of the rules were the chief charges. The final report concerning another midwife was satisfactory, and no action will be taken.

At the ordinary monthly meeting which followed, the following amended form of Draft Rule E 12 A was adopted:

A midwife must forthwith notify the local supervising authority of each case in which it is proposed to substitute artificial feeding for breast feeding.

Arrangements were made for the appointment of an assistant secretary to the board. It was resolved to make a representation to the Privy Council with regard to the expediency of modifying the constitution of the board, in accordance with a memorandum approved by it, and to forward to the same body copies of the branch rules framed by the board, including the rules deciding the conditions under which midwives may be suspended from practice in penal cases. The names of seventeen women were removed from the roll on their own application.

Scotland.

SCOTTISH POOR LAW MEDICAL OFFICERS' ASSOCIATION.

The annual meeting of the Scottish Poor Law Medical Officers' Association was held in Glasgow on January 24th. It was reported that a circular had been sent to each parish council asking for an increase of 25 per cent. in salaries. Most of the replies were quite sympathetic, and only a few parish councils resented what they considered to be interference. The number of medical officers who have received an increase has not been ascertained, but it is known that in about 55 cases increases of from 25 to 50 per cent. were granted. It had not been necessary to issue advertisements warning medical men not to take appointments; the number of vacancies advertised was small, and the conditions were in all respects satisfactory.

THE CONTROL OF TUBERCULOSIS.

The Royal Victoria Hospital Tuberculosis Trust of Edinburgh helps to keep households together and a roof over their heads by giving subsidies while the breadwinner is under treatment in sanatorium, hospital, or elsewhere. Speaking at the annual meeting last week, Sir Robert Philip referred to the educational work carried on with the co-operation of other bodies, and to the efforts made to lessen the hardships of patients and their households and to maintain them in their proper place in the social scale. In an address to the Edinburgh School of Social Study and Training on the same day Sir Robert Philip dealt with fallacies as to tuberculosis, and instanced as the most obvious and common, since the introduction of the Insurance Act, the belief that it was possible to cure tuberculosis within a definite period. Tuberculosis could not be cured to order; and, while always essentially the same, it was infinitely various in type and degree, so that each case required special consideration. Referring to housing reform, he said that a larger house was not necessarily a better home. For the working man with a growing family there must be provided a home with its door opening directly to the outer air, on balcony or otherwise, with easy access to playground or garden. In the course of a recent visit to Glasgow Sir Edwin Cornwall, Chairman of the National Health Insurance Joint Committee, paid a visit to the Hairmyres colony for the treatment and industrial training of persons suffering from tuberculosis. It is now practically completed, and will provide accommodation for over 250 patients. The training will ultimately embrace all branches of arable farming, as well as stock farming and afforestation.

Correspondence.

THE MORTALITY OF CASES OF FRACTURED FEMUR.

SIR,—It is with diffidence that I venture to criticize Major-General Sir Anthony Bowlby's statements on this subject, but I do so because, if they are unchallenged, those who have not given special attention to the matter will receive a wrong impression of the appalling seriousness of this injury, especially in the early years of the war. It is a pity to diminish appreciation of the excellent progress in the handling of such cases which took place. Speaking generally, the enormous improvement in treatment, and consequently in results, is one of the brightest records of the medical service.

Mortality in the Forward Areas.—It may be assumed that Sir Anthony's figures were derived from the admission and discharge books of the units concerned. Without casting reflections on any one, it can be said that the diagnoses entered in these books in 1915 were unreliable, especially during battle periods. For example, the admission and discharge books of three busy casualty clearing stations, which received cases from the battlefields mentioned by Sir Anthony, record only 141 cases of "G.S.W. femur," 1 "fracture femur," 1 "fracture buttock," and 1 "fracture femur, old," during the first six months of 1915. Deaths amongst these numbered 23, which gives a mortality of 16 per cent., exactly what Sir Anthony says. The diagnoses entered in these books were almost always copied direct from the field "tallies," which in those days were often wellnigh illegible.

In cases of multiple injuries it frequently happened that fracture of the femur was not mentioned. Even as late as spring, 1917, this unreliability was shown by the fact that at several casualty clearing stations it was noted that considerably more cases of fractured femur passed through the operating theatre than were recorded as having been admitted. It often happened that the field diagnosis remained unaltered, and it even occurred in those early days that the names of patients put on the ambulance trains at congested and overworked casualty clearing stations were not entered in the books at all.

It is acknowledged that the proportion of fractured femurs amongst wounded men admitted to casualty clearing stations is approximately 1 in 50 to 60. On this reckoning it can be shown that, even if Sir Anthony's figures cover as much as the first six months of 1915, they are over 500 short.

Perhaps Sir Anthony's figures refer to cases in which fracture of the femur was the only injury, whereas those given in my book on *The Early Treatment of War Wounds* refer to all cases of this fracture. The estimation of mortality of "nearly 50 per cent. at one time of the war" was made from my own observation after I took up the work of a consultant surgeon at the front. It must be remembered that in the very early days cases were evacuated from the casualty clearing stations often before serious symptoms had time to develop. The officer in command of a New Zealand field ambulance objected to my estimate as being too low. He stated that, from his own investigation at casualty clearing stations regarding cases which had passed through his ambulance during the fighting on the Somme in 1916, the mortality was nearer 70 per cent. than 50 per cent.

I doubt also whether any of the surgeons who worked continuously in the casualty clearing stations will agree with Sir Anthony's low figure. The estimates of those with whom I have talked coincide with mine. Why was it so freely said by so many of them in the beginning of 1917 that if every case of fractured femur were submitted to primary amputation the mortality would be greatly reduced? Why was there such universal comment on the excellent condition in which fractured femurs arrived in casualty clearing stations of the Third Army during the fighting in April, 1917, and such pride in what was looked upon as a very low mortality of 15.6 per cent., although amputations were made in only 17 per cent. of 1,009 cases? Yet this mortality was only 0.4 per cent. better than that indicated by Sir Anthony. No return was received of cases which died during that time in the dressing stations of field ambulances.

I do not think that the mortality at casualty clearing stations has ever been below 10 per cent. during battle periods, except possibly in such units as were unusually well supplied with surgical teams in proportion to the amount of work to be done. Under the conditions of a rapid advance or retreat the death-rate mounts enormously.

Mortality at Base Hospitals in France.—In these hospitals, as at casualty clearing stations, cases of fractured femur were as a class one of the despairs of the surgeon in the early days. Even in 1916, 20 per cent. mortality was probably a low estimate, but in a paper published in July, 1917, by Captain (now Lieut.-Colonel) C. Max Page and Captain Le Mesurier, who had bestowed special care on their cases, the mortality was 10 in 125 cases, or 8 per cent. In 1918, in one of the special femur hospitals, the death-rate was as low as 3 per cent.

Mortality in Home Hospitals.—At as late a period as July, 1916, to February, 1917, out of 329 cases quoted by Max Page after an investigation conducted by him, the mortality was 13.6 per cent. It was certainly not less in 1915. At one of the best special femur hospitals, established in August, 1918, in England, there have been only three deaths in 271 cases, one of them being due to pneumonia, one to secondary haemorrhage, and one to sepsis. The first and second occurred within forty-eight hours of admission. Only one case was submitted to amputation.

These facts, in my judgement, fully establish the opinion expressed in the first paragraph of this letter.—I am, etc.,

London, W., Jan. 27th.

H. M. W. GRAY.

HOSPITAL EXPERIENCE FOR JUNIOR R.A.M.C. OFFICERS.

SIR,—There are many young men who joined the R.A.M.C. immediately after qualification and have since been put to such duties that they have never had a chance of acquiring the clinical experience which would fit them for the practice of medicine when demobilized.

I have in mind a young officer who did distinguished physiological research at his university before qualification. The only experience he seems to have acquired is in signing forms and in the diagnosis of pellagra at a prisoners' camp. Commanding officers, it would seem, do not welcome an application from such junior officers for appointment to home hospital where experience can be gained. Cannot the Army Medical Advisory Board move in this matter, and, using the card index of the medical officers in the R.A.M.C., arrange that those without

experience should go to general hospitals for training before demobilization?

Further, cannot the teaching hospitals and general and special hospitals in this country prepare some scheme by which these men can acquire the experience they would have acquired in peace time by holding house appointments?—I am, etc.,

January 26th.

F.R.S.

SIR,—I was much interested to read, in the *BRITISH MEDICAL JOURNAL* of January 25th, the views of Major G. F. P. Gibbons, R.A.M.C., on the priority of release of medical officers from the army. He voices the claims of the younger men who at the outbreak of war were students.

I know of many such men, like myself, who, having served in France before qualification, returned to England and "cramped" the final year's work into six months in order to obtain a commission in the R.A.M.C. at the earliest possible moment.

The majority of such officers have served practically all the time as M.O.'s to infantry and artillery units, or in field ambulances, where the opportunities for clinical study and experience are almost *nil*. Consequently, we feel that we must begin our studies afresh, and work for our university degree as soon as possible before we are sufficiently competent to embark upon any form of medical practice.

Surely, therefore, we have some claim to come under Group 43 (students), whose release from the army has already been ordered.—I am, etc.,

J. VINCENT BATES, M.C.,

Colchester, Jan. 26th.

Temp. Captain (acting Major) R.A.M.C.

MEDICAL DEMOBILIZATION.

SIR,—In your issue of January 25th there are letters from correspondents who criticize details of the priority scheme of the Central Medical War Committee. As one of those responsible for the scheme I may be permitted to reply to the points raised.

The criticisms fall into two groups: (1) That the scheme is incomplete—for example, men of 60 years of age are left out. (2) That it is unjust—for example, the plaint of the "whole-timer" and of the man under 30 years of age. It would seem from these criticisms that your correspondents have not studied the explanation of the scheme, but confined their attention to the bare table.

The scheme is based on the recognition of certain facts. That: (1) A few characters mark all the men. (2) More characters mark some of the men. (3) Many characters mark a few men.

1. Two characters mark all the men: age and a period of service. There is no other universal character. Therefore age and service must give the primary classification.

2. Civil status and nature of work are secondary characters; they are of many kinds, and mark men unequally. These are brought into effect as modifications of the primary place of a man, by plus or minus points which advance or retard his position in the scale.

3. There are a host of exceptional characters that each mark relatively few men. To put these characters into the scale would make the scale so long as to render it unworkable. Therefore the exceptional must be dealt with exceptionally by the direct award of the Committee.

To the criticism that the scheme is incomplete, I reply that there is no character that can fail to count. It is said that men of 60 are omitted. This is not so. These men are exceptions, and will be dealt with accordingly. To the criticism that the value attached to some of the secondary characters is unjust, I reply that these were arrived at after the most exhaustive consideration by men of experience and judgement. The values arrived at are the resultant of many forces all of which have shaped that resultant.

In conclusion, I would like to give two warnings:

1. The more men there are content with their position in the scale as arrived at by the primary and secondary characters, and the fewer who make exceptional claims, the speedier will be the work of the Committee. A number of subcommittees have been appointed, and will sit five days a week to adjudicate on the exceptional claims. Even so, if thousands claim exceptional treatment we shall be snowed under, and the machine will go slow.

2. The Committee is not the demobilizing authority. Its work is to place the men in order of priority, and to apply

for them in that order. The authorities will determine when and what number of men can be demobilized.—I am, etc.,

London, W., Jan. 27th.

N. BISHOP HARMAN.

SIR,—May I protest against the recommendation of the Central Medical War Committee, that medical practitioners who have qualified during the war, after having been sent back from combatant service to qualify, are to be demobilized last of all?

I joined up in 1914, and after ten months in the infantry was sent home from France to qualify. I have had three and a half years in the army—three years on active service, and the last two and a half years without leave. After all this service I am told that I am to be demobilized last.

Having joined the R.A.M.C. as a temporary officer before conscription came in, I think it is only fair to be demobilized by date of commission with other temporary R.A.M.C. officers.

Surely I shall be able to obtain a resident post at a civilian hospital if demobilized.—I am, etc.,

January 7th.

NON-MILITARIST.

GONORRHOEA AND DEMOBILIZATION.

SIR,—I think the suggestion made by Mr. Macalpine on the above subject in the *BRITISH MEDICAL JOURNAL* of January 18th, p. 87, quite a good one if there are enough medical officers to see it through properly. Any threat of compulsory treatment is bad, as many soldiers for various and obvious reasons wish to hide the fact that they are suffering from a urethritis, and are familiar with the dodge of passing a little urine and disposing of it just before seeing the doctor, if possible. This act removes all the threads from both the anterior and posterior urethra in a large number of cases, although a large proportion of those suffering from acute or subacute gonorrhoea would show the presence of the infection by the haziness of the urine. I do not believe that more than one in twenty of those suffering from threads in the urine harbour the gonococcus. There is a large class that secrete these threads from a damaged, usually contracted, urethra for many years, or for life, after recovery from the gonococcus. They marry and do not infect their wives. Even in this class of case nothing but benefit could result from suggesting the advisability of seeking special advice, a little dilatation being urgently needed to restore the mucous membrane to a healthy condition.

In cases in which the threads are not due to venereal disease I fail to see any harm, as Mr. Browdy does (see *BRITISH MEDICAL JOURNAL* of January 25th, p. 115), in directing these to a venereal clinic or specialist. Threads in such cases, if not due to some gross affection, such as tuberculosis, are caused usually by severe phosphaturia, onanism, or lithiasis. Such cases should certainly benefit by good advice, although it be given in a venereal clinic.

A good many anxious sufferers from threads keep up the condition by persistently injecting long after the necessity for such treatment has passed. In this way many hypochondriacs are made, and good advice is badly needed to break them of the habit.

A somewhat serious objection to the suggestion is that a good many men suffering from fairly advanced stricture of the urethra show no threads, and these, being passed sound, may be lulled into a sense of false security, and may disregard later on the warning an attenuated stream of urine should give.—I am, etc.,

London, W., Jan. 27th.

W. WYNDHAM POWELL, F.R.C.S.

MOTHERS' PENSIONS.

SIR,—Some days ago you published a sympathetic review of the Report on Mothers' Pensions recently issued by the Local Government Board. May we, through your columns, say how cordially we welcome this evidence of departmental interest in a scheme which has done so much in most of the United States of America to promote the happiness and wellbeing of the necessitous widows of civilians and their children?

For more than a year the State Children's Association has been disseminating information regarding mothers' pensions, with the result that warm approval of the principle is widespread. Over 120 metropolitan, town, and

urban district councils, including those of Bethnal Green, Finsbury, Poplar, Holborn, Islington, St. Pancras, and Shoreditch; Sheffield, Portsmouth, West Ham, Cardiff, Oldham, Stoke-on-Trent, Huddersfield, Gateshead, and Willesden, have passed resolutions in favour of the adoption of such a scheme and urging on the Prime Minister and the Minister of Reconstruction its immediate promotion.

Infant welfare centres from all over the country, including those of Nottingham, Croydon, Sunderland, Manchester, Salford, Liverpool, Leicester, Leeds, and Perth, have taken similar action. Strong approval and support of the proposal have also come from such bodies as the National League for Health, Maternity and Child Welfare, the National Baby Week Council, the Women's Municipal Party, the Babies of the Empire Society, the Women's League of Service for Motherhood, and the Women's Civil Corps.

Many parliamentary candidates were approached on this important matter, and 200 of them expressed their interest and approval, several mentioning the subject in their election addresses and speeches. A considerable number of these candidates—nearly 70—has been elected and a strong parliamentary committee will, it is hoped, be formed to promote the necessary legislation—legislation which will prevent that separation of the mother from her children which does such incalculable harm to both, and will also abolish the present uncertain, unequal, and too often inadequate system of out-relief.

Tragic instances of the need for such a measure reach us constantly. We ask the help of your readers in securing for British widows and their children that steady improvement in health, in mental and moral development and above all in happiness which the pensions scheme makes possible for the widows and children of America.—We are, etc.,

(Signed) **LYTTON**,
Chairman.
HENRY BENTINCK,
GEORGE TOULMIN,
Vice-Chairmen.
ALBERT SPICER.
LOUISE OLIVER,
FRANCA BUXTON,
Hon. Treasurers.
HENRIETTA O. BARNETT,
Hon. Secretary.

State Children's Association,
53, Victoria Street, S.W.1.
January 21st.

ACIDOSIS.

SIR,—I have read most of the literature on acidosis published during the last five years, including the report to which Dr. Dougall so kindly directs my attention, and I am emphatically of his opinion that we have a good deal to learn on the subject. Not traces, but quantities, of acetone are found in the urine of many children who are in the initial stages of measles, pneumonia, influenza, poliomyelitis, and other febrile diseases, and in some of these cases the breath smells strongly of acetone.

What is the exact cause and significance of acetonuria no one knows, but it is certain that it is only an item in a sequence of events. If it is to be erected to the dignity of a separate disease, I fear its true explanation will be long delayed.—I am, etc.,

Wanstead Park, E., Jan. 20th.

A. CAMPBELL STARK.

RISKS AND REWARDS.

SIR,—The letter in the JOURNAL of January 25th from "Undecorated Regular" carries no reply to my letter in your issue of January 4th, as any one who takes the trouble to read both will observe.

I notice that whilst he fails to contest, and thereby accepts, the accuracy of the statements I have made, his sole resource is to undertake the defence of the Regular R.A.M.C. from a charge which I, at any rate, have not made against it, namely, that it is responsible for the system of awarding decorations which prevails in the army.

I hardly expected such support (even if indirect and unintentional) for the contents of my letter from an officer of the Regular R.A.M.C., and am correspondingly grateful for it.—I am, etc.,

January 27th.

FAIRPLAY.

VITAL STATISTICS IN ENGLAND AND WALES, 1918.

WE are indebted to the Registrar-General for the following statement showing the birth-rates and death-rates and the rate of infantile mortality in England and Wales and in certain parts of the country during 1918.

ENGLAND AND WALES.

Birth-rate, Death-rate, and Infant Mortality during the Year 1918 (Provisional Figures).

	Birth-rate per 1,000 Total Population.	Civilian Death-rate per 1,000 Civilian Population (Crude Rate)	Deaths Under One Year per 1,000 Births.
England and Wales*	17.7	?	97
96 great towns, including London (populations ex- ceeding 50,000 at the Census of 1911)	17.6	18.1	106
148 smaller towns (popula- tions from 20,000 to 50,000 at the Census of 1911)	18.0	16.1	94
London	15.8	18.7	107

* The civilian death-rate for England and Wales cannot be stated at present, the number of non-civilian deaths in the Fourth Quarter of 1918 not being available.

Obituary.

SIR JAMES SAWYER, M.D., F.R.C.P. LOND.,

Consulting Physician, Queen's Hospital, Birmingham.

SIR JAMES SAWYER died at his residence, Hatton, Warwick, on January 27th, in his 75th year. He was the son of Mr. James Sawyer of Carlisle, and received his medical education at Queen's College, Birmingham. He took the diploma of M.R.C.S. Eng. in 1866, and graduated M.B. in the University of London with first class honours in medicine in the following year, and M.D. in 1873. He became resident physician and medical tutor at Queen's Hospital, Birmingham, and retained the post until 1871, when he was appointed physician. When he retired and became a consulting physician he had been senior physician to the hospital for twenty-two years. He was also physician to the Children's Hospital from 1871 to 1876. In 1875 he was appointed professor of pathology in Queen's College, Birmingham, in 1878 he passed to the chair of materia medica and therapeutics, and in 1885 to that of medicine, an office from which he retired in 1891. He became a Member of the Royal College of Physicians of London in 1874 and was elected a Fellow in 1883. In 1908 he delivered the Lumleian Lectures, taking as his subject, "Points of practice in maladies of the heart." The subject had long interested him, and in 1870 he had issued a work on the physical diagnosis of diseases of the lungs and heart.

Sir James Sawyer had the pen of a ready writer, was a frequent contributor to the periodical press, and one of the founders, in 1872, of the *Birmingham Medical Review*. He was, however, above all things a practical physician, and his most important work, entitled *Contributions to Practical Medicine*, appeared first in 1886. Its success was immediate and continuous; he issued a fifth edition in 1912. The book deals with such subjects as the cause and treatment of insomnia, of constipation, and of asthma, and contains the text of his Lumleian Lectures. He took an interest in many things, among others in heraldry, and had a theory about the coat of arms granted by Henry VIII to the Royal College of Physicians of London. As usually shown, a hand from the clouds appears to be feeling the pulse of an arm in the centre of the coat. Sawyer maintained, and supported his view by reference to the actual grant in the College, that the hand was intended to express the heavenly power, and did not, when properly displayed, touch the arm. He was active in the affairs of Warwickshire, a J.P., and at one time chairman of the Warwickshire Chamber of Agriculture.

In early life he was an ardent politician; he became president of the Birmingham Conservative Association at a time when the prospects of the party were very discouraging. He was responsible for bringing Lord Randolph Churchill to oppose Mr. Bright in 1885. Four years later,

on the death of Mr. Bright, Sir James desired again to bring forward Lord Randolph Churchill, but his proposal met with strong opposition. He had never taken kindly to the alliance with the Liberal Unionist Party, and resigned his presidency of the Conservative Association in 1889. He received the honour of knighthood in 1885. He leaves a widow and two sons, one of whom is Lieut.-Colonel J. H. Sawyer, administrator of the 1st Southern General Hospital, assistant-physician to the General Hospital, Birmingham, and assistant to the chair of medicine in the University.

WE regret to record the death, which occurred last autumn, of Dr. JOSEPH SYLVESTER GALIZIA, of Sliema, Malta, a member of council of the Malta Branch of the British Medical Association. Dr. Galizia obtained the M.R.C.S. and L.R.C.P. diplomas in 1893, and afterwards graduated M.D. in the University of Malta. He practised many years in Malta, where he was one of the leading practitioners in the island and enjoyed a high reputation as a surgeon. He was junior surgeon to the local civil hospital and examiner in surgery and anatomy at the university. For several years he had held the position of honorary secretary and treasurer of the Malta Branch. His death from influenza, contracted in the discharge of his professional duties, is deeply felt by his colleagues and friends, who held him in high regard for his exceptional qualities of mind and heart.

DR. GEORGE WILLIAM MOULD, who died recently at his home at Llandrillo-yn-Rhos, Colwyn Bay, was born at Sudbury, Derbyshire, in October, 1838, the son of Thomas Mould of Dove Bank. He was educated at Queen's College, Birmingham, and obtained the diplomas of M.R.C.S.Eng. in 1858 and L.S.A. in 1862. After holding the post of house-surgeon to the Lancashire County Asylum, Prestwich, he obtained the appointment of medical superintendent at Manchester Royal Lunatic Hospital, Cheadle, to which institution he was subsequently appointed consulting physician. He was also lecturer on and examiner in mental diseases at Victoria University, Manchester. He held the office of president of the Medico-Psychological Association in 1880, and was president of the Section of Psychological Medicine of the annual meeting of the British Medical Association in Manchester, 1902.

PROFESSOR GEORG GAFFKY, director of the Institute of Hygiene at Giessen, died recently at the age of 68. He graduated at Berlin in 1873, and entered the Prussian army as a medical officer. In 1880 he was attached to the Imperial Health Office, of which he became a member in 1885. He accompanied Robert Koch on his expeditions to Egypt and India for the investigation of cholera in 1883-4, and he was head of the commission sent by the German Government to India in 1897 to investigate plague. In 1888 Gaffky was appointed professor of hygiene in the University of Giessen, of which he was rector in 1894-5. Besides a number of reports and monographs on cholera he published researches on the etiology of typhoid fever, enteritis following the use of uncooked milk, and many other subjects.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on January 25th the degree of Bachelor of Medicine was conferred on R. W. Lush and J. F. West.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

FIRST EXAMINATION FOR THE FELLOWSHIP.

SURGEONS, who hold or have held Commissions in His Majesty's Forces during the war, and who have done commendable surgical work during such service, may be admitted to the First Examination for the Diploma of Fellow on special conditions, as follows:

1. The subjects of the examination will be anatomy and physiology. The examination will be partly written and partly *viva voce*; the questions asked will have a direct bearing on practical surgery, and will not include morphology, embryology, histological or chemical methods, or practical examination in the use of the apparatus of the physiological laboratory.

2. A candidate must be a Member of the College, or a graduate of medicine of a university recognized by the College.

3. He must fill up a form of application provided for the purpose, to be obtained from Mr. F. G. Hallett, O.B.E., Examination Hall, Queen Square, Bloomsbury, W.C.1.

4. To this application should be attached evidence regarding his work from those under whom he has served.

5. The application, when submitted, will be considered by a committee of the Council of the Royal College of Surgeons, which will decide whether it be granted or not.

6. In the event of the application being granted, the candidate will be admitted on one occasion only to the special examination.

The first of these special examinations will be held in May, and the second in November of the current year. A third special examination will be held some time in the year 1920.

Candidates who wish to be admitted to the special examination in May, 1919, should submit their applications for admission at an early date if possible, and in any case not later than April 9th.

Medical News.

THE *Gazette des Hôpitaux*, which ceased to appear at the beginning of the war, has now resumed publication.

HIS Majesty the King of the Belgians has conferred the distinction of Chevalier de l'Ordre de Léopold upon Dr. A. George Bateman, of London, for services rendered to Belgium during the war.

SIR SAMUEL SCOTT, Bt., M.P. for St. Marylebone, has consented to introduce the Nurses' Registration Bill, drafted by the Central Committee for the State Registration of Nurses.

DR. CARREL, who has been in charge of the special French military hospital at Compiègne for four years, is returning to America to resume his post in the Rockefeller Institute.

THE annual dinner of the Hunterian Society will be held at Cannon Street Hotel, on Wednesday, February 5th, at 7 p.m., the President, Dr. Langdon Brown, in the chair. The annual oration will be delivered by Mr. Hugh Lett on Wednesday, February 12th, at 9 p.m., at the Rooms of the Royal Society of Medicine. The subject is "John Hunter and his influence on urinary surgery." All members of the profession are invited to be present.

THREE Hunterian lectures will be delivered before the Royal College of Surgeons of England next week: on Monday by Mr. A. J. Walton, assistant surgeon to the London Hospital, on the surgery of the spinal cord in peace and war; on Wednesday by Mr. David Ligat, acting assistant surgeon to the Middlesex Hospital, on the significance and surgical value of certain abdominal reflexes; and on Friday by Mr. Gordon Taylor, assistant surgeon to the Middlesex Hospital, on abdominal injuries of warfare. The lectures will be given at 5 p.m. each day.

A COURSE of Imperial Studies Lectures on physiology and national needs will be given at King's College, London, on Wednesdays. The first lecture, on physiology and the food problem, will be given by Professor Halliburton on February 5th; the second, on physical training of the open-air life, by Dr. M. S. Pembrey on February 12th; the third, on vitamins, by Professor Hopkins on February 19th; the fourth, on scurvy, by Professor Harden on February 26th; and the fifth, on physiology and the study of diseases, by Professor Noel Paton on March 5th. The lectures will be given at 5.30 p.m. on each day.

AN account was given last week (p. 109) of the general terms of the bill for compulsory notification of pulmonary tuberculosis in France. The text, which is now available, appears to imply that a special authority is to be set up to receive the notifications and to provide for the treatment of the patients and the disinfection of their houses. It is estimated that 50,000 beds will be required in 500 new institutions, and that the grant in aid to the patients' dependants will amount to nearly a million sterling a year.

At a meeting of the executive subcommittee of the Medical Parliamentary Committee, held on January 24th, it was announced that Sir Henry Morris had resigned the chairmanship on private grounds, and that Sir W. Watson Cheyne had been unanimously elected to succeed him. Sir Watson Cheyne, on taking the chair, remarked on the necessity of defining the objects of the committee, and of making its constitution representative. After discussion a statement was adopted indicating the programme of the committee.

THE Royal Sanitary Institute will hold a conference on post-war developments relating to public health on March 13th, 14th, and 15th. The following subjects will be brought forward for discussion: City hygiene in relation to employment; housing for city clerks and similar workers; public health aspect of tuberculosis; public health work and propaganda; welfare work in factories; child welfare work.

CAPTAIN J. R. DE LAMAR, an American mine owner, has left £2,000,000 to be distributed among the Harvard and Johns Hopkins Medical Schools and the College of Physicians and Surgeons of Columbia University, New York. The bequest is to be applied for purposes of medical research into the causes of disease and the principles of correct living.

SIR LAZARUS FLETCHER, F.R.S., who has held the office of Director of the Natural History Museum since 1909, will retire on March 3rd under the age rule. The first occupant of the office was Sir Richard Owen, who was appointed in 1856, after having worked for thirty years in the museum of the Royal College of Surgeons. In 1884 he was succeeded as director by Sir William Flower, who had previously been for twenty-three years curator of the museum of the Royal College of Surgeons. When, owing to failing health, Flower retired from the directorship of the Natural History Museum in 1898, he was succeeded by Sir Ray Lankester, who held the appointment until 1909, when Sir Lazarus Fletcher was appointed.

THE Conjoint Board of Scientific Societies has published at the house of the Royal Society, London, W.1, a diary of forthcoming meetings, and also a broadsheet of meetings from January 27th to February 8th. The constituent societies, which number fifty-four, include the Royal College of Physicians of London, the Royal College of Surgeons of England, the Physiological Society, the Pharmaceutical Society, the Royal Society of Medicine, the Biochemical Society, and the Society of Public Analysts. The list of these societies gives the name of the president and the address. Announcements of meetings should be sent to Professor R. A. Gregory, Nature Office, St. Martin's Street, London, W.C.2.

THE annual meeting of the American Medical Association will be held at Atlantic City in June this year. It is to be a "victory meeting," and delegates from all the allied countries are invited to attend. It has the approval of the Secretary of War and will have a semi-governmental character. There will be conferences between representatives of the medical departments of the United States Government and the foreign delegates as to the good results derived from the experience of the various countries in medicine and surgery, especially in their military aspects. The establishment and maintenance of co-operative inter-allied graduate study and research will be discussed.

AN Army Council Instruction has been issued drawing the attention of all concerned to that portion of Paragraph 26 of the Regulations for the Army Medical Service dealing with the custody and safe keeping, under lock and key, of drugs of a poisonous character. These should not be stocked in excess of actual requirements. Careful supervision to prevent improper expenditure should be observed in regard to the usage, issue, and dispensing of all hypnotic and poisonous drugs, especially cocaine, cocaine hydrochloride, heroin (diamorphine hydrochloride), morphine and its salts, opium and its preparations, veronal (barbitone). This instruction applies also to the medical branch of the Royal Air Force.

IN the JOURNAL of November 9th, 1918, p. 517, we published the findings of the Departmental Committee on Anthrax, appointed by the Home Secretary in 1913 to inquire into the danger of infection from anthrax in the manipulation of wool, goat hair, and camel hair. The Committee's report insisted that the prevention of anthrax must be treated as a world-problem if finality was to be reached. Owing to the impracticability of providing by regulations for disinfection in factories, the Committee recommended that it should be permitted only at central disinfecting stations set up for this sole purpose. The Home Secretary has now appointed a committee to establish a trial disinfecting station as recommended by the Departmental Committee, to carry out disinfection in it, and to make recommendations as to the construction, equipment, and working of other disinfecting stations to be erected. The chairman of the committee is Sir William Middlebrook, who succeeded Sir Thomas Whittaker as chairman of the Departmental Committee on Anthrax. The secretary is Mr. G. E. Duckering, to whom communications on the subject should be addressed at 72, Bridge Street, Manchester.

Letters, Notes, and Answers.

Authors desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Aitiology*, *Westrand*, London; telephone, 2631, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra*, *Westrand*, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

L.R.C.P.S. asks to be referred to information and statistics as to the after-results of trephining in epilepsy.

M.O.H., who has never driven a car, asks for advice in the choice of a type for country use; it must afford good protection from the weather.

"ENQUIRER" would be glad to know the address, and if possible any further particulars, of a good class sanatorium situated in a warm dry climate, suitable for a phthisical patient who also suffers from extensive bronchitis during the winter months.

LETTERS, NOTES, ETC.

DR. H. CARR-SMITH (London, W.) thinks that some readers will be glad to know that Messrs. Suttley and Silverlock of 92, Blackfriars Road, S.E.1, have brought out at his suggestion a form for ordering stimulants in cases of illness.

HISTORICAL ACCOUNT OF TONSILLECTOMY.

OUR attention has been called by a correspondent to the fact that a communication with the above title, by Dr. E. E. Violet Glover, which was submitted to us as an original article and published in the JOURNAL of December 21st, 1918, is taken almost word for word from Morell Mackenzie's *Diseases of the Throat and Nose*, vol. i, published in 1880. We have investigated the matter, and have given Dr. Glover an opportunity of furnishing an explanation. In the course of a letter, dated January 22nd, she makes the following statement:

"I intended to send you one of my original articles, of which I have a number, as well as several epitomes of famous books, and I enclosed one with a covering letter. One of my friends, however, suggested I should insert a series of articles—starting with some sort of historical account, and as I had a short précis (one of several) by me, on his advice I forwarded the 'Historical' Account. This was got out a long time ago, and I had no idea from where I had got it as I am a member of several libraries, Mackenzie's name not being among a few references on the back of the script. I therefore substituted this account in the envelope, but I left the letter I had written, as I was pressed for time, and had forgotten I mentioned an original article."

In all medical writings a certain amount of reproduction from previous authors is allowable, provided due acknowledgement is made. We are glad to have Dr. Glover's assurance that in this instance the bodily lifting of material without indication of the source was due to inadvertence; but we greatly regret our unwitting share in the incident.

THE appointment of certifying factory surgeon at Hitchin (Hertford) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

A NOTE

ON SODIUM MORRHUATE IN TUBERCULOSIS.

BY

SIR LEONARD ROGERS, Kt., C.I.E., M.D.,

F.R.C.P., F.R.S., LIEUT.-COLONEL I.M.S.

TUBERCULOSIS is the greatest medical problem of the day, being one of the most frequent causes of sickness and death in tropical as well as temperate climates. If anything like a cure for this disease could be discovered, the losses of the great war would be replaced within a very few decades. During the last year I have been working at a new line of treatment of tuberculosis on similar lines to that which has proved of great value in my hands in the case of the other human disease produced by an acid-fast bacillus, namely, leprosy. By a similar process to that by which sodium gynocardate is made from chaulmoogra oil a preparation has been made of the sodium salts of the unsaturated fatty acids of cod-liver oil after extraction by ether. This I have termed "sodium morrhuate."^{*} A 3 per cent. watery solution is sterilized in an autoclave and $\frac{1}{2}$ per cent. carbolic acid added. This may be injected subcutaneously with very little pain, and also intravenously. I had previously shown in 1916¹ that intravenous injections of sodium gynocardate in leprosy produced febrile and local reactions with breaking down of the bacilli and had suggested its trial in tuberculosis as that disease is also produced by an acid-fast bacillus. As, however, in rare cases of leprosy prolonged febrile reactions with temporary exacerbation of the disease may follow sodium gynocardate given intravenously,² I hesitated to use it in tuberculosis by that method. Given by the mouth in phthisis some gain in weight only resulted, and it causes painful local induration hypodermically. Several attempts I made to investigate the use of the drug in tubercle infected animals failed for want of a virulent bovine culture. It was in these circumstances that I was led to prepare sodium morrhuate from cod-liver oil. Its subcutaneous injection proved to be nearly painless, and a year's experience has shown it to be of great value in leprosy. This is a most important point, as it proves that there is nothing absolutely specific in the products of chaulmoogra oil in that disease, and supports my view that the sodium salts of the unsaturated fatty acids of these two oils act in some way on the coating of the acid fast bacilli, that of tuberculosis having been shown to contain palmitic and other unsaturated fatty acids. During the past year sodium morrhuate has also been used with very promising results in tuberculosis by several careful observers to whom I have supplied it, and morphological changes have been noted in the tubercle bacilli in the sputum. A wide field of investigation has thus been opened out, as it appears to be possible that the organisms of other chronic diseases, including that of syphilis, might possibly also be broken up in the system by similar methods.

Sodium morrhuate has now been under trial for a year, and from my own limited experience and the more extensive experience of Dr. E. Muir, M.D., F.R.C.S.E., of the Kulna Mission Hospital in the unhealthy Burdwan district of Bengal; of Captain R. Knowles, I.M.S., director of the Pasteur Institute, Shillong; of Dr. Caleb Davies, M.B., Ch.B., in Eastern Bengal, and of Lieut.-Colonel A. W. R. Cochrane, M.B., F.R.C.S., I.M.S., of the Bhowali Sanitarium, Kumaon Hills, to all of whom I am greatly indebted for trying the new treatment. I am satisfied that it is harmless. The three first named observers are convinced of its great value, although the last, with a shorter experience, is not satisfied that it has produced any permanent effects either for good or evil. Their reports will be published in full, together with my own more limited experience, in an early number of the *Indian Journal of Medical Research*, with details of the method of preparation, which is essentially the same as that of making sodium gynocardate already recorded.³ Limits of space will only allow of a brief summary of the results so

far obtained being recorded here to enable others to give the method a trial.

Dosage and Reactions.

In a case of old-standing lupus of the face, kindly sent to me by Miss Webb, of the Calcutta Dufferin Hospital, intravenous injections of sodium morrhuate produced a slight febrile and a definite local congestive reaction, similar to those obtained in leprosy. In phthisis similar febrile reactions occur, while occasionally there may be slight haemoptysis, indicating a local reaction in the affected lung tissue, which clearly point to a definite action on the tuberculous lesions. No harm has followed such reactions; frequently the temperature and other symptoms have improved decidedly after them. Their occurrence indicates the necessity for the precaution of increasing the doses very gradually. I usually begin with $\frac{1}{2}$ c.cm. of the 3 per cent. solution, and increase by 2 to 4 minims at each injection, which may be given two or three times a week until any reaction occurs; then a week's interval is left and the dose reduced. The injections are given subcutaneously until they reach an inconvenient size, such as 2 c.cm., when intravenous injections can be begun with $\frac{1}{2}$ c.cm., gradually increased in the same way as with the subcutaneous ones. Dr. Muir finds he gets the best results by pushing the dose until a febrile reaction occurs and then returning to a small dose and gradually increasing it again. In febrile cases the doses should be smaller and more slowly increased than in afebrile ones. He has gone up to 4 c.cm. intravenously two or three times a week.

Progress.

Improvement in phthisical cases is seen in reduction and cessation of the fever, diminution of the expectoration and cough, and steady gain in weight, the last being a very marked and satisfactory feature. In addition, the tubercle bacilli in the sputum greatly decrease in numbers, and may in time disappear. Moreover, they commonly show deficient acid staining and a granular or beaded appearance, indicating that they are actually being destroyed within the tissues. Captain Knowles has especially observed these changes, while Dr. Muir and I have also noticed them.

For example, the first phthisical patient I treated had extensive breaking down of the right apex, fever, profuse expectoration, and most distressing cough preventing sleep. When a 1 c.cm. dose was reached she had a reactionary rise of temperature, followed by a normal temperature for a week, and only a few rises to 100° F. later. The sputum and cough gradually subsided and she gained 10 lb. in weight in two months. Seven months later she wrote that she was keeping well in spite of having passed through an attack of influenza.

Another remarkable case was a missionary, sent to me by Dr. Caleb Davies, with slight affection of the right apex and early tuberculous epididymitis, both of which cleared up after twelve injections of sodium morrhuate. A patient with tuberculous disease of the knee put on 9½ lb. in four months and improved in his general health while having the injections, but of course he also had rest in bed with splints, and no conclusions can be drawn from a single case of joint tuberculosis.

Clinical Reports.

As my opportunities for clinical trials are necessarily very limited, the following abstracts from the reports which have reached me from reliable clinical workers are of more importance than my small experience.

Dr. Muir has had a year's experience of the new treatment and he reports that he is strongly convinced of the great usefulness of the drug. He has noted increased expectoration accompanying a febrile reaction and advises measuring the sputum in graduated bottles and taking the temperature frequently to detect slight reactions. In phthisis he considers the results to be far superior to those produced by tuberculin, and although he does not yet claim any cures, he thinks the results "are sufficiently encouraging to lead to the hope that the cases under treatment will be finally cured." His previous experience at Kulna makes him regard the climate there as exceedingly inimical to tubercle, so that spontaneous improvement can be eliminated, yet in all but the most

^{*}Sodium morrhuate is being manufactured by Messrs. Smith Stanishreet and Co., Calcutta. Their London agents are Messrs. Evans, Son, Lescher, and Webb, Ltd., 60, Bartholomew Close, London, and of 92, William Street, New York.

advanced cases improvement was obtained under sodium morrhuate, and he thinks that even more favourable results might be obtained under better climatic conditions. In pulmonary phthisis he summarizes his results thus:

(a) Rapid diminution in the amount of the sputum in lung cases. (b) Rapid putting on of flesh and weight. (c) Diminution in the fever in febrile cases. (d) Increase in weight and strength. (e) Diminution in the number of the tubercle bacilli in the sputum.

In gland cases he noted reactions in the form of fever and local swelling, followed by very marked and rapid improvement, matted glands becoming discrete, and later all but disappearing.

Captain Knowles has also had nearly a year's experience of the treatment, and records valuable detailed accounts of his cases. He concludes as follows:

I am not yet satisfied that the drug is a specific cure for tuberculosis. I am, however, certain that it is at present the best line of treatment for tuberculosis in general. Tuberculin in unskilled hands is about as dangerous as prussic acid.

He regards

The marked increase in weight as the outstanding feature of the series; along with this, very often, goes a persistently normal temperature. The general health of the patient often shows a marked improvement. For early cases the treatment is an admirable one.

His first case was a serious one, with fever, cavitation, night sweats, repeated haemoptysis, paroxysmal cough, and sputum loaded with tubercle bacilli. This patient improved rapidly, and his sputum is now free from tubercle bacilli, while he has done full work for six months past. Captain Knowles also reports several earlier cases with very favourable results, and apparent cure in some. He has used comparatively small doses every fourth or fifth day, and has aimed at avoiding anything in the way of a severe reaction. In two of the cases clearing up of physical signs in the lung was demonstrated by means of x-ray observations before and after the course of injections.

Major C. Brierley, I.M.S., civil surgeon of Peshawar, has also kindly reported to me the two following remarkable cases. The first was a man with advanced phthisis, who was treated with 2 c.cm. doses of a 3 per cent. solution of sodium morrhuate intramuscularly three times a week for two weeks, and 2 c.cm. sodium gynocardate intravenously once a week for the next fortnight owing to sodium morrhuate running short, after which sodium morrhuate was again used. During the first week he was worse with high fever and increased expectoration—a severe reaction, after which he rapidly improved, and at the end of a month had gained 8 lb. in weight. At the end of six weeks no expectoration could be obtained, and he had gained 12 lb. during the last three weeks.

The second case was a boy of 15 with apical phthisis, very extensive breaking down of glands in the neck with numerous sinuses, which had resisted repeated operations, and a greatly disorganized and suppurating wrist-joint indicating amputation. He was also treated with 2 c.cm. doses intramuscularly, and at the time of writing, six weeks later, the lung signs had disappeared, many of the sinuses in the neck had healed without any surgical treatment after more rapid breaking down of the glands in some of them, and the condition of the wrist had decidedly improved.

Such cases as these afford great hope of the new treatment proving to have a permanent value in tuberculosis.

CONCLUSION.

I fully realize the great responsibility of bringing forward a new treatment for such a serious and widespread disease as tuberculosis. A year's trial by several careful workers has, however, convinced me that it is harmless in the doses recommended, which is more than can be said of that double-edged weapon tuberculin, regarding which, after over a quarter of a century's world-wide trials, scarcely two experts are agreed, either on the doses or the particular preparation to use, although no one doubts the great harm it often does in inexperienced hands. At the same time, the fact that sodium morrhuate causes febrile and local reactions necessitates great caution in pushing the drug beyond the limits which have so far proved safe, and a warning is required regarding the possibility of harm being done by its injudicious use. With this caution I feel that the results already obtained justify

me in bringing sodium morrhuate to the notice of the medical profession, to allow of the prolonged trials by many skilled workers which will be necessary before its permanent value, if any, can be decided, and the indications and contraindications for its use worked out.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, October 21st, 1916. ² *Ind. Journ. Med. Research*, October, 1917. ³ Ghosh, *Ind. Journ. Med. Research*, April, 1917, p. 691.

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY TO MEDICAL STUDENTS.

A GENERAL SURVEY OF THE SUBJECTS TO BE TAUGHT AND OF THE METHODS OF TEACHING THEM.*

BY

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THE importance of a thorough training in obstetrics for students of medicine, who with few exceptions will enter general practice, is generally accepted. My duty this evening is to introduce a discussion on this subject in order that we who have the great responsibility of teaching may consider our aims and methods, so as to ensure that our training shall be as perfect as possible and our students made capable of rendering the great service to the nation that the efficient care of mother and infant can afford.

We who are teachers can help each other by comparing our methods; those who have profited more or less by our teaching can assist us even more by pointing out from their own experience of practice where our teaching methods have been deficient. We shall welcome candid criticism from any source, directed not to schools or individuals but to the methods which are more or less common to all.

Gynaecology is so intimately bound up with obstetrics that any attempt to teach these as separate subjects is futile, though there is much in each subject to be taught independently. It appears to me that our aims should be to give the student a good general knowledge of the special diseases of women in order that the practitioner may be able to deal adequately with the simpler cases, and to know when he ought to obtain more skilled assistance. Preventive gynaecology necessitates very thorough teaching—the prevention of infection, the prevention of the extension of infection, and the prevention and the early relief of various complications of pregnancy, labour, and the puerperium, such as lacerations and imperfect involution. While advanced and operative work is for the graduate who has the time and opportunity for further study, our aim should be to stimulate every student to take a keen interest and pride in the advancement made and to be made in our knowledge of these subjects, and so far as in him lies to do something towards the elucidation of the many problems which await solution.

I. SUBJECTS TO BE TAUGHT.

The obstetric anatomy of the pelvis must be taught by the obstetrician. The anatomy of the pelvic organs, not necessarily in minute detail, but the gross anatomy, must be taught with the greatest accuracy.

The Physiology of the Generative Organs.—Menstruation, puberty, and the climacteric: This subject, so fundamental to gynaecology, is generally neglected by the teachers of physiology, and must be taught by the obstetrician whose experience will enable him to give the student a view of its far-reaching importance in health and disease, mental and physical.

Pregnancy.—(1) The general structural changes in all parts of the body affected by pregnancy as well as the special organs and their functions, by which the symptoms and physical signs are recognizable in diagnosis. (2) The general development of the ovum into the mature fetus, placenta, and other parts. (Minute details of development are unnecessary in this course.) (3) Morning sickness. (4) Duration of pregnancy and the prediction of the probable day of confinement. (5) The various positions of the fetus and the means for recognizing them.

* An introduction to a discussion in the Section of Obstetrics and Gynaecology of the Royal Society of Medicine. Other parts of the discussion will be reported next week.

Labour.—(1) The general process and phenomena. (2) The doctor's and nurse's duties in preparation for and during labour. (3) Anaesthetics and substitutes. (4) Drugs—ergot and pituitrin.

The Puerperium.—The process in general and phenomena. Lactation, breast feeding, care of the breasts; doctors' and nurses' duties, doctors' and nurses' fees.

Pathology.—(1) The pathology of pregnancy, intra-uterine and extrauterine, with the diagnosis and treatment. (2) The pathology of labour: The treatment of many obstetrical complications should be taught, not only by methods applicable when skilled assistance, trained nurses and the most approved instruments are available, but in the circumstances when the attendant has to rely on himself and simpler resources. (3) The pathology of the puerperium. (4) The pathology of the young infant. (5) Artificial feeding of the infant.

II. METHODS OF TEACHING.

The means at our disposal comprise demonstration lectures; laboratory, museum and *post-mortem* work; clinical work, and teaching in wards and out-patient departments.

It appears to be obvious that all the subjects which involve diagnosis and treatment should be taught during the time that the student is engaged in his clinical work in obstetrics and gynaecology, and that instruction in obstetric anatomy, menstruation, normal pregnancy, and labour should immediately precede this course. Also, that as the practice of obstetrics and gynaecology is the practice of medicine and surgery applied to special organs and conditions, the student should have completed his course in those subjects, including pathology with bacteriology, before taking the special course.

I think we may take for granted that the long wearisome courses of lectures which were customary in the medical schools are not the best method of teaching any branch of medicine and surgery to students. I am equally sure that good lectures, well illustrated by personal experience, are of great value to advanced students who have already been grounded in the principles of the subject and have begun to obtain some experience of their own.

I am sure also of the value of demonstration lectures, well illustrated and with plenty of *viva voce* questioning, which helps to maintain the close attention of the students, and enables the lecturer to discover if they have learnt anything from his previous lectures. It is well to select men from the back rows for *viva voce*, men whose modesty or fear of the process lead them to take a back seat. One great advantage of lectures over the admirable textbooks of the present time is the opportunities which the lecturer has for emphasizing and repeating points of fundamental importance and for illustrating them from his own experiences. The subjects which can be well taught in this way are the obstetric anatomy of the pelvis and its contents, menstruation, the anatomy of pregnancy, of labour, of the puerperium, and the mechanism of labour, which should be taught with a fetus, not with the fetal skull only. I do not know of any doll which is sufficiently flexible. The whole of the remaining subjects, namely, the great bulk of them, should be taught by demonstration lectures accompanying clinical work in the wards and out-patient rooms.

With regard to gynaecology, the large out-patient departments of the hospitals, if properly organized for teaching, afford most valuable means of instruction, the students attending for three months and having charge of the cases allotted to them, preparing the notes and examining the patients individually with the physician. The chief difficulty I had personally during the thirty years that I assisted or was in charge of the out-patient department of St. Bartholomew's, was from the large number of patients who attended, and it was necessary for one of my clinical assistants to supervise the case-taking by the students and to prepare a list of cases so that I could select those I required for teaching. If the case-taking is done systematically, according to a scheme of which each student has a copy, and accurately (a very difficult thing for the beginner, the patient misunderstanding the question and the student her answer), he will gradually acquire the power of forming correct opinions about the nature of the ailment from the history alone—

a very valuable asset to the young practitioner, especially in gynaecological cases where the patient might hesitate to allow him to make a proper examination.

This personal responsibility for forming correct opinions for diagnosis, prognosis and treatment cannot be inculcated too soon; it is an unpleasant experience to have to begin to acquire it in practice. The amount of time that this kind of instruction takes is considerable, and much patience is needed, but the value not only to the individual student but to the whole class is well worth it, and it gives rise to much good humoured criticism, not only on the part of the other members of the class, but often by the patient herself.

Out-patient Obstetric Work.

This comprises two distinct departments: (1) The attendance by students on patients in their own homes; (2) the attendance of pregnant women in the out-patient department of the hospital.

The value of the former to the student, if he has had the necessary instruction as well as experience in the proper management of cases in the labour and lying-in wards, is very great. The responsibility he meets with compels him to find out his deficiencies on the one hand, and gives him confidence and self-reliance on the other. The results obtained bear witness to the care taken by students of their patients, and to the great freedom from the calamities of obstetric practice. This attendance of patients in their own homes is also of great value in bringing the student into direct touch with the domestic difficulties and social relations of the poor, and in developing that sympathetic feeling for their troubles and privations so characteristic of our profession, and which is so often accompanied by their practical advice and unostentatious assistance.

The value of the training to the student attending this department is also great if he is held to be personally responsible for the history and examination of the patients. He learns to diagnose pregnancy when advanced, not usually a very difficult procedure, but one in which most unexpected mistakes are not very uncommon even in the practice of men of experience. He learns to diagnose the position of the fetus and the presentation by abdominal and vaginal examination. He learns to measure the pelvis; if he also does this in the *post-mortem* room, where he can compare his results with the actual internal measurements, he will be in a better position to realize the uncertainties and errors of the method and its great value in certain circumstances. He will occasionally meet with breech and other abnormal presentations, and will learn the easy and advantageous operation of external version. He will occasionally meet with other complications and learn how to recognize and deal with them. He will examine the breasts, and learn what can be done to relieve conditions which may interfere with lactation. He will examine the urine, and in doubtful cases obtain a catheter specimen. He will examine the vulvo vagina for evidence of infection, and learn to take the necessary steps for thorough disinfection and treatment. He may meet with cases of chorea or early mental trouble, but for the treatment of mental cases he must visit an asylum and learn the principles of treatment which, if properly carried out, are followed by such a high proportion of recoveries. Above all, he will learn the value of the systematic examination of all women advanced in pregnancy, and the advantage of being sure that all important details are normal before confinement, and be forewarned of difficulties and complications.

Gynaecology.

The chief difficulty in ward teaching at the present time is due to the abundance of surgical material which interests and occupies the time of the gynaecologist to the exclusion of cases of great importance for teaching. Some experience of the major operations, though advantageous, is of small value to him, and he learns too little of the minor gynaecology which will come to him in general practice, and he is induced to take little interest in cases not needing operative treatment. What, for instance, does the student learn about the treatment of the ordinary common cases of dysmenorrhoea, of the methods for the relief of cases of inoperable carcinoma which he will have to attend to the end?

When we consider the clinical means for teaching obstetrics, that most important branch of practice for every general practitioner whose ignorance or want of care

may lead to great suffering and long illness, and may even involve the life of his patients and their babies, and, indeed, that of his own wife and child, we find ourselves face to face with great difficulties. Owing to the better systematizing of our small resources we are somewhat better off than in 1906, when I had the opportunity in Toronto of discussing this subject in my address at the meeting of the British Medical Association. How can any branch of medicine and surgery be properly taught in an out-patient department only—and the department scattered over an area of, say, a square mile, with no real and effective supervision, and without the aid of competent nursing? Hospital authorities have provided a few beds for special cases, but though these are of immense value what are they but a pittance?

I am not of the opinion that the value of a hospital for teaching purposes is necessarily improved in proportion to the large number of its beds; this depends on the number being adequate and on the ability of those in charge of it to make the best use of them. At Queen Charlotte's, where I worked regularly for twenty years, we had admirable opportunities for teaching. We had the great advantage of teaching at the bedside and in the labour wards mixed classes of students and post-graduates, together with midwives and monthly nurses, and it would be difficult to determine who gained most from the mixed classes—the students, who soon discovered how little they knew of the nurses' duties, or the nurses, who gradually began to realize their own ignorance and the difference between their superficial training and that of the doctors. This combined training, if general, would, in my opinion, also do much to place the relations of doctor and midwife on the friendly footing of mutual confidence and help that should exist for the benefit of the poorer women and their infants.

It is in the organization of maternity wards or hospitals in our great teaching centres, comparable to those devoted to medicine and surgery, that we must look for our next great improvement in the teaching of obstetrics, and without these we are severely handicapped in our endeavours. A three months' combined course in obstetrics and gynaecology, the whole time being given up to the subjects, would probably prove to be sufficient.

A CRITICISM OF SOME MODERN METHODS OF INFANT FEEDING.

BY

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I VENTURE to submit these few notes, on a subject of some importance, as the result of long and close observation of the progress of babies in general practice.

The following is approximately the method of artificial feeding adopted by some of the large London hospitals and institutions:

The baby is not fed for the first forty-eight hours after birth; he may be given a little sterile water. After this period the following mixture is used for the first week: milk (sterile) 1 part, water 3 parts, with sugar about 10 grains and cream 5 minims to an ounce of the mixture. This is given every four hours on the third day, and on the fourth day every three hours from 7 a.m. to 10 p.m. From 10 p.m. to 7 a.m. only one feed is given, making in the twenty-four hours a total of seven feeds. The quantity allowed at each feed is $\frac{1}{2}$ ounces for the first week, sometimes 2 ounces. During the second week the mixture is strengthened to half milk and half water, and the quantity is increased to 2 ounces; the intervals are kept the same.

This method is apparently adopted in all cases irrespective of the size of the infant or his evident appetite. The principle of such feeding seems to me to be wrong, for I cannot see that it is a good imitation of the way in which a baby or any other young animal is naturally fed. The mixture is probably more or less correct, for it resembles the composition of the mother's milk; but, in my opinion, the quantity and the intervals between feeds are in many instances unsuitable, for the following reasons:

(a) *Quantity*.—A young healthy infant always sucks at the breast until he is satisfied; in doing this he very often empties it. The amount of milk which can be drawn from a woman's breast is usually about 2½ or 3 ounces, though it may of course

be less. It seems to me unreasonable to give an infant less food than it would get from a healthy mother.

(b) *Intervals*.—In the course of a good many years of general practice I have asked nursing mothers how long intervals they gave between feeds. The answer is nearly always two to two and a quarter hours, perhaps two and a half hours, never longer, for at least the first month, except at night. When asked why they do not give longer intervals, some or all of the following reasons are invariably given: (1) If the interval is lengthened the baby cries a great deal; (2) the nights are bad because the baby does not sleep for many hours at a stretch; (3) the breasts get swollen and painful. These are very sound reasons for not giving long intervals.

From observation of many cases I am sure that bottle-fed babies do better, increase in weight and sleep well if the intervals are short. I have often been asked why the baby cries so much, and in nine cases out of ten I have told the mother to give the food more frequently and the baby ceases crying (provided it is allowed enough). Perhaps it is not realized how harmful it is to a mother to have her baby crying a great deal; she gets bad nights, feels worried, and becomes restless and nervous, and her recovery is very much retarded.

About twenty or twenty-five years ago a great deal was written and said about infant feeding, and it was pointed out that babies were grossly overfed; this was quite true in many instances, for they were given milk and very thick barley-water and much sugar and cream, and the food was more or less forced down their throats; but now we have gone to the other extreme and in consequence a great many infants are underfed and some nearly starved.

No hard and fast rule can be laid down as to the quantity of food an infant should be allowed irrespective of his size, weight, and natural appetite. It is obvious that a 10 lb. baby requires more food than one of 6½ lb. I believe also that some babies digest their food more completely than others, exactly as in the case of adults, so that even with babies of the same weight one cannot be sure that they will do well on the same quantity of food.

The method I advocate is as follows:

(a) *Breast-fed Babies*.—The baby is put to the breast from twelve to sixteen hours after birth, and about every six hours after this until the milk comes. If he cries and seems thirsty he is given sterile water. After the milk has come the baby is put to the breast at least every two hours from about 8 a.m. until 10 p.m., leaving him there till he is satisfied, and, if necessary, waking him at the right times. A good supply of nourishment is thus obtained during the day so that much food is not needed during the night. After 10 p.m. the baby is allowed to sleep as long as he will; he usually has to be fed once or perhaps twice between 10 p.m. and 3 a.m.; after the first two or three weeks a baby will often sleep six or even eight hours at a stretch if he has had enough food during the daytime. In some cases, where the baby is small and weak and can only take a little food at a time, and wakes and cries within two hours, he is fed every hour and a half for the first seven days, or even longer. As the infant grows older the intervals of feeding can be gradually lengthened as a rule; about the third or fourth month, or sooner, the baby is often on three-hourly feeds, but this depends on the comfort of the mother and the appetite of the baby, and must not be a hard and fast rule.

(b) *Bottle-feeding*.—I endeavour to imitate nature as closely as possible; the times of feeding are practically the same as in breast-fed infants. The mixture is as follows, subject to variations: For the first two or three days 1 part milk, 3 parts water, cream $\frac{1}{2}$ drachm, sugar $\frac{1}{2}$ drachm to each feed. After this the mixture is gradually strengthened, till at the end of fourteen days it is 1 part milk, $\frac{1}{2}$ parts water, 1 drachm cream, rather less than a drachm of sugar to each bottle; sodium citrate or sodium bicarbonate may be added. I do not want to emphasize the ingredients or strength of the mixture, or the variations which may be necessary, but to insist that enough must be given to satisfy the infant. The easiest way to make sure of this is to put enough of the mixture in the bottle, let the baby have it from twenty to thirty minutes (the hole of the teat being of a suitable size), and then take it away. If a baby finishes every bottle it is fairly certain that he is not having enough. A baby, like an adult takes more at one meal than another, and it therefore follows that there should be something left in some of the bottles. I have found that the actual quantity varies very much, as one would expect—a 10 lb. baby takes more food than a 6½ lb. baby, as a rule, though not always. Some babies are quite content on the stereotyped allowance of 1½ oz. for the first week and 2 oz. for the second; others need much more. In the second week it is common for a baby to require quite 3 oz. in some of its feeds, notably in those following a long sleep. If a baby gets nine feeds in the twenty-four hours with an average of 2½ oz. a feed he will get 22½ oz. in all. This is not an uncommon amount for an 8 lb. or 9 lb. baby to take, but some will require even more, others rather less.

Many doctors would object that by this method the baby would be grossly overfed, but I contend that it is difficult

to overfeed a baby, provided the strength of the mixture is right, the hole in the teat is not too large, and the baby is not allowed to suck too long. A baby at the breast takes as much as he wants, and only leaves off when he is satisfied; a baby at the bottle should do the same. If a breast-fed baby gets a little too much he regurgitates the surplus quite easily; a baby at the bottle does just the same. I would even go so far as to suggest that if a baby does not occasionally bring up a little food he is not getting enough to eat.

Unfortunately there is a school that teaches that the correct way to feed an infant is to give it a limited amount of food at three or even four hourly intervals. Most textbooks recommend intervals of about two hours, but nearly all lay down the exact amount of food to be given at each feed, even to within $\frac{1}{4}$ or $\frac{1}{2}$ oz., which to my mind is absurd. In two works a rational method is advocated: Hutchison and Stanfield Collier's *Index of Treatment* recommends that the baby be allowed to suck until he is satisfied, as he will easily regurgitate any surplus, but the amount of food is not mentioned. Tweedy and Wrench give the quantity of from 1 to 3 oz. at two-hourly intervals; this variation seems to me sound.

It is true that the infant mortality has much decreased of late years, but this, I suggest, is not due to the system of starvation, but to the general introduction of regular feeding, cleanliness, and the better mixture of the food. The system of long intervals and limited feeds is being advocated at many infant welfare centres, and I fear it will bring discredit on them, for the mothers will find that babies fed in this manner do not do so well as others, and that the plan often has to be abandoned.

A fitting judgement on those who condemn infants to be fed at such long intervals on such small quantities would be for them to live the rest of their lives in a small house with a succession of such babies and listen to their pitiful cries by day and by night.

TREATMENT OF EARLY SYPHILIS.

BY

ROBERT GIBSON, M.D. EDIN.,

HONORARY DERMATOLOGIST, SALFORD ROYAL HOSPITAL; MEDICAL OFFICER, SKIN HOSPITAL, MANCHESTER.

It is necessary in treating early syphilis to have a definite system of work, and to keep records for a stated term before making any deductions.

Mercury alone can cure many cases of syphilis if persisted in for a sufficiently long time, but it is questionable if a course of less than two years is of any value at any stage of the disease.

With salvarsan and its alternatives, however, the term of active treatment can be greatly shortened, and in the very early stages of the infection the disease can be aborted, although it may be advisable to keep the patient under observation for two years.

The following observations are made from the standpoint that a positive reaction is indicative of syphilis in its secondary stage, and that the disappearance of the positive reaction for six months after treatment with mercury has been discontinued is evidence of cure. These views are easily open to controversy, but I have not seen a case of secondary syphilis—which has not had any treatment—give a negative reaction; nor have I seen a case of secondary syphilis which gave a negative reaction for six months after treatment with mercury and salvarsan was discontinued again develop a positive blood test, unless reinfectd.

In the scheme I suggest the terms "primary" and "secondary" are interpreted not according to clinical signs but according to the blood test.

Primary or Pre-positive Stage.

This stage extends from the date of infection until the blood test becomes positive. The length of this stage is variable, depending on many factors, such as the virulence of the infection, the resistance of the individual, and the delicacy of the test. I would put it at less than six weeks. In secondary syphilis the blood test has become positive though the clinical signs may not have appeared.

Course of Treatment of Primary Syphilis.

(Neokharsivan, novarsenobillon, or galyl given by intravenous injection; mercury by intramuscular.)

Day.	N., or NAB.	or Galyl.	Mercury.
First (consultation) ...	—	—	gr. j
Second	0.45 gram	0.25 gram	—
Ninth	0.45 ..	0.25 ..	gr. j
Sixteenth	0.6 ..	0.30 ..	gr. j
Twenty-third	0.6 ..	0.30 ..	gr. j
Thirtieth	0.75 ..	0.35 ..	gr. j
Thirty-seventh	0.75 ..	0.35 ..	gr. j
Forty-fourth	0.9 ..	0.40 ..	gr. j
Fifty-first	0.9 ..	0.40 ..	gr. j

N. = Neokharsivan. NAB. = Novarsenobillon.

This constitutes a course, but if the patient can stand two further weekly injections of mercury I prefer to give them. Local inunction of calomel ointment is ordered for the chancre.

At the end of five weeks potassium iodide gr. x is given three times a day for a week, and a blood test performed. If this is negative another test is performed twelve weeks later, and if this is negative the case is looked on as cured.

In many very early cases this course may be too long, but for the bulk of cases it is good, and from it satisfactory results may confidently be anticipated.

Secondary Syphilis.

In this stage it must be presumed that a profound change has taken place in the patient, and consequently the prognosis is not so good, and the treatment must be correspondingly lengthened. The course advocated for primary cases is given, and at the end of six weeks, if the blood test is negative, a second course of six weekly injections of mercury gr. j is given. This is followed by three similar courses at intervals of eight, ten, and twelve weeks. If the reaction is negative twelve weeks after the fifth course, a wait of another twelve weeks is enjoined before another test is performed. If this is negative the patient is looked on as cured. The idea by which the scheme is inspired is to nurse the case towards a six-month negative blood test.

The total length of time that a favourable case of secondary syphilis is under observation is seventy-four weeks, during which there are thirty weeks of active treatment.

The object of giving potassium iodide at the end of a definite time after the mercury is that I think it gives a better chance of getting a positive blood reaction. This may or may not be so, but I do not believe that iodide can render the reaction negative, as I have seen cases of obstinate tertiary palmar and plantar lesions in which iodide has been given for very long terms still show a strongly positive reaction.

The iodide is not given immediately the mercurial course is finished, as I have seen cases which stood the mercurial injections well develop mercurial poisoning when the iodide was given too early. The drugs used for intravenous injection have been galyl, neokharsivan and novarsenobillon. So far as I am able to judge, the results have been pretty much the same with all these preparations. Novarsenobillon is the most readily soluble and can easily be given with a syringe. Should any of the solution get into the subcutaneous tissues the pain—which is slightly delayed—is very acute. What I mean by "slightly delayed" is that the swelling caused by the effusion of the solution is noticed for some minutes before the patient complains. The subsequent reaction of the tissues is very great. The local effects of slight effusion of galyl and neokharsivan are not so great. Galyl, in the earlier days, was not readily soluble and did not appear to be always uniform in composition, that is, judging by the look of the solution, but this seems to have been remedied in the later preparations. Mercury emulsions of 10 per cent., 20 per cent., and 40 per cent. have been used.

I find that private patients bear intramuscular injections of mercury better than hospital cases, and in the latter class miners and footballers often complain so bitterly that

oral administration has to be substituted for the intramuscular method. Should a positive test be obtained after the first course, then three intravenous injections of the salvarsan alternative are given with the second course, which is called an intermediate course, but this does not interfere with the second, third, fourth, and fifth courses. This means a lengthening of the whole course of treatment by six weeks and of observation by twelve weeks.

Causes of Bad Results.

1. *Age.*—Patients contracting syphilis after the age of 40 seem to have more difficulty in becoming cured, as judged by the blood test, than younger cases.

2. The longer the delay in starting treatment after infection the more disappointing are the results, and vice versa.

3. *A Virulent Infection.*—This may be explained either by a low resistance of the individual or a high virulence of the syphilitic virus, or a combination of both. Clinically, it appears impossible to state when one is dealing with such a case. I would, however, state that it is difficult to get and keep the reaction negative in rupial syphilis.

4. Alcoholics are a class in which it is difficult to get good results, and for this reason total abstinence is always enjoined.

5. If the teeth are bad and the mouth septic, as so often happens in hospital cases, oral administration is to be preferred to the intramuscular method, because, if the gums are "touched"—a point of saturation with mercury to be aimed at—an uncontrollable stomatitis is liable to be set up.

6. There are a limited number of persons who do not stand mercury well, and in these the prognosis is not good. There are also a limited number who show idiosyncrasy to intravenous medication with arsenical compounds. I would give a more guarded prognosis in the case of secondary syphilis with idiosyncrasy to mercury than in the case of idiosyncrasy to arsenic compounds.

Suppose a man presents himself with an early chancre on the penis and states that he has exposed his wife recently to infection, it seems debatable whether the woman ought not to be given a few intravenous injections of salvarsan substitutes. I quite admit that it could never be known whether she had been saved from general infection or not, but when we consider the enormous difference between early and late treatment it seems a suggestion worthy of further thought.

THE TREATMENT OF VENEREAL DISEASE.

BY

SIR ARCHDALL REID, M.B.,

AND

SURGEON COMMANDER P. HAMILTON BOYDEN, M.D., R.N.

EVERY great war has been followed by an increase in venereal disease, so marked that on occasions it has amounted to a pestilence. Unless timely sanitary precautions are taken the greatest of all wars is unlikely to furnish an exception to the rule. We think it desirable, therefore, to give an account of an essay in preventive medicine, which, as may be judged from the following, achieved considerable success.

One of us (A. R.) has been in medical charge of a rapidly changing body of men generally numbering about 2,000. Up to the end of 1916 venereal disease was common among them in spite of numerous moral lectures and in spite of adequate provision of what is known as "early treatment"—that is, disinfection after the "contact" has returned to quarters. At the beginning of 1917 a new system was instituted. The men were instructed to disinfect themselves immediately after danger had been incurred—just as a surgeon would disinfect his hands: This procedure is what is known as prophylaxis. It differs from early treatment merely in that the man carries the disinfectant and uses it immediately. Each man who applied was given an ounce of solution of potassium permanganate (at first in a strength of 1 in 2,000, later in a strength of 1 in 1,000), a small swab of cotton-wool, and careful directions. Potassium permanganate was chosen merely because it happened to be the most accessible disinfectant. The rationale of the procedure was fully explained, so that on an emergency the man could purchase the materials from any chemist. During 1917 and 1918 about 20,000 men

passed through the station, and among them precisely seven cases of venereal disease occurred, six of gonorrhoea and one of syphilis. Of the six cases of gonorrhoea, two only were contracted by men on leave, in each case from the man's own wife. Two of the others were drunk and took no precautions. The fifth man was infected the night he arrived, and he also, being unaware of the system, took no precautions. The sixth man practised early treatment an hour after intercourse. The man who acquired syphilis also carried no disinfectant, and used it (permanganate and calomel) two hours after intercourse. He had a long prepuce, and therefore a sensitive glans, and probably did not—probably could not—rub in the calomel vigorously.

The other of us (P. H. B.) commenced prophylaxis against venereal disease in the Royal Navy in 1907. Some eighteen months ago he took over medical charge of an establishment numbering over 2,000 officers and men. The amount of venereal disease, and especially gonorrhoea, was considerable, and it was recognized that of the men who stated they had used the so-called "dreadnoughts" some 40 per cent. contracted the disease. It thus became evident that nargol jelly as a preventive was practically inert. For the past nine months the method of immediate prophylaxis by means of the application of a solution of potassium permanganate (1 in 1,000) has been employed, with results as striking as those mentioned above in the case of the soldiers. Not a single case of gonorrhoea occurred amongst those employing this method, and only one of syphilis. This latter made the application about six hours after exposure to infection, and may therefore be counted out. Unfortunately the navy is a very conservative body, and many men still persist in sticking to the "dreadnoughts." But in lectures given on the subject of prophylaxis men are gradually being convinced of the simplicity and efficacy of immediate prophylaxis. The calomel cream is still reserved for those who have omitted to carry the permanganate solution on their persons, as it seems likely that the former affords some protection, even if an hour or two has elapsed since the risk of infection has been run.

It will be seen that no man, who followed instructions and disinfected himself immediately, acquired disease. Evidently the time element is of extreme importance. Probably there is no special virtue in potassium permanganate. Any other active antiseptic would be equally effective. But permanganate is the cheapest disinfectant and the best known to the public, the least poisonous, and least irritating.

PROFLAVINE OLEATE IN THE TREATMENT OF OPEN WOUNDS.

BY

COMYNS BERKELEY, M.A., M.D., M.C. CANTAB., F.R.C.P.,

AND

VICTOR BONNEY, M.S., M.D., B.Sc. LOND., F.R.C.S.,
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AT CLACTON-ON-SEA.

WE desire to draw attention to the value of proflavine oleate in the treatment of certain war wounds, notably those in which an exceedingly tender raw surface of considerable extent exists, the dressing of which is productive of acute pain. Such wounds are typically seen in amputation stumps, either without flaps or with flaps left unsutured, and before the process of granulation has set in. In many of these cases superficial sloughing is going on, and the immediate edges of the adjacent skin are reddish, swollen, and indurated. These wounds are exquisitely sensitive, and the removal from them of an adherent dressing is an agonizing process to the patient. In many instances these men are very ill, and their fortitude has been broken by the combined effects of shock, haemorrhage, toxic absorption, and the suffering occasioned thereby.

The dressing with which such patients usually arrive is of gauze soaked in some antiseptic in watery solution. The water soon evaporates and the gauze adheres tightly to the raw surface. This disadvantage is obviated by the use of proflavine oleate.*

*The preparation consists of 1 per cent. proflavine oleate contained in an ointment of suitable consistence, which is made up of paraffin and calcium carbonate in about equal parts by weight. For the production of proflavine oleate in quantity sufficient for clinical use we are indebted to Messrs. Boots, Nottingham.

The method we have adopted consists in either spreading a thick layer of the oleate ointment on a single thickness of white gauze and then applying it to the wound, or spreading the oleate direct on to the surface of the wound and then covering it with a single layer of gauze. This dressing does not need to be changed for several days, and, when it is removed, strips off from the sensitive surface without any dragging or pain. It is equally applicable to any large flat-surfaced wounds, such as those left after wholesale excision of the thigh or buttock muscles, and so forth.

We have used this dressing continuously until granulation was complete; the process appeared to occur normally, no retardation or deficiency of formation of granulation tissue being observed. It has the advantage that it adheres sufficiently of itself and requires no bandage or pad to retain it in contact with the wound. The injured part can therefore, except for its covering of proflavine oleate gauze, be left fully exposed to the air under a bed cradle covered with a layer of butter muslin.

We would suggest that after all operations in which a flat raw surface is necessarily left, the wound should, from the first, be dressed with proflavine oleate, in the manner we describe.

NOTE ON THE CHEMICAL AND ANTISEPTIC PROPERTIES OF PROFLAVINE OLEATE.

By C. H. BROWNING, M.D., D.P.H.,

Director of the Bland-Sutton Institute of Pathology, Middlesex Hospital.

Proflavine oleate is the oleic acid salt of 3,6-diamino-acridine (the sulphate of this base being the water-soluble proflavine which has already been employed as an antiseptic in wounds). This compound is one of various salts prepared by Dr. E. L. Kennaway of this department with a view to obtaining flavine derivatives whose chemical and physical properties should fit them for special uses. Proflavine oleate is comparatively insoluble in water; but when this substance or the ointment containing it is shaken with serum the latter dissolves sufficient of the compound to acquire marked antiseptic properties. Thus the use of proflavine in the form of oleate enables a "dépôt" of antiseptic to be placed at the disposal of the tissues.

SOME EXPERIENCES OF THE RECENT INFLUENZA EPIDEMIC IN BRISTOL.

BY

JOHN W. TAYLOR, M.D., Ch.B., M.R.C.S.,
L.R.C.P. LOND.

OVER 400 cases of influenza came under my care during the recent epidemic in Bristol.

Civil Cases.

I first noticed what appeared to be cases of influenza in civil practice at the end of May, 1918. The patients, who complained of pain in the limbs, feverishness, and slight catarrh, recovered in a few days. In June the same symptoms were noted, with more fever. From July onwards the cases presented more marked pyrexia, and it appeared that three distinct types could be distinguished:

1. Very sudden onset; rapid occurrence of what may be described as acute bronchiolitis; oedema of the lungs, followed by death in two or three days.
2. Influenza, uncomplicated; slow recovery, followed by debility.
3. Influenza, with pneumonia, mostly bronchopneumonia, which ensued after four or five days, followed in some cases by death, but usually by recovery with protracted convalescence.

There were three cases of the first type, two in July, one in October; all died.

There were over 60 cases in civil practice in July; they included six of pneumonia with two deaths; the deaths were of Type 1. From July 31st, 1918, to January 17th, 1919, over 200 cases were treated in my civil practice; of these, 38 developed pneumonia; there were eight deaths, two of which occurred in hospital. The total number of cases was greater than 200, but the number of deaths is correct.

The patients were largely of the artisan class, living in small rooms in a somewhat crowded district. For the most part isolation at home was impossible; there were many instances of a whole family being struck down, the incubation period ranging from a few hours to two or three days—in most cases a few hours. Many apparently weak individuals recovered and the more robust succumbed.

Several phthisical patients recovered, and similar fortune attended some cardiac cases. Two cases of acute cardiac dilatation occurred after the patients had resumed their occupations; both were examples of organic disease previously existing; both recovered ultimately.

Epistaxis was a not infrequent symptom; three cases required plugging. The help afforded by the health nurses, and the possibility of removal of bad cases to the city hospitals, were of great value.

Up to the end of July salicylate was generally given. Strychnine was useful in pneumonia; quinine was not used; alcohol was of value in suitable cases, but entirely withheld in convalescence. Oxygen was useful. No vaccines were used.

Summary of Civil Cases.—The total number of civil cases was over 270; pneumonia occurred in 44, 15 were removed to municipal hospitals and 3 to other hospitals. The deaths numbered 10.

Military Cases.

During this time I was engaged as Civilian Medical Practitioner at the White City Barracks, Bristol. There were 130 cases of influenza amongst the troops there. They presented somewhat similar features to those in my civil practice; cases I have designated as Type 1 were absent, and there were no deaths. In the early stages of the epidemic the cases presented, on the whole, a fairly high pyrexia, but recoveries were rapid and without any marked after-effects. Salicylate proved most effective in these early cases. Until June the camp hospital consisted of a wooden hutment, well ventilated, but inadequate for acute conditions or illness of any duration; it only served for very temporary accommodation. In June the new hospital was ready. Its construction and equipment, liberally supplied by the authorities, were quite sufficient for these cases, and so relieved other and more important centres much occupied at that time with the exigencies of the military situation.

On admittance patients were placed in the ward reserved for acute cases, and were not removed into the general ward until the temperature had remained normal for at least forty-eight hours, other things being equal. The infection did not spread to the general ward.

The worst cases occurred in October and November. There were twelve of pneumonia (bronchopneumonic type, scattered over both lungs) and one had a large amount of pleuritic effusion. All cases recovered.

One man showed signs of severe streptococcal infection with great prostration; this man had V.D.H. of some years' standing, after rheumatic fever. He had prolonged haemoptysis, and for some days his condition was hopeless; the urine was almost solid with albumin on boiling.

His illness began on October 30th, 1918, with a temperature of 100°, a much less severe onset than many lighter cases. After being up a fortnight he developed acute cardiac dilatation with rapid pulse and extension of cardiac dullness on December 7th. Suitable treatment proved availing, the albumin disappeared, and he is now walking about. No growth was obtained from a blood culture, which, unfortunately, was taken rather late in his illness; the Widal reaction was negative; he was inoculated in November, 1917.

Six officers, removed elsewhere, are not included in the record. They all recovered. One had a streptococcal infection of the throat, with much oedema; one was a relapse after a first attack three weeks previously.

From the onset of the epidemic all men on sick parade were treated with nasal and throat spraying with potassium permanganate and saline, and all troops warned to report if feeling the slightest symptoms of illness. Later, when the epidemic assumed a more serious aspect, thymol solution was used in Rogers's coarse crystal spray. All who slept out were so treated; the hospital and billets were daily sprayed with cresyl. Of nine women employed in the offices three acquired influenza and recovered. One female attendant in the officers' mess suffered, and out of ten in the canteen three had influenza mildly, and all recovered.

No vaccines were used either for prophylaxis or treatment. Four of the hospital orderlies were affected; one

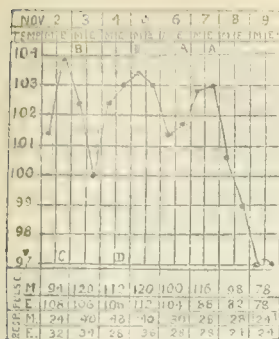


CHART 3.—A, Serum 5 c.cm. B, Serum 10 c.cm. C, Ninth day of illness; consolidation of right base. D, Consolidation of left base.

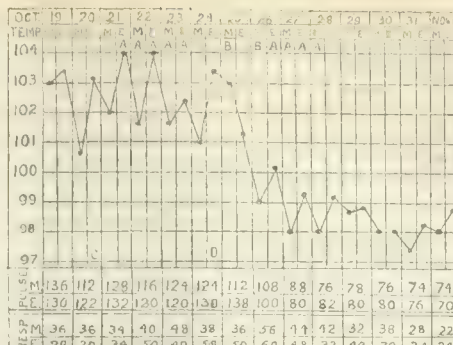


CHART 4.—A, Serum 5 c.cm. B, Serum 10 c.cm. C, Generalized bronchitis and consolidation of left base. D, Consolidation of right base.

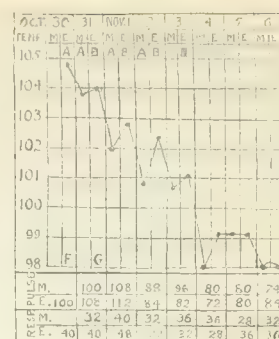


CHART 5.—A, Serum 5 c.cm. B, Serum 10 c.cm. C, Ninth day of illness. D, Consolidation of both bases.

CHARTS ILLUSTRATING THE EFFECT OF SERUM TREATMENT IN CASES UNDER GROUP C.

in the chest. The symptoms and physical signs presented in cases under Group C were those of lobular rather than those of lobar pneumonia; and in some cases, in addition to these, the symptoms and signs of severe capillary bronchitis with well marked cyanosis were predominant; in others the signs of severe toxæmia were well marked. Thirty-seven of our cases had definite signs of consolidation in both lungs.

Charts 3, 4, and 5 illustrate the effect of the serum treatment in these cases. In addition to the serum the ordinary routine treatment of pneumonia was also used.

being so, no time should be lost in commencing treatment with a view to preventing heart failure.

4. The timely injection of 5 c.cm. Pane's antipneumococci serum apparently retarded the development of pulmonary complications and therefore should be used as a prophylactic measure.

5. The use of the serum for this fatal form of pneumonia apparently reduces the temperature and the duration of

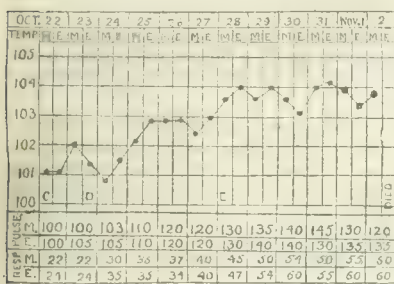


CHART 6.—C, Sixth day of illness. D, Consolidation of left base. E, Consolidation of right base.

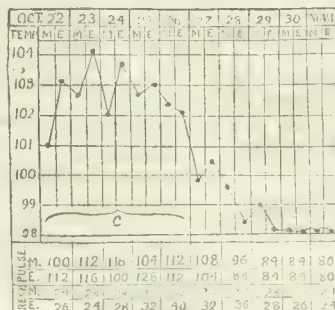


CHART 7.—C, Consolidation of right base.

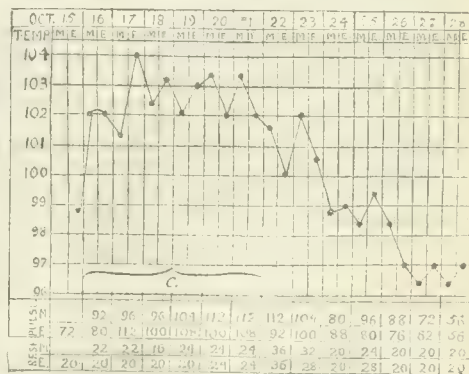


CHART 8.—C, Consolidation of right base.

CHARTS ILLUSTRATING CASES IN WHICH NO SERUM WAS USED.

Charts 6, 7, and 8 illustrate cases in which no serum was used.

In comparing the above charts it is assumed that the effects of the serum are:

1. To lessen the pyrexia; for in most of the cases it was noticed that the pyrexia was reduced by one to two degrees twelve hours after the injection, and the succeeding rise never reached the height of the previous temperature, while in cases untreated by serum the high fever was maintained and exacerbation of the previous temperature occurred on the development of a new patch.

2. Although the serum does not prevent the development of new patches of consolidation yet it seems to shorten the duration of pyrexia due to the new patch or patches, while in cases untreated by serum the duration and course of the disease is uninterrupted.

3. To prevent the occurrence of toxæmia, which only occurred in cases admitted from outside, where no serum was used.

CONCLUSIONS.

The conclusions which may be drawn from these observations are as follows:

1. That the incubation is from thirty to sixty hours, with an average of about forty-eight hours.

2. That immunity can be acquired from a previous attack or from the injection of a suitable vaccine. The duration of this immunity is certainly over three months.

3. The pulmonary complication of this influenza takes the form of a rapidly spreading bronchopneumonia; this

the disease, and prevents the occurrence of other unfavourable complications.

In conclusion I wish to thank Dr. Parker and Dr. Symes for permission to publish the above cases and also for their ungrudging and most valuable advice and guidance.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ON THE USE OF FORMALIN SPRAYS IN CHECKING AN EPIDEMIC OF INFLUENZA.

IN the recent epidemic of influenza among the troops at No. 1 Centre, The College, Isleworth, and among the Q.M.A.A.C. of the Hounslow, Osterley, and Isleworth area, I found that the spraying of all billets, messrooms, and canteens by a fatigue party of eight men under the charge of a non-commissioned officer appeared to be followed by an immediate check in the spread of the epidemic.

At a later date—November 4th—a severe outbreak of the epidemic occurred among the prisoners of war billeted in the rooms of a house at Riddles, Warton Road, Isleworth, and I there had an opportunity of testing this simple method of combating the disease.

The sprays, three in number, which were used twice daily from the second day of the epidemic, were Heppell's hand fly sprays with a capacity of 1½ pints of fluid in

each. Each spray was charged with 6 drachms of 40 per cent. formaldehyde to 1½ pints of water, making approximately a solution and vapour of 1 per cent. formalin.

After the removal of the first batch of 15 cases to hospital on the second day of the epidemic no further cases were removed to hospital until the fifth day, owing to the general shortage of accommodation in the hospitals at the time. Some of these cases in the billet were severe, but all recovered.

Table showing Daily Strength of Prisoners, Number of Cases of Pyrexia, Fresh Cases, and their Disposal.

Date.	Day of Epidemic.	Strength.	No. of Cases of Pyrexia.	Fresh Cases.	Disposal.
Nov. 4...	First	56	3	Nil	Kept in billet.
" 5...	Second	56	15	12	Fifteen cases removed to hospital. Kept in billet.
" 6...	Third	41	20	20	Kept in billet.
" 7...	Fourth	41	6	Nil	Kept in billet.
" 8...	Fifth	41	3	1	Three cases removed to hospital. Kept in billet.
" 9...	Sixth	38	1	1	Kept in billet.
" 10...	Seventh	38	2	1	Kept in billet.
" 11...	Eighth	38	1	Nil	Kept in billet.
" 12...	Ninth	38	Nil	Nil	—

Eighteen of the 56 prisoners had a normal temperature throughout.

Two days after the spraying was commenced the fresh infections dropped from 20 to *nil*, and the epidemic appeared to be suddenly deprived of its strongly infectious character, although single fresh cases occurred from time to time until the eighth day of the epidemic.

These results confirmed my impression that the method had been effective in dealing with the previous outbreak at the College and among the Q.M.A.A.C., and are interesting enough to justify me in specially bringing them to notice.

ANGUS WYLIE, Captain R.A.M.C.,
M.O. 1/c Troops.

Reports of Societies.

APYREXIAL SYMPTOMS OF MALARIA.

At a meeting of the Section of Medicine of the Royal Society of Medicine on January 28th, Major A. F. VOELCKER, R.A.M.C.(T.), being in the chair, Captain GORDON WARD read a paper with the object of providing guidance for those who may be called upon to report (1) as to whether a man shows signs of having recently had an attack of malaria; and (2) as to how far a man is disabled owing to chronic malaria the existence of which is admitted. The paper was based on observations made on over one thousand cases of soldiers under treatment in hospital after their return to France or England. It was believed that the picture of malaria seen in these circumstances was that which will be met with in civil life for some years to come. The following list of symptoms, while not professing to be exhaustive, comprised those most likely to be of value:

1. *Apvrexial Rigor*.—A typical malarial rigor with shaking and hot and sweating stages might occur with no rise of temperature. This would not be often met with, but a knowledge that it did occur might prevent mistakes.

2. *Herpes labialis* was common the day after an acute attack.

3. *Headache*.—This was frontal as a rule, sometimes occipital, almost never vertical. Temporal and frontal headache together were often seen. The patient's statement might often be verified by detecting hyperalgesia at the margins of the area in which pain was felt.

4. *Eye Signs*.—Conjunctivitis, photophobia, and nystagmoid jerking were frequent in acute attacks. In chronic cases, photophobia, pain behind the eyes, and, rarely, strabismus, were seen.

5. *Pharyngitis and Laryngitis*.—Both occurred in association with acute attacks.

6. *Jaundice*.—Some people seemed especially prone to jaundice after attacks of malaria. A slightly yellow colour was suspicious in chronic cases.

7. *Perisplenitis*.—A friction rub might be heard for three to five days over the spleen in a few cases.

8. *Pain in the Side*.—This might be due to pleural adhesions, and be felt most on deep inspiration; a course of deep breathing exercises would often dispel it. It might be due to splenic adhesions, when more complaint was made, if the patients stood for long, or took much exercise. Pain in the side might also depend on hyperalgesia of the skin or muscles, and was then at times bilateral. This was frequent in acute cases.

9. *Tremor*.—A fine tremor of the tongue and hands, rarely of the lips, was common. It might persist in chronic cases, and was then often associated with chronic headache and depression.

10. *Pigmentation*.—At times pigmentation was seen to increase with attacks and diminish between them.

11. *Tachycardia* was common when the patient first got out of bed, and might persist or only be elicited on exertion.

12. *Hyperidrosis* was not infrequent, although not often complained of. Occasionally it was so severe as to constitute a serious disability.

13. *Splenomegaly* was an uncertain sign in cases such as those under consideration. It occurred in indisputable form in severe attacks and when jaundice also was present.

14. *Transient Oedema*.—Local swellings of the nature of giant urticaria were sometimes seen on hands or legs. These lasted a few days only.

15. *Raynaud's Symptoms*.—"Dead" fingers and feet were often seen.

16. *Weakness* was often complained of, but was hard to assess. With the patient under observation it could be done by various tests, but must as a rule be a matter rather of opinion than demonstration.

17. *Blood Changes*.—The presence of the parasite was definite evidence. An increase of eosinophils and the presence of endothelial cells were suggestive. The presence of abnormalities of the red cells, such as polychromasia, anisocytosis, and megalocytosis was important, and strongly suggestive of malaria.

During the course of the ensuing discussion, Colonel ANDREW BALFOUR spoke of the relapses as probably indicating sporulation in internal organs, and agreed as to the occurrence of apyretic rigors. It was difficult to state definitely that all the symptoms mentioned were malarial in origin. A "thick film" method of examination might reveal parasites which would otherwise be missed.

Dr. F. S. LANGMEAD deprecated the common fault of ascribing all symptoms occurring in malarial districts or subjects as due to the malaria *per se*. Mere examination would sometimes reveal a secondary or independent infection. Opportunities for observation of about 10,000 cases led him to agree as to the occasional occurrence of rigors without fever, but accompanied by malaise, headache, sweating, rapid pulse, mental depression, and even vomiting. Every type of rigor occurred, from those without pyrexia up to those with the characteristic attacks. Pigmentation might be so severe as to resemble that of Addison's disease, and with this he associated cases with temporary or persistent low blood pressure and small pulse, possibly ascribable to suprarenal defect. Defective action of this gland and also of the thyroid was suggested by the tachycardia, tremor, and exophthalmos which certainly occurred. Tachycardia might be transient, abating with or soon after an attack; more persistent, but subsiding after several days or weeks; or very protracted and possibly permanent. It was difficult to say when the last two forms were indications that the malaria was merely in abeyance.

GONORRHOEA OF THE GENITO-URINARY PASSAGES.

At a meeting of the Medical Society of London on January 27th, the President, Major A. F. VOELCKER, R.A.M.C.(T.), being in the chair, Brevet Colonel L. W. HARRISON read a paper in which were raised for discussion points connected with the abortive treatment of gonorrhoea, some details of the technique of irrigation and the attack on the gonococcus through the blood stream. Promptitude of action was of the very first importance in treatment, for all the gonococci within a urethra could be

regarded as accessible to antiseptics only on the first day of the disease. Lieut.-Colonel Raffan, A.A.M.C., had informed him that in a period of six months abortive treatment centres in this country were successful in aborting over 2,600 cases of gonorrhoea, and that he agreed with Ballenger in expecting 90 per cent. of successes when treatment commenced on the first day. His own experience had not been so successful, for the cases had not been got under treatment until the second or third day. Of 738 cases, only 129 were considered worth an attempt at aborting, and in 69 of those it failed. In 50 the disease was aborted in a week or ten days. The method now employed is as follows: (1) The parts are thoroughly disinfected with 1 in 2,000 mercury perchloride solution. (2) The urethra is irrigated with 1 in 4,000 solution of potassium permanganate, using a two-way nozzle and about two pints of solution. (3) Ten per cent. argyrol, or 5 per cent. protosil solution is injected into the urethra and retained for twenty minutes. This is repeated twice daily for three to four days, and then the silver compound is omitted, the permanganate irrigation being continued for another four to six days. When the discharge has ceased or become very scanty, and no cocci can be found in it, the treatment is omitted for a day; and if by the tenth day the urethra seems to be perfectly quiet, all treatment is stopped, and the patient told to report again in a week. If the procedure fails to abort the disease, it does not prejudice the cure. There was no question that cases treated by local remedies cleared up much quicker than if general measures were relied upon. Secondary organisms, particularly staphylococci and diphtheroid, quickly appeared, and were probably responsible for keeping up irritation. This was difficult to avoid, and unless the patients were drilled into a habit of preliminary disinfection of the glans, secondary infection of the urethra was sure to be common. After using many kinds of antiseptics for irrigation, his medical officers had settled on either one of the flavine compounds or potassium permanganate, with a weak solution of a silver compound as a variant. The results with flavine had been much the same as those with permanganate, but they were inclined to think the latter rather better. He believed in weak solutions at first, regarding all strongly astringent solutions as interfering with drainage and promoting the formation of periurethral infiltrates. He believed that the best instrument with which to irrigate the urethra was the bladder, provided that certain conditions were fulfilled. Thus, the anterior urethra should be washed first as well as possible by an anterior irrigation, and then the sphincter must be *persuaded* to open by a combination of trickery and pressure of irrigating fluid. The less pressure the better, and he preferred the vessel to be four rather than five feet above the penis.

So far no chemical agent had been found which was a specific for gonorrhoea, and we were left with the more natural method of ousting the gonococcus by increasing the antigonococcal power of the patient's tissues by vaccines. His experience of the vaccine treatment had been mixed. He concluded that the ordinary gonococcal vaccine was a poor antigen, but that occasionally one used a method or a strain which resulted in a vaccine of good antigenic power. He thought that in the complement fixation test lay the best means of testing the antigenic power of a vaccine. A vaccine prepared by Captain Thomson, made from the stroma of the organism but devoid of its toxin, was far better than any he had yet seen administered.

In the course of the discussion Captain D. Thomson said that he had succeeded in detoxicating the vaccine, thus permitting the use of much larger dosage than had formerly been possible—for example, 10,000 millions of cocci could be injected without producing more than a slight reaction. The detoxicated vaccines were very successful in inducing the formation of antistances. If the complement deviation could be raised to 10 or 12 positive no cocci were obtainable from the infected source.

Captain D. LIES, speaking from the clinical point of view, said that he had compared the therapeutic results in cases treated by vaccines with those treated by mercury and subsequently by vaccines, by medicine and irrigation, by mercury alone, and by rest in bed without medicine. The cases treated by vaccine cleared up first and spent the shortest time in hospital, and were characterized by a

greater moderation in symptoms, absence of complications, improvement in general condition and mental outlook, and freedom from relapses. Certain groups of cases were treated with detoxicated vaccines. These included twelve cases complicated by epididymitis, three by prostatic abscess, and two by multiple arthritis. The prostatic cases stood the treatment less well than the epididymitis cases, and showed more focal reaction; in the joint cases there was no focal reaction, and the general reaction was slight. The results were very encouraging. A series of acute cases of five to seven days' duration was then treated, and the results were very striking. By comparing the cases treated by no vaccine, by ordinary vaccine, and by detoxicated vaccine, the value of the last was made obvious, as gauged by the complement deviation, the period preceding disappearance of organisms and discharge, and the duration of stay in hospital. With this treatment local reaction was practically absent, focal reaction slight for one day, and general reaction also slight. Disappearance of cocci, discharge, and symptoms was rapid. No complications developed except slight folliculitis in one case. He was convinced that the treatment was a valuable adjunct to that usually employed.

Captain D. WARSON was in almost complete agreement with Colonel Harrison, and also favoured urethro-vesical lavage. He had given up all attempts at doing good by internal methods, and had seen cases where harm had been done by the use of vaccines. In 307 cases of acute gonorrhoea the average stay in hospital had been 26.8 days. In 222 treated by acriflavine it was 21 days; in 196 of those which were uncomplicated it averaged 19.8 days. The treatment must be continued for ten or twelve days, although the discharge ceased after three or four. The strength employed had been 1 in 4,000 acriflavine with normal saline.

Captain EDWIN DAVIS (U.S.A.), who had worked experimentally with acriflavine, considered it worthy of more thorough trial, for it inhibited growth of gonococci in 1 in 300,000 dilution, did not lose its power in urine, showed a great tendency to penetrate the tissues, and was non-toxic and non-irritating.

GYNAECOLOGICAL OPERATIONS.

A meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on January 10th, with Dr. HENRY JELLETT in the chair.

Dr. BETHEE SOLOMONS read a note on the immediate results of 500 consecutive operations for gynaecological ailments performed at Mercer's Hospital. The main conclusions arrived at were: (1) Skin disinfection is best accomplished by some reagent which hardens the skin. Ether followed by iodine is an excellent method. (2) There is less chance of pulmonary embolism if the patients are encouraged to move about freely in bed after operation. A lengthy stay in bed is inadvisable. To prevent pneumonia and pneumonitis care must be taken that the patients are warmly clad going to or coming from the theatre. (3) Curettage, when carefully performed, is a beneficial operation. (4) Of the many operations described for the cure of backward displacement, the modification of Tod Gilliam's technique described in the paper has been found to be the best. Ventral suspension and the Alexander-Adams operation have their indications, and ventral fixation is satisfactory after the menopause. (5) When it is necessary to treat sterility by operation, it is justifiable to open the abdomen to examine the state of the adnexa, even though there are no marked signs of disease. Tubes of normal size with closed ostia, hydrosalpinges, and very small cysts of the ovary are often discovered.

Dr. Solomon's paper was brought forward as a preliminary to the presentation at a later date of the more important remote effects. The percentage mortality was small, the morbidity was practically *nil*, and the after-results were excellent. In a large number of operations for the cure of sterility there were no deaths. By comparing these results with those obtained by the workers in radium and x rays knowledge could be gained as to which was the better.

Sir WILLIAM SMYLY said he believed in the modified Gilliam operation for backward displacement. Despite the unfortunate results which had been reported following ventral suspension, he still did the operation with satisfactory result. He did not approve of the Alexander-Adams

operation, as he liked to see the inside of the abdomen. He agreed with the main principles of Dr. Solomons's paper.

Dr. ELLA WEBB asked if the cases of pneumonia were recent and if pure ether was the anaesthetic employed. She agreed that great care must be taken to keep the patients warm in going to and coming from the theatre.

Dr. R. T. ROWLETTE said that a definite diagnosis as to malignancy in large ovarian tumours was sometimes impossible. He thought that most papillomatous tumours were malignant. He suggested that chloroform might be reintroduced as an anaesthetic when the doctors came back from France, but he did not welcome the idea.

Dr. ASHE agreed with the author of the paper that it was important to exclude the male as the cause of sterility before operating on the female.

Dr. JELLETT considered Alexander's operation the ideal for all cases of undoubtedly uncomplicated backward displacement, but that it was contraindicated in cases associated with sterility or any possible pelvic complication.

Dr. SOLOMONS, in reply, said that he had had no recent cases of pneumonia. Ether or gas and ether was the anaesthetic employed in his cases, and he would never permit the use of chloroform. He thought many women would be saved unnecessary operations for sterility if the male semen were examined.

Reviews.

GYMNASTICS FOR THE WOUNDED.

*Gymnastic Treatment for Joint and Muscle Disabilities*¹ is an inspiring little book. It is obvious that its author, Colonel DEANE, is himself a gymnast and an enthusiastic believer in the value of gymnastic exercises in the treatment of joint and muscle injuries. His faith is justified by the results which he has attained, some of which are described and illustrated in this book.

In a preface Colonel A. Carless calls attention to the evils following the practice of handing a patient with stiff joints over to the massage department without adequate supervision of the treatment, and without a just appreciation of the limitations of massage. Much precious time is wasted in the continuance of massage long after it should have become evident that no progress was being made. Indeed, it has sometimes occurred to us when watching the gentle stroking and stretching which too often do duty for massage and passive movement that we were witnessing magic rites rather than physiotherapeutic measures.

If the volitional muscular contractions can be called into play, the results will be infinitely greater than from passive treatment, whether it be by massage or electrotherapeutics. Colonel Deane finds that the usual equipment of a military gymnasium is enough for his purposes with a few trifling additions. Games are also of great use. A point which is well brought out is the value of associated movements, and of "the use that can be made of the man's sound limbs to enable him to recover the use of an injured one." It will probably surprise the reader to find to what an extent the ordinary climbing rope can be made useful, and what good results can be got by its use; but the most valuable piece of apparatus of all, in Colonel Deane's opinion, consists of the parallel bars—so much so that he says that, were he restricted to one apparatus, he would unhesitatingly choose this. The great value of flag signalling in forearm and elbow injuries has also been proved. The section dealing with knee troubles is of great interest, and the idea will probably be new to most readers, although it is certainly true, that in many of the exercises often prescribed the greater effect is experienced by the sound knee and leg on which the patient stands, which requires no treatment.

It is not possible in a review to give a complete impression of the teaching in this book, but we recommend every one having an interest in the subject to get a copy. Intelligent enthusiasm and appreciation of its principles should lead the reader a long way along the road which Colonel Deane has so successfully trodden out.

¹ *Gymnastic Treatment for Joint and Muscle Disabilities*. By Brigadier Colonel H. E. Deane, R.A.M.C. London: Henry Frowde, and Hodder and Stoughton. 1918. (Cr. 8vo, pp. 146; 26 figures. 5s. net.)

MUIR AND RITCHIE'S "BACTERIOLOGY."

WE welcome the appearance of the seventh edition of Muir and Ritchie's well known *Manual of Bacteriology*,² which we take to be the best textbook of the subject for students or medical practitioners in any of the civilized—or, for the matter of that, uncivilized also—languages in Europe. Since the previous edition appeared bacteriology has learned a great deal from the war, as is shown by the chapters dealing with tetanus, cerebro-spinal fever, the infection of wounds with anaerobic bacteria, and various intestinal infections. Infectious jaundice due to spirochaetes, and trench fever, whose etiology seems to be in the way of settlement, are also war diseases that receive extensive notice in the volume.

The book does not contain a chapter on the filter-passing virus, but the subject is referred to in the articles on small-pox, rabies, and epidemic poliomyelitis. The authors—wisely, no doubt—do not commit themselves to any definite opinion. The investigation of the subject, however, appears to be making so much progress that even though, as we expect, the eighth edition of the manual may shortly be called for, it will probably be found desirable to deal with the matter at length in it.

The seventh edition now before us has been enriched by the addition of new methods and a number of new illustrations. The authors are to be congratulated on the skill with which they have condensed the best part of the science of medical bacteriology into a well written and readable handbook, which may fairly be regarded as indispensable to the bacteriologist, the pathologist, and the student of medicine.

MILK HYGIENE.

In his *Principles and Practice of Milk Hygiene*³ Professor Louis A. Klein of Philadelphia has succeeded in presenting in concise form the facts and principles which are of importance in the practice of milk hygiene and in describing how they may be applied in the inspection of dairy farms and in the examination of milk. The subject is one in which physiology, chemistry, bacteriology, and sanitary administration are intimately interwoven; it is surveyed by the author in a very fair perspective. American cities have for some years graded their milk supplies into classes, and Professor Klein gives a very full account of the standards that have been employed, including the report for 1917 of the commission on milk standards appointed by the New York Milk Committee; in this report the commission recommend that the bacterial limit for Grade A raw milk should be reduced from 100,000 to 10,000 bacteria per c.cm. The book is the work of a veterinary surgeon, and as such deals in a thoroughly practical manner with all the problems that confront sanitary officials, social workers, and all persons interested in the production of wholesome milk. It is a volume which should be on the bookshelf of every up-to-date farmer, public health official, and lecturer. The paper, print, and illustrations, as well as the subject matter itself, are such that the book can be read with interest and pleasure.

In an excellent little manual, entitled *The Pasteurization of Milk*,⁴ C. H. KILBOURNE, late chief of the division of pasteurizing plants in the New York City Department of Health, treats the subject from the practical standpoint. He has had experience of the use of the different forms of plants for pasteurizing, cooling, and storing milk; he gives a description of them and discusses their efficiency. All concerned with the installation and control of such apparatus will find information in this book which will assist them in making the system safe in practice, for which intelligent supervision is essential.

² *Manual of Bacteriology*. By Robert Muir, M.A., M.D., Sc.D., F.R.S., and James Ritchie, M.A., M.D., F.R.C.P. Edin. Seventh edition. London: H. Frowde, and Hodder and Stoughton. 1919. (Cr. 8vo, pp. xxiv + 753; 200 figures, 6 coloured plates. 16s. net.)

³ *Principles and Practice of Milk Hygiene*. By Louis A. Klein, V.M.D., Professor of Pharmacology and Veterinary Hygiene, School of Veterinary Medicine, University of Pennsylvania. Philadelphia and London: J. B. Lippincott and Co. 1918. (Med. 8vo, pp. x + 529; 41 figures. 12s. 6d. net.)

⁴ *The Pasteurization of Milk from the Practical Viewpoint*. By Charles H. Kilbourne. New York: John Wiley and Sons. London: Chapman and Hall, Ltd. 1916. (Fcap. 8vo, pp. iv + 248; 34 figures. 6s. net.)

NOTES ON BOOKS.

CAPTAIN GARTON'S little book on *Electro-Therapeutics for Military Hospitals*,⁵ written to satisfy a need that one hopes will not much longer press on us, gives a brief but practical account of simple methods of treating paralysis, neuritis, trench feet, and the like by electrical methods. It may be recommended to those in search of an elementary account of the subject.

Dr. LARRIERU⁶ holds that pulmonary tuberculosis is a disease very largely amenable to treatment by drugs, and recommends, in a long pamphlet on the subject, the exhibition of a mixture containing potassium iodide, potassium bromide, and strychnine as its most important constituents. Other drugs are prescribed to meet special emergencies; for the rest, the treatment is on general and hygienic lines. The book may be read in a critical spirit by medical men interested in the treatment of the disease.

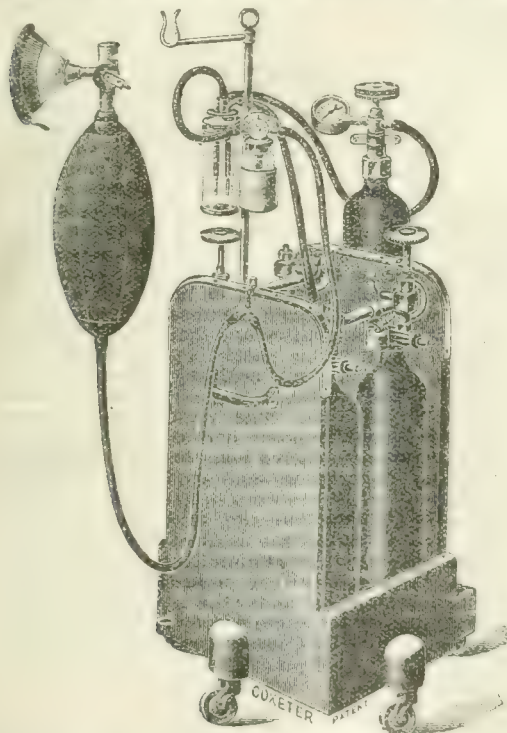
⁵ *Electro-Therapeutics for Military Hospitals*. By Wilfrid Garton, M.R.C.S., L.R.C.P. London: H. K. Lewis and Co., Ltd. 1917. (Cr. 8vo, pp. vii + 48. 2s. 6d. net.)

⁶ *Traitement efficace et pratique de la tuberculose pulmonaire*. Par Dr. J. F. Larrieu, Lauréat de l'Académie de Médecine et de la Faculté de Paris, etc. Paris: Vigot Frères. Petrograde: Ch. Ricker. 1918. (Demy 8vo, pp. xvi + 96.)

MEDICAL AND SURGICAL APPLIANCES.

Nitrous oxide-Oxygen-Ether Outfit.

CAPTAIN H. EDMUND G. BOYLE, R.A.M.C. (T.F.), Anaesthetist to St. Bartholomew's Hospital, writes: The accompanying figure shows one of the patterns (b) of the above machine. The main points are: each cylinder



is provided with a fine adjustment reducing valve (the valves can be fitted to any ordinary English cylinder); the principle of the "sight feed" has been adopted; there is a small spirit lamp for warming the reducing valve to the nitrous oxide cylinder; a pressure gauge is attached to the oxygen cylinder; a small rebreathing bag is attached, together with an ordinary 3-way stopcock and face-piece; an ether bottle is connected up in the circuit. The machine has been made in three sizes: (a) The large size is for work abroad; when fully charged it takes four cylinders of 200 gallons, two of 500 gallons, and one of 40 ft. capacity for oxygen. (b) The next size is meant for work in hospitals at home, and carries four cylinders of nitrous oxide of 200 gallons each, and a 20 ft. cylinder of oxygen. (c) The size for private practice takes four cylinders of 100 gallons, two of nitrous oxide, and two of oxygen. Cylinders of 25 or 50 gallons capacity can be used with this pattern; the stand carrying the "sight feed" bottle and the ether bottle can easily be dismantled and securely stowed away between the cylinders; and there is a covering lid and carrying handle. Types (a) and (b) are on wheels.

These machines are economical in consumption of gas. Eighty gallons of nitrous oxide and 20 gallons of oxygen are usually enough for one hour's continuous anaesthesia. I have now completed over 2,000 administrations with this method, and am able to record over 1,600 administrations by Captain J. F. Trowby and the residents at the 1st London General Hospital, making a total of over 3,600 cases, without any fatality. I desire to thank Captain Geoffrey Marshall, R.A.M.C., for many valuable suggestions with regard to the use of this machine in France.

REPRESENTATION OF THE MEDICAL PROFESSION.

"MASS MEETING" IN LONDON.

WHAT was described as a "mass meeting" of the profession was held at Wigmore Hall on Sunday afternoon, February 2nd. The conveners were the Council of the National Medical Union, and about three hundred were present. The proceedings lasted three and a half hours and were constantly interrupted. Dr. R. FIELDING-OULD, who took the chair, stated that the presence of any member of the profession on the platform must not be taken to mean that he was committed to the official resolutions.

The resolutions on the agenda were two, namely:

1. That in view of the prospective legislation and the proposed establishment of a Ministry of Health, and having regard to the experience of the medical profession at the time of the passing of the National Insurance Acts, the time has arrived when a body representative of the whole profession should be established to watch its interests and be prepared to act in an advisory capacity as occasion demands.
2. That a provisional committee be now formed with the object of securing the election of such a body.

The second resolution, however, though proposed and seconded, was never put to the meeting.

The CHAIRMAN apologized for the absence, owing to ill health and the severity of the weather, of Dr. William Russell of Edinburgh, who had been announced to take the chair. He went on to say that those who had taken the initiative in calling that meeting had always maintained the principle that unity of the profession was the thing to strive after. While they had no wish to compete with any existing body, they felt that steps should be taken at this serious juncture to enable the mass of general practitioners to express their views, to advise, and, if necessary, to criticize the Government on questions of importance to the national health. There had long been a deep-rooted prejudice in the medical profession against taking part in political movements, but in an advancing democracy with socialistic tendencies, for the great body of medical men to stand aloof would be fatal not only to the profession but to the interests of national health. The great mass of general practitioners must be heard, but at present there was no representative body to focus their views. The question was urgent. At that moment there was a small self-constituted body called the Medical Conference dealing with the Government—dealing with the interests of medical men. Had any one heard of it? (Cries of "No.") That was the kind of thing they who had called that meeting wished to stop.

Dr. V. T. GREENYER, in moving the first resolution, said that the medical profession was divided into two classes, the active medico-political and the non-active. The former had by this time crystallized themselves into different bodies. There had been experience of an Association which, according to the best of its knowledge, had adopted a measure of representation that in the past had been successful to a certain extent. It was questionable, however, whether that method was sufficient for the future. Among other medico-political bodies, in addition to the British Medical Association, were the Medico-Political Union, the National Medical Union, the Association of Medical Women, and the body that was the outcome of the meeting on October 1st last at Steinway Hall. These bodies would form schools for the future training of medico-political members of the profession. The only way in which a proper representation could be secured was by the education of the particular man chosen to be a representative. The great peril in medico-political activity lay in the difficulty of distinguishing between the men who had axes to grind and those who had not. The British Medical Association had sacrificed the confidence of the profession. (Prolonged applause and some dissent.) Personally he could not forget the January of 1913. The rank and file of the profession had had to bear the ignominy of that great *débâcle*. Between 1906 and 1913

the British Medical Association was a body that all admired. Its pitch of organization was high. It could look back to many glorious annual meetings, when representatives of the whole world of medicine met in harmony. Those were splendid days; when the Association held the entire confidence of the profession. But the Association sacrificed its opportunity, and then it said the rank and file had done it. What happened was that the confidence of the rank and file of the profession was such that they obeyed those secret orders which came down to them, "Come on to the panel or you will be ruined." Now the rank and file of the profession had allowed things to die down. But had there been any attempt to restore the confidence? If not, the time had arrived when a representative body should be formed. The National Medical Union stood by the resolution which, he believed, had not been rescinded from the minutes of the British Medical Association, that the working of the Insurance Act was derogatory. But the Union possessed neither the machinery nor the brains to justify it in coming forward as representing the medical profession, nor was it anxious for that position. The Medico-Political Union had taken up what it considered to be an advanced position, but the profession was not at one with regard to trade unionism. He could wish that the Union was a little more humble, but it was an excellent union, though not capable of representing the profession as a whole. Above all things, a body was needed to protect the economic side of the profession.

Dr. G. P. JOY, in seconding the resolution, said that the Government of this country in 1913 was guilty of an abuse of power in forcing a sufficient number of medical men to work the National Insurance Act. This was done in despite of the sound instincts of the profession, which strongly condemned the conditions of service. At the present moment the tendency was to underrate the profession as a fighting force, and it was in danger of being driven where the politicians and place-hunters chose. Medical men had not had justice from the State because they had lacked cohesion. The remedy was strong, straight leadership. Their hope of securing this lay in the creation of a body of chosen representatives to voice the aspirations, the needs, and the will of the profession. The immediate problem was to determine how best to make the voice of the profession heard.

Dr. EDWIN SMITH, in supporting the resolution, entered into detail, which called forth impatient interruptions from the audience, with regard to the reduction of the notification fee for infectious diseases from 2s. 6d. to 1s.

Sir WATSON CHEYNE, M.P., said he was not going to speak on politics. The question was whether it was right that some representative body should be formed to look after the medical affairs of the nation. He suggested that for the sake of peace and quietness the reference to the Insurance Acts might be dropped out of the resolution. It was done with, and they had got to put up with it. (Loud cries of "No.") There were various reasons why medical practitioners were not sufficiently represented in the affairs of the nation. Most of the medico-political bodies had gone wrong by thinking of minor matters and not of what was best for the nation—because, after all, what was best for the nation was in the long run best for the profession. Then there was the tendency to trade unionism; that would not go down at all. ("Oh!") They were above trade unionism. (A voice: "What is the alternative?") He was not going to argue it; he was only telling them. (Laughter.) The first remedy suggested was to get more medical men in Parliament. That was all very well if the medical men in Parliament all thought in the same way. It was not so much a question of getting more medical men into Parliament as of informing and uniting those who were there. He had been in Parliament for eighteen months, and it had fallen on his shoulders to try to raise by such parliamentary action as he could the level of the medical profession. He had done his best, but he could have done better if he had had some body at his back from whom he could get particulars as to different kinds of practices and working conditions. A body was wanted to train up medical members of Parliament in the way they ought to go. He was uncertain many a time whether he ought to interfere when a bill came forward embodying a medical matter. The British Medical Association had helped him very much, though from the tone of the meeting it might be thought that it gave no help at all. But at the same time he was not a delegate for the Association, and he would like to get a rather bigger view than the Association's. Much that had been said against the Association that day was rather unjust. He himself resigned his membership of the Association some years ago on account of its tendency to

trade unionism. But it was one of the bodies that took rather a parochial view. He had suggested at Steinway Hall what he was suggesting that day, and he was glad to know that the idea had grown, and that the Medical Parliamentary Committee had taken it in hand, had proceeded to co-opt members from different bodies, totalling a greater number than the original members, and he hoped that in time it would represent every side of the profession.

Major E. R. FOTHERGILL said that the *débâcle* of 1913 was not caused by the British Medical Association, but by the scum of the profession who went behind their brethren to try to come to terms. (Interruption.) A committee was already in existence, had been in touch with Dr. Addison, had seen the drafts of his bill, was consulted by him before he first introduced the bill, and had itself consulted the profession through the Divisions of the British Medical Association. This body had been in existence for eighteen months. Would that meeting, instead of setting up a new body, not do better to transfer its support to a body already existing? Had the British Medical Association waited until now they might certainly have condemned it, but it had been at work on the question of the forthcoming legislation, actively for two years, and passively for thirty years before that. Was the profession to waste time in forming a new body to start *de novo*, when it was open to it to stimulate an existing body and see that it did its work?

Dr. H. B. BRACKENBURY hoped the meeting would negative the resolution, not because there was anything illogical or improper in its wording, but simply because of the way in which it had been put to the meeting. The gist of the proposition was that there were several antagonistic bodies within the profession, and therefore they must proceed to form another. The better way of proceeding would be to find out whether there was among these bodies any one which represented a considerable proportion of the profession, which had a decent history, which had acquired some influence, and which could be made a proper body to represent them. They could never have a body representative of the whole profession. There were large numbers of the profession who would never join any body at all. Beyond this, they must always have in medical politics, as well as in scientific subjects, antagonistic views which would remain antagonistic. The ideal was to have some arrangement by which the great central body of opinion should be represented as largely as possible. He agreed that the British Medical Association made several gigantic mistakes in 1913. Up to that year he himself was an ordinary member of the Association. He wrote out his resignation and took it to the pillar-box, and then he put it in his pocket again, and determined that instead of being an ordinary member he would become an active member and do what he could to improve the Association. The remedy for the state of affairs to which the proposer had alluded was surely to take the most representative body in the profession—the British Medical Association—and see whether these other bodies could not be got to work in harmony with it. The Association had this advantage, that it contained more than half the members of the medical profession, and that through its Insurance Acts Committee it represented the whole of the members of the profession—fourteen thousand—who were working under the Insurance Acts. (No.) It might not represent them properly, but it represented them, for all the Panel Committees of the country were elected by all the panel practitioners of the country, and those Panel Committees elected a majority of the members of the Insurance Acts Committee.

Mr. E. B. TURNER said that to start another body would be to help to disunite the profession. That would be to play into the hands of the enemy, by which he meant the Government. Furthermore, the setting up of a new committee would be no effective step so far as the proposed legislation was concerned. The Ministry of Health Bill was in draft; it would go through the House in a hurry, and the immediate thing to do was to see that on the committees which were advisory to the Minister there was proper representation of the profession. He considered that he himself represented a very large number of persons because he was elected to the Council of the British Medical Association from the Annual Representative Meeting. He was certain that the best thing that the meeting could do would be to make that its representative body; if it wanted to alter it there were voters enough present to affect the London representation. He urged that the organization of the Association be used—its Divisions, its money, its name, and its influence with the Government.

Captain GUEST strongly protested against what he called the insulting remark of Major Fothergill with regard to the scum of the profession. That remark should be apologized

for. What he really meant was not the scum of the profession, but the men in the profession who were poor, and it was not fair in any meeting of professional men and women that their brethren should be sneered at who were poor. Speaking as a Labour candidate at the last election he declared that there would never be any organization worth anything unless it started on the basis of organizing the means of livelihood of the profession. The first plank of any organization must be a decent living wage for all men in that profession. The British Medical Association failed because it had no funds to protect its members against victimization. The organization to be set up must have a fund to protect members of the profession against victimization, and it must be prepared if necessary to use the trade union weapon of the strike. (Applause.)

Dr. C. F. T. SCOTT declared that it was Sir Watson Cheyne who was parochial and not the British Medical Association; he had proved himself so parochial as to withdraw from it. The British Medical Association had the means of giving effective force to the views of the profession, and if all joined the Association the profession would know exactly where it stood. He believed that the Association had learnt its lesson.

Dr. GREENYER, in replying to the discussion, said that he and those associated with him were taking this action because they realized that the so-called scum of the profession had not hitherto found representation. That was the very reason why he asked for representation for the various bodies he had mentioned in his opening remarks. (Laughter.) He disclaimed antagonism to the British Medical Association, and said they hoped to include representatives from that body.

A division on the first resolution then took place, when there voted:

In favour	..	..	..	..	182
Against	..	..	..	..	93

The second resolution, setting up a provisional committee with the object of securing the election of a body representative of the whole profession, was then formally proposed by Dr. EDWIN SMITH and seconded by Dr. A. MORISON.

Dr. SQUIRE SPRIGGE moved an amendment:

That this meeting of the medical profession, in view of the urgency arising from contemplated legislation, approves the recognition of the Medical Parliamentary Committee as a provisional committee, and that that Committee should be entrusted with drawing up the constitution of a body to develop along the indicated lines.

He said that the adjectives used already in describing what qualifications the ideal body must possess embarrassed him in putting forward this amendment, for he was not certain that the Medical Parliamentary Committee possessed all the desiderata. The pith of the amendment was in the words, "the urgency arising from contemplated legislation." The meeting had been told that the draft bill in Dr. Addison's hands was going to be one of the very first measures pressed forward by Parliament. At the present moment, of twenty-one names of members of the Medical Parliamentary Committee put before him, fourteen represented general practitioners. The whole idea of the Medical Parliamentary Committee, as it had been conceived and since worked, was that the general practitioner should be consulted, and that his views, and those of other sections of the profession, should be adequately represented and placed before the medical members of Parliament, who in their turn promised to act along the indications given. If the committee had enough flexibility of organization to become the nucleus of a body representative of the whole profession, then it had every opportunity of placing before members of Parliament representative views on matters affecting the profession. Such a committee ought to be really inclusive, and in that event a good deal of the present differences would disappear on frank discussion, and a *modus vivendi* would become obtainable. He could conceive of a really strong Parliamentary Committee being very educational, in the first place of itself, and then of the profession, of members of Parliament, and of the nation, though not, perhaps, in quite that order. He did not ask the meeting to accept the committee as it was, but only as the nucleus of what it might and ought to be. He absolutely dissociated himself from the virulent attacks upon the British Medical Association. He knew the good that the Association had done, he was not blind to its mistakes, and for some of those mistakes he saw the reason, while others had caused him bewilderment. And the strongest argument he could bring forward in favour of constituting the Parliamentary Committee as the nucleus of the desired organization fell from Major Fothergill's lips when he said that they wanted a body to "ginger" up the British Medical Association.

Dr. ARTHUR LATHAM, in seconding the amendment, said that the Committee was temporary, and had no desire to be permanent. It was formed as the outcome of the open meeting on October 1st. It consisted now of thirty-five members. A number of representative bodies had been asked to nominate delegates to sit on the Committee, and it had been more successful in getting responses to this invitation than, he thought, any other body of the kind. Twelve organizations in the profession had appointed delegates. The British Medical Association and the Royal Colleges had been asked to send delegates, but hitherto they had declined; perhaps they did not thoroughly realize the objective in view. The Committee gave help to medical men who were candidates at the last election. It had secured the sympathetic help of one of the most keen and educated lobbyists in the House of Commons. It had always had a good reception from Dr. Addison, and had obtained from the Prime Minister a promise to receive a deputation as soon as he was free. If appointed to act upon the decision of the meeting that day it was intended to draw up a scheme which would be submitted to the profession as a whole.

Dr. C. BUTTAR read the names of the Medical Parliamentary Committee in response to a demand from the audience. At the end of his recital of the names, Dr. Buttar was asked from several parts of the hall, "Who elected them?"

Dr. C. O. HAWTHORNE said that this amendment raised a serious question. The meeting had been summoned for the purpose of passing a resolution to establish a new representative body, and when this general resolution was carried there was moved and seconded from the platform in a purely formal manner a further resolution that a committee be constituted. Thereupon, also from the platform, this amendment was moved and seconded.

The CHAIRMAN pointed out that a seat on the platform committed no gentleman to support of the original resolutions.

Dr. HAWTHORNE thought it very significant that the second resolution was only moved formally.

Dr. EDWIN SMITH, the mover of the resolution, showed the notes of the speech he had prepared in support of the resolution. His determination to move it formally was due to the lateness of the hour.

Dr. HAWTHORNE still felt a suspicion that the meeting was organized, not with a view to forming a new body, but to supporting the Medical Parliamentary Committee.

The CHAIRMAN denied that there was any collusion.

Dr. HAWTHORNE said that the fact remained that the meeting had passed a resolution to constitute a new body, and was now asked to transfer its benediction to an organization already existing. He intended, further, to vote against this amendment because of the way the Medical Parliamentary Committee was constituted. (Hear, hear.) It was charged with the duty of reporting to the profession some scheme by means of which the election of medical men to the House of Commons could be secured. It had not made a report to the profession. While the Committee had recommended candidates for the last election, it had carefully abstained from recommending any constituency to elect them.

Dr. E. G. NEWELL, a member of the Medico-Political Union, criticized the validity of the election and the representative character of the Committee.

Dr. J. G. FITZGERALD suggested, amid great interruption, that nine-tenths of the members of the Medical Parliamentary Committee were members of the British Medical Association.

Dr. LATHAM, in a personal explanation, denied that there was collusion between the Parliamentary Committee and the organizers of that gathering. The Committee knew nothing of the meeting until it was announced in the press.

The amendment recognizing the Medical Parliamentary Committee as the provisional committee to carry out the terms of the first resolution was then put and lost. There voted:

In favour	..	..	..	..	87
Against	..	..	..	..	105

Dr. J. A. ANGUS then moved:

That in the opinion of this meeting no committee or organization of medical men is capable of effectively representing the interests of the profession unless it is a registered medical trade union.

He said that it was evident from the temper of the meeting that the idea of a trade union was making great headway. The medical profession had been denied and flouted continually. The British Medical Association had done much,

but that much could only be little because it was not a trade union, and could not use its funds for trade union propaganda, or for the support of the men who obeyed its behests. No committee would have effective means of forcing their views upon the Government. In every constituency a medico-political association must be instituted.

Dr. NEWELL seconded the amendment.

Major W. A. CHAPPLE thought it rather dangerous to follow Dr. Angus's line of argument. Trade unions were effective because they had the numbers and because their weapon was the strike. Were medical men prepared to use that weapon? (Cries of "Yes.") If all other methods failed, the medical profession might be driven into that position, but meanwhile he thought they could depend much more upon the righteousness of their cause—(The remainder of the sentence was lost in uproar.)

Dr. A. MORISON, who also spoke amid interruption, the Chairman having several times to appeal for order, asked whether such ideals as had been voiced by Dr. Angus were those which ought to inspire a liberal profession. Such a policy, followed out to the end, would bring the burden they deserved.

A division on the amendment was then taken and there voted:

In favour of Dr. Angus's amendment	..	71
Against .. .. .	..	73

The announcement of the figures was received with vociferous demands for a recount, which the Chairman refused because in the interval some members had left the meeting. Dr. Angus declared that only two members had left, and repeated his demand for a recount, amid great disturbance. Mr. E. B. Turner, Dr. Greenyer, and others attempted to speak, but failed to get a hearing, and the Chairman persisting in his refusal to grant a recount, and the noise continuing, he left the chair, and the meeting broke up.

THE MINISTRY OF HEALTH.

DEMONSTRATION IN LONDON.

A DEMONSTRATION in support of the early establishment of the Ministry of Health was held in Kingsway Hall, London, on February 3rd, the eve of the opening of Parliament. Sir KINGSLEY WOOD, M.P., presided over a large gathering, and was supported by Dr. Addison, President of the Local Government Board, the Viscountess Rhondda, Sir Bertrand Dawson, and several members of Parliament and prominent medical men.

The CHAIRMAN read a message from the Prime Minister, who wished the meeting every success and expressed his belief in the object which the meeting had in view.

Dr. ADDISON, who spoke for the first time as the holder of his present office, began by paying a tribute to Lord Rhondda, dwelling upon his enthusiasm in this matter, his clearness of vision, and his determination. There could be no worthier memorial to Lord Rhondda than the rapid passage of the bill through Parliament. Dr. Addison said that he took his office on the understanding that this bill was going to be passed through as rapidly as possible. Holding up a large placard, he said that he intended to publish it as a Parliamentary White Paper; it was a record of the twenty-one Government departments, and the more than two thousand local authorities at present doing odds and ends of health work. That was a justification for a co-ordinating Ministry. He could name certain public services of the most essential character which had been delayed for years from coming into full activity in consequence of quite genuine departmental disputes; and with two thousand local authorities, with their overlapping areas and interests, it was evident that the divided counsels, the disconnected effort, and the various rivalries which existed at the centre would be reflected all over the country. The first step in the new proposals was to create a Ministry; the second was to formulate its programme, for the Ministry was not an end, but only an instrument. He had no doubt that the proposals would be welcomed, but they would need all the help and goodwill of the local authorities, the insurance organizations, and the medical and nursing services, because, if a rational scheme was to mature, it must be on comprehensive lines, and inevitably this would not please everybody who was engaged in administration. Great measures might be held up, not by departmental entanglements at head quarters, but by local differences, and he appealed, therefore, to local administrators to "lift their eyes above the nozzle of the parish pump." The proposals of the bill were familiar, and he

anticipated few changes during its passage. The governing consideration was that they must have a body of men upon whom they could fix responsibility, and then it would be the business of those men to formulate a programme. A feature of the bill which had given rise to more difficulty than any other was the setting up of an advisory council. It was necessary to devise machinery whereby professional and public opinion would make its influence felt in the moulding of policies, and he was determined that the advisory council should be a reality. He was not afraid of any minister staffing such a council with Bolsheviks; often these outside people acted as a drag upon the wheels of a too enthusiastic minister. The provision of skilled, well-trained, and properly paid nurses and midwives, and the organization of facilities for diagnosis, were essential parts of the measure. He received half a dozen letters a day from medical men asking whether a State medical service was to be instituted. Nobody need be alarmed. The Government had to make use of every branch of the existing service, and the traditions of the medical profession or of the British public were not to be uprooted by any edict a Ministry of Health might issue. He thought it possible to provide the necessary services—with laboratory, clinical and nursing facilities—without detriment to the susceptibilities or proper ambitions of any one. The keynote would be prevention, and in this connexion the responsibility for housing must attach to the Ministry of Health. He proposed to ask for authority to deal in a common-sense way with restricting by-laws and other limiting arrangements. He added that the Ministry would not propose to proceed by compulsion. The people only needed to have practical schemes put before them to enlist their support.

Lady RHONDDA pleaded that, in addition to the other advisory councils, a council composed of ordinary wives and mothers should be established in connexion with the Ministry, both to learn and to advise, and to act as a link with the homes of the country.

Sir BERTRAND DAWSON said that the doctor was a vital part of the structure which had to be built. It was most important to train the general practitioner and give him opportunity for doing his best work. It was of some importance, since the interests of the public and of the doctors were really identical, to know what was the attitude of the medical profession towards this movement. The attitude was one of hearty sympathy as to the aims of the new Ministry, but as to the methods it was one of watchfulness tinged by doubt. The reasons were not far to seek. Medical men, like other citizens, left their all to go to the war, and they had now come back and were faced with the task of building up their practices afresh. It was necessary to think of the doctor's years of apprenticeship, of his struggles while fighting his way up, of his round of busy days and disturbed nights; and it was little wonder if he hesitated over any scheme which might possibly make his working conditions more difficult. Furthermore, each year the work of medicine became more complex and required larger equipment. The doctor also wanted greater freedom from lay control. The principle of medical guidance in medical affairs had already been recognized by the President of the Local Government Board in introducing the bill last session. Proceeding to the more public aspects of the question, Sir Bertrand said that the real test of success of the policy of a Ministry of Health would lie with the local communities—the counties and boroughs. And just as they had fabric and equipment provided for education in the shape of the school, so they would need to bring together all their activities in the health centre. By such united effort they would not only make for working efficiency, but would form a school of thought and encouragement and public spirit. By bringing together the preventive and curative parts of medicine an end would also be put to an artificial separation. In his opinion the health centre could go a step further; they wanted something in the centre which would convey the idea of health in its active rather than in its passive conception. Health denoted vitality, endurance, and joy, and that must be provided for in the organization. He suggested the provision of open spaces in connexion with the clinics where physical culture and games could be carried on.

A resolution was carried, on the proposition of Sir ALFRED WARREN, M.P., seconded by Mr. W. A. APPLETON, secretary of the General Federation of Trades Unions, calling upon the Government to give early facilities for passing the measure, and also to incorporate in the bill a definite declaration that the non-medical side of the Poor Law and other non-health functions should be dissociated at an early date from the Health Ministry.

British Medical Journal.

SATURDAY, FEBRUARY 8TH, 1919.

THE TREATMENT OF WOUND SHOCK.

THE publication in full of Professor Bayliss's lectures on the treatment of wound shock serves as a reminder of the part played in the war by the science of physiology. In all phases of the common activity of the nation evoked by this supreme struggle, the solution of difficulties and the adaptation necessary to ensure success have commonly been provided in the first place, not by the so-called practical man, but by the laboratory worker. It is true that the accusation of scientific aloofness, which in the past has frequently been brought against physiology in this country, has been due in the main to a failure to appreciate the constant and growing influence exercised on the practice of medicine by every addition to our knowledge of the normal workings of the healthy body. It is true also that the part played by physiology in the war is still too scantily recognized, though it has ranged from the preservation of the aviator to the regulation of food, from gas defence and treatment of gas poisoning to the prevention of scurvy among the troops. The researches, of which an account is given in the volume entitled *Intravenous Injection in Wound Shock*,¹ carried out by the most learned physiologist of the day, and belonging to a subject hardly mentioned in the textbooks of ten years ago, have at last not only thrown light on the long-disputed nature and causation of wound shock, but have placed in the surgeon's hands an effective method of treatment and prevention.

An abstract, obligingly furnished by the author himself, of the two lectures given under the Oliver-Sharpey foundation, before the Royal College of Physicians, in May, 1918, was published in our columns at the time.² The book before us gives the substance of the lectures at greater length and includes some further evidence as to the nature of shock, derived from experiments performed subsequent to their delivery. Professor Bayliss deals in the first place with the relation of shock to haemorrhage. He shows that in shock, as in haemorrhage, the essential feature is a deficiency of blood in circulation. In most cases, in fact, shock is complicated with haemorrhage of more or less gravity, but in every case the treatment is the same—namely, the restoration so far as possible of the volume of the circulating fluid, so that the circulation may be maintained and the supply of oxygen to the tissues kept up.

Since every rational therapeutic must depend on the knowledge of the causation of the condition which it is desired to ameliorate, the author has to discuss the essential nature of wound shock. He shows that dilatation of the vessels or vasomotor paralysis is not an essential feature, and that acidosis or diminution of the alkaline reserve of the blood, which is almost invariably present in the later stages of shock, is more of the nature of a result than a cause, and is due to the starvation of the tissues in oxygen consequent on the augmenting failure of the vascular supply. He concludes that in the absence of haemorrhage the fall of blood pressure and the diminution of the fluid in circulation must be due to a general capillary dilata-

tion and to the loss of blood from the circulation by stagnation in this part of the system. He adduces certain facts which appear to indicate that this capillary dilatation is toxic in origin, and is due, perhaps, among other factors, to the absorption of chemical substances produced in damaged muscle. Dale has shown that a condition indistinguishable from wound shock can be produced by the injection of histamine, and that the salient feature of the action of this drug is a dilatation of the capillaries, which may be combined with constriction of the arterioles. Whether the substance absorbed from the injured tissues is histamine itself, or some other body presenting similar physiological properties, has not yet been definitely established.

The essential feature of shock being the loss of fluid from the circulation, the obvious method of treatment would be the introduction of fluid to make good this loss. Salt solutions, isotonic or hypertonic, are useless for this purpose, since they escape through the capillary walls almost as rapidly as they are injected. Alkaline salt solutions are equally ineffective, and may, in fact, be harmful. Human blood may, of course, be used, and has been used to a large extent in France, provided that a giver is at hand and that it is possible to take all the precautions necessary for the transfusion of blood from arm to arm, or the injection of blood preserved by citration and exposure to cold. Professor Bayliss shows that these complications are unnecessary, since equally good results can be obtained by the injection of an artificial serum, which can be prepared and maintained sterile in any quantity. Salt solution escapes from the vascular system owing to its deficiency in protein, so that it has neither the viscosity of serum nor the osmotic pressure due to the protein which serves to keep the water of the blood within the vessels. It was necessary, therefore, to find some substance or substances which, added to salt solution, will confer on this fluid a viscosity and a colloidal osmotic pressure equal to that of blood or blood serum. These requirements, Bayliss shows, are met by two substances—namely, gelatine and gum arabic. Gelatine presents the disadvantage that it may contain tetanus spores, that it tends to be altered by effective sterilization, and that it may promote intravascular clotting. None of these disadvantages are possessed by gum arabic. A solution of gum arabic of 6 per cent. or 7 per cent. in 0.9 sodium chloride has the viscosity of blood and the osmotic pressure of its colloids. Gum arabic is quite innocuous both in animals and in man. It is easily sterilized without loss of viscosity, and its repeated injection does not give rise to anaphylactic phenomena. It does not haemolyze or agglutinate human blood. The gum salt solution, previously sterilized and filtered, can be preserved in well closed bottles which can be used even in the advanced dressing stations.

When a patient shows signs of shock with the customary lowering of blood pressure, Professor Bayliss recommends that this gum salt solution be injected in quantities sufficient to raise the blood pressure to a normal level. A certain number of illustrative cases are quoted in the lectures showing the excellent results obtained by this procedure. Many patients were saved who without the injection would certainly have died of the original injury or of the necessary subsequent operation.

It is interesting to note that Bayliss's discovery has not failed of appreciation by the German medical service, who, however, following a practice long established in that country, ascribe the use of gum arabic to a certain physiologist, Kestner whose fame

¹ London: Longmans, Green and Co. 9s. net.

² BRITISH MEDICAL JOURNAL, May 18th, 1918, p. 553.

has not yet reached this country in connexion with any other physiological discoveries. In this connexion the author reminds us of the fact that Christopher Wren was "the first author of the noble anatomical experiment of injecting liquors into the veins of animals, now vulgarly known, but long since exhibited to the meetings at Oxford and thence carried by some Germans and published abroad."² It is apparently not easy to eradicate national habits.

THE OVERFULL MEDICAL CURRICULUM.

In discussing recently schemes on foot for a reform of medical education we made the observation that the difficulty of every reformer of medical education has been so to adjust his scheme that the average man may enter upon his life work at a reasonably early age. The point was well put by Dr. Peter Mere Latham in a lecture he delivered at St. Bartholomew's Hospital over eighty years ago. "If all medical students," he said, "had fifteen or twenty years at their disposal, and could dedicate them all to professional education, we might pardon a little innocent declamation in displaying the rich and varied field of knowledge about to be disclosed to them; but even then, sober truth would compel us to confess that the field so pompously displayed far exceeded in extent what the best minds could hope to compass, even in fifteen or twenty years. When, however, we recollect what space of time the majority of men so addressed really can give to their education, the whole affair becomes inexpressibly ludicrous. . . . It is all very fine," he went on, "to insist that the eye cannot be understood without a knowledge of optics, nor the circulation without hydraulics, nor the bones and the muscles without mechanics; that metaphysics may have their use in leading us through the intricate functions of the nervous system, and the mysterious connexion of mind and matter. It is a truth; and it is a truth also that the whole circle of the sciences is required to comprehend a single particle of matter; but the most solemn truth of all is, *that the life of man is three-score years and ten.*" He justly observed that much disquietude was felt by students, "and especially by the best informed and best disposed," when, at the entrance of their profession, they were met by obstacles which seemed insurmountable; and he concluded that "a well-weighed scheme of professional education, sound and practicable, comprehensive and moderate in its requirements," would have the special benefit of satisfying the minds of students themselves that at each step of their progress they are in the right path. If this was true in 1836 it is more than ever true now; indeed, we find Sir Clifford Allbutt writing in 1906, "For two generations we have been loading and loading this brief curriculum as if our ambition were to teach many things ill rather than a few things well. . . . One may spend a lifetime on many acquirements and yet be uneducated."

In our previous article it was mentioned that Sir George Newman subscribed to the opinion that one way of unloading the curriculum was by teaching the preliminary sciences in the secondary schools. In some secondary schools it would, he said, be practicable to cover within two years the ground of all preliminary sciences ancillary to medicine, making it unnecessary for the student to devote any time at the medical school to their study. This was the view also of the Royal Commission on University Education in London. Any further teaching of these sciences may properly be in direct relation

with anatomy, physiology, and pathology. Again, in another part of the report, it is suggested that the study of anatomy and physiology should be stripped of useless memorizing of unimportant detail; that a considerable amount of materia medica and some pharmaceutical work might be abolished, the number of systematic lectures in almost all directions diminished, and the examination system brought into subjection. The curriculum, it is suggested, can be, by these means, so simplified that the undergraduate shall be able to study his subjects more deeply. Here we come at once to the time difficulty. Sir George Newman quotes an opinion of Mr. A. Flexner that "it matters little what particular facts the student knows at graduation, for he can in any case know comparatively few, provided intensive training in a few branches has fixed a keen and sound mental disposition." Thus crudely expressed we conceive this to be a dangerous heresy; a man himself trained in medicine would not have emitted it, and when we come to Sir George Newman's own recommendations we find this clearly implied, and wonder why he quoted Flexner. The curriculum, he says, must first of all be strong in anatomy, physiology, and pathology. Next the student must be thoroughly trained in clinical examination and the interpretation of physical signs, for "no new inventions or methods, no instruments of precision, can absolve him from the duty of his own senses in this matter." This well states what has been the strong point of English medical education. It is characteristic of the system and consonant with the national temperament. Thirdly, Sir George Newman would have the student give more time and work more intelligently in the out-patient department on children's ailments and on subjective symptoms, every mode or device being used to bring the student into immediate and personal touch with the beginnings of disease. Fourthly, the student should be more fully instructed as to treatment, not only by drugs and the like, but by physical methods; and fifthly, he ought all through to have enforced on his attention the means for the prevention of disease, not merely infectious but other. Now if all this is true, as we believe it is, Mr. Flexner's dictum is seen to be inapplicable. It does matter very much what particular facts the student knows at graduation, and if he fulfils Sir George Newman's five requirements he will be liable to an indigestion of facts unless his teachers are skilled to train him to appraise the value of the facts, to point out their relation to each other, and to help him to think about them.

We are thus brought to the conclusion that the subjects, theoretical and practical, a medical graduate ought to know are too numerous and too complicated to fit into the curriculum, even when this is voluntarily extended from the minimum of five years to six. Time is to be gained at the one end by getting rid of the preliminary sciences at the secondary schools; but at the other it is to be extended by the organization of graduate teaching.

CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION IN APRIL.

The programme subcommittee has now decided on the main subjects for discussion at the special scientific and clinical meeting of the British Medical Association which will be held in London in the second week of April. After the reception on Tuesday evening, April 8th, by the President of the Association, the three sections—of medicine, of surgery, and of preventive medicine and pathology—will meet on the morning of Wednesday, April 9th, and on

² Spratt's *History of the Royal Society*, 1667.

the two following days. Colonel C. T. C. de Crespigny, D.S.O., A.A.M.C., and Colonel C. H. S. Frankau, D.S.O., A.M.S., have been appointed organizing secretaries of the sections of medicine and surgery respectively. The secretary of the section of preventive medicine and pathology has not yet been formally appointed; it is hoped that Major Ellis, C.A.M.C., will be able to act, and in the meantime Professor S. G. Shattock, F.R.S., and Dr. J. A. Arkwright of the Lister Institute have consented to serve as acting secretaries; they had the assistance in the early stage of Lieut.-Colonel C. J. Martin, F.R.S. On Wednesday morning, April 9th, a discussion will be held by the section of medicine on war neuroses; by the section of surgery on thoracic injuries; and by the section of preventive medicine and pathology on the dysenteries—amoebic and bacillary. On Thursday morning there will be, as at present arranged, a combined meeting of the sections of medicine and of preventive medicine and pathology for the discussion of influenza and its complications, while the section of surgery will discuss shock. On Friday morning the section of medicine will discuss cardiac insufficiency and venereal disease; orthopaedic subjects will be discussed by the section of surgery, and malaria by the section of preventive medicine and pathology. A special feature of the meeting will be the afternoon demonstrations; these will cover a wide field of practical medicine and surgery. There will be demonstrations of neurological cases at the National Hospital for the Paralyzed and Epileptic, Queen Square, W.C., and Dr. Mott will give a demonstration at the Maudsley Hospital on functional neuroses. The surgical demonstrations will include the methods for the treatment of shock and the selection of fracture appliances, including the application of Thomas splints for injuries of the thigh, the manufacture and adjustment of artificial limbs, and illustrations of the methods adopted at the Queen's Hospital for facial injuries, Sidcup. Opportunities will also be afforded for attending demonstrations by Professor Keith and Professor Shattock in the museum of the Royal College of Surgeons.

DEGREES FOR LONDON STUDENTS.

It is now more than a quarter of a century since the British Medical Association, moved thereto by the late Mr. Macnamara, then President of the Metropolitan Counties Branch, published a reasoned report on the unsatisfactory nature of the relation of the medical schools in London to the University, and on the difficulty medical students encountered in obtaining a degree. In later years the subject was frequently debated and more than one proposal was made for a new university for London, either a medical university or a federal university of London colleges, leaving to the present University its functions as an imperial institution. In 1913 the Royal Commission on University Education in London stated that less than one-third of the students of the medical schools in London were undergraduates of the University of London, and that the schools could "scarcely be said to have any closer connexion with the University of London than with the Universities of Oxford and Cambridge, or with the Conjoint Board of the Royal Colleges." The recommendations of the Royal Commission have not produced any change in the position, for its three university medical colleges with complete professional staffs have not yet been established, whatever the early future may have in store. Meanwhile, discussion on the position of students of the Imperial College of Science and Technology has been revived. The disadvantage under which they lie, as compared with students in other centres, is due to the fact that as their college is not a constituent part of the University of London they cannot in the ordinary course obtain a degree in science. It is claimed on their behalf that an Imperial University of Technology should be established, and that the Imperial College should be, at least, its nucleus. The

Royal Commission reported dead against the establishment of a technological university in London and advised that the Imperial College should be amalgamated with the reconstituted University of London. There are differences between the case for the students of science and technology and that for students of medicine, but the similarities are greater, and the disadvantages of the present condition of things are in some respects identical. It is unjust to both classes of students, since they suffer in after-life because they have chosen to take their special education in London where the opportunities in both instances are unrivalled. For somewhat different reasons the proposal for a University of Law in London, to be an imperial school of law, has again come under discussion in spite of the adverse opinion of the Royal Commission, which considered that the University of London should have a Faculty of Laws, and that the degrees in law should be recognized by the Inns of Court. This matter is remote from medical education, but it is an indication that thoughts are again turning to plans for the better organization of university education in London, so that students who resort to it may benefit to the full from a complete training and enjoy the academic recognition they have earned.

MEDICAL GRADUATE COURSES IN EDINBURGH.

THE universities have felt the returning flow of life into its natural channels sooner and the stream is stronger and fuller than they had dared to expect. That they will rise to so great an occasion we have already had some evidence, and we publish elsewhere a detailed statement of the arrangements made in Edinburgh, with the co-operation of the colleges, for medical courses specially designed to meet the needs of the younger graduates who were called to serve in the armed forces of the Crown immediately after graduation. The scheme aims at supplying the graduate with a means of thoroughly re-equipping himself for medical practice. He is partly to be taught and partly he is to teach himself. In the morning hours he will work in the departments of anatomy, physiology, pathology, or bacteriology, and in the wards of the hospitals; and in the afternoons he will receive instruction in the Royal Infirmary, the Royal Hospital for Sick Children, and the other hospitals included in the scheme. He will have a choice of the kind of work to which he specially wishes to devote himself. In this way the graduate clinical teaching will not interfere with that of undergraduates which (in Edinburgh) is carried on before 2 o'clock in the day. Further, in all the three courses the teachers will be arranged in teams, and the whole clinical material of all the wards will be pooled; thus all the teachers will share in giving instruction, and each subject discussed will be illustrated by a large variety of cases. If the graduate desires to take the medical as well as the surgical course he will prolong his stay for three months more; and if he wishes also to take out the vacation courses in obstetrics and gynaecology or in such special subjects as ophthalmology, dermatology, or venereal diseases, he will remain in or go to Edinburgh for the months of August and September.

MEDICAL DEPARTMENT OF THE PENSIONS MINISTRY.

It is officially announced that the Minister of Pensions, Sir Laming Worthington Evans, who succeeded Mr. Hodge when the Ministry was reconstituted recently, has decided to effect certain changes in the administration of the medical branch. In the transfer of hospital accommodation and medical personnel for disabled men from the military authorities to the Pensions Ministry, it is essential to ensure the closest co-operation between the navy, army, and air force, and the ministry. With that end in view, the Minister has appointed Colonel A. L. A. Webb, at present Assistant Director of Medical Services, War Office, to be Director-General, subordinate to whom

there will be three Directors of Medical Service, each at the head of a definite branch of the work of the department. Sir John Collie, C.M.G., who is about to resume his position at the London County Council, from which he was temporarily released, has been invited, and has consented, to act as Consulting Medical Officer to the Ministry on resigning his appointment as Director of Medical Services. Colonel Webb, who entered the Royal Army Medical Corps in 1889, received the C.M.G. and was promoted brevet colonel for his services during the war. He has been for some time head of the hospital department in the office of the Director-General A.M.S., where his administrative work has been very highly appreciated. The task before him in the Pensions Ministry is one of great importance and no little difficulty; co-ordination of the several departments concerned with the treatment and education of the disabled man is one of the most essential needs of the country to-day.

VAGOTONIA AND SYMPATHICOTONIA.

A good deal has been written lately about vagotonia and sympathicotonia, terms introduced by Eppinger and Hess to account for and describe nervous symptoms caused by abnormal activity of the vegetative nervous system. These names are somewhat impressive and require some explanation; by vagotonia is meant increased tonicity of what Hess and Eppinger called the autonomic (parasympathetic) system, namely, the cranial, medullary, and sacral outflow of the vegetative nervous system. Professor J. N. Langley originally introduced the words "autonomic system" for what was formerly spoken of as the sympathetic, and it is unfortunate that Eppinger and Hess should restrict its use to a part only of the whole, thus causing some confusion. Sympathicotonia refers to increased tonicity of the sympathetic or the remaining part of the vegetative nervous (old sympathetic) system, and is supposed to depend on an increased continuous secretion of adrenalin into the circulation, vagotonia being regarded as the result of an excessive amount of a hypothetical substance, autonominine, the counterpart of adrenalin. Normally there is an equilibrium between the autonomic and the sympathetic systems, but when from any cause this balance is disturbed, the action of one becomes predominant and symptoms result. By means of drugs which act on the two divisions of the vegetative nervous system these disturbances become more pronounced and the diagnosis of the respective conditions is facilitated; thus, the subjects of vagotonia are sensitive to pilocarpine and physostigmine, and the manifestations thus produced are counteracted by atropine, whereas the patients with sympathicotonia are made worse by adrenalin, and although they are benefited by atropine it does not act as an antidote to the same extent as in vagotonia. Two papers bearing on the subject may now be briefly referred to. In a destructive criticism of the whole theory Swale Vincent¹ urges that as there is no proof of a continuous secretion of adrenalin into the circulation the grounds for the imaginary existence of autonominine are based on a false analogy, that Eppinger and Hess have evolved this hormone out of their inner consciousness, and that the whole conception is highly speculative and has little or no experimental or clinical evidence in its favour. Matsuo and Murakami,² of the medical clinic of the Kyoto Imperial University of Japan, accepting with some modification Eppinger and Hess's views, investigated enteric fever in which there is sometimes an unexplained slowness of the pulse. In 46 cases of bacteriologically proved typhoid fever injected with atropine under the same conditions as Marris's cases, they found that atropine was quite effective in quickening the pulse, especially those with bradycardia. Marris, as is well

known, found that atropine did not quicken the pulse in enteric fever to the same extent as in healthy persons or in patients with diseases other than enteric; and for the divergence of their results the Japanese observers cannot offer any explanation. From examination of the vegetative nervous system in 38 cases of enteric fever by means of injection of atropine, adrenalin, and pilocarpine they concluded that 14 cases corresponded to vagotonia and 11 to sympathicotonia, so that the majority of the cases showed one or other condition. In many of the cases with well marked slowing of the pulse vagotonia was present and may therefore be the cause, whereas many of the cases without a slow pulse showed sympathicotonia. The 5 fatal cases out of the 38 all showed sympathicotonia, and as this state is often accompanied by a rapid heart, which has long been recognized as a bad prognostic in typhoid, the existence of sympathicotonia may be of significance in the prognosis of the disease.

THE EUGENIC MARRIAGE.

THE new Norwegian marriage law came into force on January 1st, 1919. It may not represent the unadulterated eugenic ideal, but it is so great a step towards it as to be almost revolutionary. It contains eighty-one sections, but the following are some of the salient points: A man under 20 and a woman under 18 may not marry without the consent of the authorities. Birth and baptism certificates must be produced before the banns are published. Under certain conditions, one or both of the contracting parties may be required to show that they have not been insane. Both must declare in writing that they are not suffering from epilepsy, leprosy, syphilis, or other venereal disease in an infectious form. In the other alternative the subject of any of these diseases must prove that the other party to the marriage contract is cognisant of the fact, and that both parties have been instructed by a doctor as to the dangers of the disease in question. The doctor concerned is not to be tied by professional secrecy and is bound to interfere if he knows that any one of these diseases is being concealed by either side. A written declaration must also be given by the candidates for marriage as to previous marriages and to children born to them out of wedlock. The marriage may be nullified if it is subsequently proved that insanity or any of the above diseases have been concealed, or if an incurable morbid condition, incompatible with married life, exists. Dissolution of the marriage may also be claimed if false declarations have been made or obstacles concealed. Again, if the woman has become pregnant by another man, or if the man has rendered another woman pregnant and this has not been revealed, dissolution of the marriage may be claimed, whether the child of this irregular union be born before or after the marriage; such a claim must be made within six months of the facts becoming known to the claimant. No woman may marry again till ten months after the termination of her previous marriage if she is pregnant at this period. Many other causes are defined as valid for the dissolution of marriage, and it is evident that henceforth in Norway it will often be difficult to marry in haste, and that the facilities for escaping from a hasty, ill-judged marriage will prove to be numerous and varied.

WASTED RECORDS OF DISEASE.

THE statistical study of disease is a branch of investigation now held to contain great promise of reward for medicine and surgery. Particularly is this the case with the early stages of chronic diseases, those that fill the outpatient departments of our large hospitals before the time comes when increasing disability makes their victims the often bedridden inmates of hospitals, their own homes, or various eleemosynary institutions. The importance of the early study of these chronic disorders has often been urged upon the medical profession by able and experienced

¹ Swale Vincent, review of Vagotonia, *Endocrinology*, 1917, i, 459-466.

² J. Matsuo and J. Murakami. *Arch. Int. Med.*, Chicago, 1918, xxi, 399-410.

writers in prefaces, books, and periodical literature. Perusal of the latest volume of *St. Thomas's Hospital Reports*, dealing with the year 1915 and published at the end of last year, brings the subject once more before the mind. In this volume the reader finds an exhaustive and admirable statistical account of the work done in the various departments of a great hospital in a twelvemonth, together with brief but detailed accounts of cases or conditions presenting points of especial interest. In themselves, of course, however well written, such *Reports* as these do not afford enlivening reading, but, taken in the lump, they contain a great deal of buried treasure which can be unearthed only by the statistical method of comparison. Here, then, we have a great opportunity for a statistical department of a new Ministry of Health, if such a one there be. It should be the duty of a coming Government department to take advantage of so full and detailed a report of hospital work as this, and also to encourage certain others of our larger hospitals in town or country to begin or to resume the publication of similar well ordered annual reports of cases admitted to their care. For it is by the co-ordinated study of such records in the mass—a task well fitted for a governmental department—that we may hope to move a step forward in our knowledge of the first stages of many common chronic maladies, and of the means indicated to secure, if possible, their prevention rather than their cure. Without such study these cases fall into neglect for want of a due appreciation of their inherent though as yet unrealized gravity. Their importance being underestimated, they fail to obtain the continuity of skilled observation and treatment they really require. This loss of opportunity, we hold, can best be rectified by the emphasis that will be laid upon such instances when they stand forth dissected from the mass of statistical information in which they are now, for want of analysis, involved.

THE HOUSING DEPARTMENT.

THE President of the Local Government Board has appointed Sir James Carmichael, K.B.E., building contractor, of London, who has been chairman of the Munition Works Board, to be Director-General of Housing in England and Wales. The department of which he is to take charge will include central organizations for carrying out the Government policy of affording financial and technical assistance in the preparation of houses for the working classes to local authorities and other bodies, including public utility societies composed of large employers of labour who have plans for the erection of model villages near their works. Dr. Addison has undoubtedly taken this step in view of the magnitude of the work to be done and the serious financial considerations which arise. Advances are to be made to local authorities for the erection of the houses, which are to be valued after seven years. Any loss then ascertained to have been incurred is to be met as to 75 per cent. by the Treasury and as to 25 per cent. by the local rates. Objection has been taken in certain localities to this plan, on the ground that the local liability, in the event of a loss, should not exceed a rate of 1d. in the £, and it is probable that the suggestion to restrict the liability to a small extra rate will be accepted. Meanwhile 1,070 local authorities have arranged to prepare plans, and the preparations for the erection of the first instalment of 300,000 houses are said to be in a forward state. The central department has been strengthened by the appointment of various experts in building, and housing commissioners have been appointed to assist the local authorities in the preparation of schemes.

THE first session of the new Parliament was opened on Tuesday, when Mr. Lowther was elected Speaker. No other business was done; nor can any be done until the members have been sworn in, and the King's speech is delivered by him next Tuesday. Mr. Lloyd George is expected to make a statement with regard to inter-

national affairs at the earliest possible date, and among the first bills to be introduced will be one for the erection of half a million houses for the working classes, to make up for the stoppage of building during the war, and another for the settlement of ex-soldiers on the land. The pledge to put forward a Ministry of Health Bill will undoubtedly be fulfilled, but the measure, after its introduction, will almost certainly be referred to grand committee.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

AT the last meeting of the Executive Committee of this Fund a letter was received by the Committee from Dr. V. Pechère, the President of the Comité National de Secours et d'Alimentation (Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés). The Comité National is the body sitting in Brussels to whom the dispensation of the contributions of the funds in behalf of the suffering Belgian doctors and pharmacists in Belgium has been entrusted. The Belgian Doctors' and Pharmacists' Relief Fund has raised upwards of £25,000 during its life of a little over four years. The greater part of this money has been received directly from British doctors and pharmacists at home, in the colonies, and in India, though during the closing stages of the war substantial grants have come from the American Red Cross, to the enormous benefit of the charges of the Fund. After the immediate wants of Belgian doctors and pharmacists and their families, arriving in this country as refugees, had been met by the Fund, the bulk of the money was duly distributed in monthly donations varying from £800 to £400 among Belgian doctors and pharmacists remaining in Belgium, the organization of which Dr. Pechère is the head undertaking the difficult and delicate task of distribution. Dr. Pechère's committee has wisely husbanded the contributions sent to them, so that a certain amount of money should remain in hand for the succour and rehabilitation of Belgian doctors and pharmacists after the war. In his letter Dr. Pechère made the generous suggestion that the money should be returned to the Fund, but this was not entertained by the committee. It was definitely stated in the original programme of those who organized the Fund that it would be impossible for British doctors and pharmacists to give very much money, because, when the immediate needs had been met, heavy demands for rehabilitation must remain. Many doctors and pharmacists in Belgium were materially ruined, and will not be able to return to work without pecuniary grants. All readers of the medical and pharmaceutical journals who have kept the objects of the Fund in recollection will approve of the decision of the committee of the Fund.

Dr. Pechère in his letter expressed special thanks to Sir Rickman Godlee, Chairman of the Executive Committee, to Dr. S. Squire Sprigge (Editor of the *Lancet*), Honorary Secretary of the Fund, and to its Honorary Treasurer, Dr. Des Voeux, to his Secretary, and to Miss Des Voeux.

The Belgian Doctors' and Pharmacists' Relief Fund is closed as from Monday next, February 10th, the sum of £96 16s. 6d. remaining in the hands of the Honorary Treasurer being probably sufficient to meet any remaining calls from Belgian refugees in this country. The Fund has disbursed the whole of the sum collected—namely, £25,000—save the small sum in hand; and the cost of collection and distribution has been under £200, including the postage of reports and circulars, and their printing and production at war rates. The secretarial work and that of the Treasurer has been done gratuitously, both by the officers named and by their assistants; a large proportion of the postage has been defrayed by the *Lancet*; the auditors made their inspections and reports on the books of the Fund for a nominal fee, and the bank treated the Fund with special courtesy. These are the things that account for the economical administration of the Fund's resources.

The following subscriptions have been received up to Monday, January 27th:

	£	s.	d.
Hampshire Pharmacists' Association, per Mr C. H. Baker (making £56 5s.)	56	5	0
Dr. Charlotte H. Warner	1	1	0
Dr. Alfred Cox (monthly)	1	1	0

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Deaths.

CAPTAIN P. FERGUSON, R.A.M.C.

Captain Philip Ferguson, R.A.M.C., died of septicaemia at Horton War Hospital on January 28th, aged 34. He was the only son of Dr. Ferguson of Manchester, and was educated at the Victoria University in that city, where he graduated M.B. and Ch.B. in 1906, and at the London Hospital, also taking the diploma of F.R.C.S.Eng. in 1913. While a student he filled the posts of senior demonstrator in physiology and assistant demonstrator in anatomy at Victoria University, and afterwards those of house-surgeon at Manchester Royal Infirmary and at the Throat Hospital, Golden Square, London. He took a temporary commission as lieutenant in the R.A.M.C. on August 16th, 1914, in the second week of the war, and was promoted to captain after a year's service.

CAPTAIN R. N. PORTER, R.A.M.C.

Captain Robert Nuttall Porter, R.A.M.C., died at Ruthin, North Wales, on January 25th, aged 38. He was the eldest son of Sir Alexander Porter, ex-Lord Mayor of Manchester, and was educated at Manchester Grammar School and at Victoria University, Manchester, where he graduated M.B. and Ch.B. in 1904, also taking the diploma of F.R.C.S.Eng. in 1910. After filling the posts of house-surgeon of Manchester Royal Infirmary and of Leicester Infirmary, and of medical superintendent and surgical registrar of the Seamen's Hospital, Greenwich, he went into practice about three years ago at Derby, where he was honorary medical officer of the Derbyshire Children's Hospital. On January 1st, 1918, he took a temporary commission as lieutenant in the R.A.M.C., and was promoted to captain after a year's service. He contracted his fatal illness while serving in France.

Repatriated.

Captain C. C. Jones, R.A.M.C.

Captain G. R. Lipp, M.C., R.A.M.C. (temporary).

Captain H. S. Moore, R.A.M.C. (S.R.).

Captain C. O'Malley, M.C., R.A.M.C. (temporary).

Lieutenant F. W. M. Lamb, R.A.M.C. (S.R.).

DEATHS AMONG SONS OF MEDICAL MEN.

Davison, Rashell Montague Rashell, Captain 3rd Battalion North Staffordshire Regiment, youngest son of Dr. Rashell Davison of New Malden, Surrey, died on January 27th, of wounds received in action on March 22nd, 1918. He was wounded and taken prisoner on March 22nd last while serving with the 8th Battalion of the Leicestershire Regiment, and had recently been repatriated.

Haydon, Allan, Lieutenant Royal Engineers, youngest son of the late Dr. Ernest Haydon, died of pneumonia following influenza at the Military Hospital, Palace Green, Kensington, December 28th, 1918, aged 27. He attained his rank on July 1st, 1917.

[We shall be indebted to relatives of those who were killed in action or died in the war for information which will enable us to make these notes as complete and accurate as possible.]

HONOURS.

THE following awards to medical officers are announced in a Supplement to the *London Gazette* of January 31st, "for conspicuous gallantry and devotion to duty" in the field.

Bar to D.S.O.

Major (temporary Lieut.-Colonel) David Ahern, D.S.O., No. 11 Field Ambulance, R.A.M.C.

From August 30th to September 3rd, 1918, during operations on the Arras front, he was responsible for the clearing of casualties from the divisional front. He showed great forethought in selecting sites for his forward posts, especially in establishing one post in a village which provided of the utmost value as an advanced dressing station later on. He was wounded while at his work, but refused to leave until the conclusion of operations. His energy and resource were instrumental in the prompt evacuation of the wounded. (D.S.O. gazetted June 4th, 1917.)

Captain (acting Lieut.-Colonel) Alexander Donald Fraser, D.S.O., M.C., No. 9 Field Ambulance, R.A.M.C.

He was in charge of bearer divisions during the operations in the neighbourhood of Moyenneville-Ervillers-St. Leger from August 21st to August 28th, 1918, and was continually among the leading

troops under heavy shell and machine-gun fire, directing the evacuation of wounded from regimental aid posts. He managed to get ambulance cars close up to the firing line, which greatly accelerated the clearing of casualties to the rear. He was untiring throughout the whole period, and set a fine example to those under him. (D.S.O. gazetted June 4th, 1917.)

Major (acting Lieut.-Colonel) Charles Reade Munroe Morris, D.S.O., 99th Field Ambulance, R.A.M.C.

For exceptional gallantry and devotion to duty on September 20th to 24th south-west of Villers Guislain, in working continually for five days under heavy shell fire, supervising and co-ordinating the work of the medical officers while at work at night in the advanced dressing station. It was twice blown in by shell burst. He carried out important surgical work, and by his pluck and endurance set a fine example to all around him. (D.S.O. gazetted June 4th, 1917.)

D.S.O.

Lieut.-Colonel William Harold Kerr Anderson, 13th Field Ambulance, C.A.M.C.

During the operations before Arras, September 2nd to 5th, he was in charge of the evacuation of wounded. He succeeded in keeping in close touch with the infantry during the whole of the battle, so that the wounded were evacuated almost as soon as they became casualties. His duties were often performed under enemy artillery fire, which caused many casualties, but by his courage and personal example he kept his men at their splendid work until all casualties were carried out.

Major (acting Lieut.-Colonel) William Alfred Gordon Bauld, No. 7 Canadian Cavalry Field Ambulance, C.A.M.C.

During mounted operations from October 8th to 11th, 1918, he was in command of the advanced cavalry field ambulances. On the night of October 9th-10th, when ordered to search and clear the wounded from three villages, which were being heavily shelled, and the approaches badly damaged by craters, he organized the evacuation of the wounded, making certain that all were found and removed. He showed great coolness and energy.

Major Donald Dunbar Coutts, A.A.M.C., attached 24th Battalion Australian I.F.

On September 1st, 1918, during the attack at Mont St. Quentin, although the regimental aid post was consistently shelled, he attended the wounded almost continuously for fifty-two hours, during five of which he was forced to wear his gas respirator, displaying throughout the greatest courage and devotion to duty. On the day prior to the attack a shell burst on a dug-out, wounding several men and pressing one down, severely wounded, blocking the entrance. He immediately went forward, regardless of intense shell fire, and succeeded in extricating the man and removing him, over exposed ground, to the rear.

Major George William Hall, 12th Field Ambulance, C.A.M.C.

During the action in front of Arras, from September 2nd to 6th, he was in charge of the evacuation of wounded. Time and time again he went through heavy enemy shell and machine-gun fire to direct the clearing of the wounded. On the afternoon of September 2nd he succeeded in clearing a number of wounded who were being shelled with gas shell to a place of safety, and dressed many wounded under heavy fire. His work throughout the battle was admirable.

Temporary Captain (acting Major) Hugh Ross Macintyre, M.C., R.A.M.C., attached 69th Field Ambulance (Italy).

During operations on the Piave between October 27th and 29th, 1918, especially on the morning of the 27th when in charge of stretcher-bearers, he crossed to the right bank of the Piave immediately behind the infantry under very heavy fire, and supervised the collection and evacuation of the wounded under great difficulties, having to ford the river several times. He set a very fine example to all under him by his untiring energy and total disregard for his own safety.

Lieut.-Colonel James Hardie Neil, No. 3 Field Ambulance, N.Z.A.M.C.

During operations near Bapaume and Bancourt from August 23rd to September 3rd, 1918, he was in command of the ambulance, and constantly visited the forward regimental aid post under heavy shell fire, and selected positions for the bearer relay posts. During the action round Bancourt he went forward with two light ambulance cars to within a few hundred yards of the front line and supervised the evacuation. It was owing to his gallantry and personal supervision that the evacuation of the wounded was so successfully carried out.

Temporary Captain (acting Major) Philip Randal Woodhouse, M.C., 9th Field Ambulance, R.A.M.C.

On September 27th, 1918, at Maison Rouge, when loading wounded on an ambulance wagon, it was damaged, and an ammunition dump close by set on fire by heavy shelling. He at once got the fire out and evacuated the wounded to safety. On two other occasions he did good work under heavy shell fire, clearing a road which was blocked by a tree blown across it, and also in evacuating wounded when his advanced dressing station was hit by a shell.

Third Bar to Military Cross.

Temporary Captain Charles Gordon Timms, M.C., R.A.M.C., attached 7th Battalion, Royal Fusiliers.

During a severe enemy barrage near Cambrai on October 1st, 1918, when his commanding officer was wounded, he at once took up a squad of stretcher-bearers into the barrage to the rescue, tending his wounded, and seeing that he was conveyed to a place of safety. (M.C. gazetted July 18th, 1917. First bar gazetted July 26th, 1918. Second bar gazetted January 11th, 1919.)

Second Bar to Military Cross.

Temporary Captain (acting Major) George Boyd McTavish, M.C., 99th Field Ambulance, R.A.M.C.

When west of Villers Guislain, from September 19th to 27th, 1918, he worked for eight days and nights, refusing to be relieved, walking constantly through heavy barrages and machine-gun fire, organizing bearer squads on the whole divisional front. Although gassed, he still carried on, and saved the life of an officer who was knocked over by a shell when he was talking to him, holding an artery until help came, he himself having been knocked over by the same shell. (M.C. gazetted October 29th, 1916. Bar gazetted September 16th, 1918.)

Bar to Military Cross.

Captain John Ernest Affleck, M.C., No. 9 Field Ambulance, C.A.M.C.

During the fighting east of Arras, August 26th to 28th, 1918, his work was carried out under continuous shell and machine-gun fire, and many times he led his bearers close up to the front line, collecting seriously wounded men. By his cool judgement and energy he was enabled to get all the wounded under cover. (M.C. gazetted September 17th, 1917.)

Temporary Captain (acting Major) John Crawford, M.C., 136th Field Ambulance, R.A.M.C.

In the area north of Ypres occupied by Belgian troops on September 28th to 30th, 1918, he was conspicuous for his indefatigable efforts in evacuating the wounded from six field batteries and ten trench mortar batteries. During the advance he was constantly well ahead, with complete disregard for his own safety, under heavy shell fire, and by his initiative and organization all the wounded were evacuated smoothly and rapidly. (M.C. gazetted March 3rd, 1917.)

Captain William Donald, M.C., R.A.M.C. (S.R.), (Salonica.)

During operations against Sugar Loaf and Thetass, 1 on September 18th and 19th, 1918, he went fearlessly forward under the heaviest fire to rescue wounded lying in front of the enemy's positions. By his courage he set the finest example to his stretcher-bearers, and was instrumental in saving many lives. He worked unceasingly for three days, and refused to rest until all wounded had been brought in. (M.C. gazetted January 1st, 1918.)

Captain Charles Marsh Gozney, M.C., 5th (London) Field Ambulance, R.A.M.C.

During the attacks on Huppy Valley and Moisains between August 24th and September 2nd, 1918, he showed great initiative in moving his aid posts forward and keeping in touch with the advanced troops. His arrangements for the evacuation of the wounded were splendid, and he undoubtedly was responsible for the saving of many lives. (M.C. gazetted August 16th, 1917.)

Temporary Captain Francis Henderson, M.C., No. 8 Field Ambulance, R.A.M.C.

At Masnières on October 1st, 1918, he worked under heavy fire throughout the day and cleared the battlefield all through the night. Hearing that two officers of another division were lying out severely wounded, he made his way to them under heavy shell fire, dressed them, and brought them safely in. His work throughout was magnificent. (M.C. gazetted July 26th, 1918.)

Captain Kenneth Arthur McLean, M.C., A.A.M.C., attached 7th Brigade Australian Field Artillery.

On August 31st, 1918, near Clery, the battery was heavily shelled, two men being killed and two badly injured. He immediately went to the battery and commenced dressing one man who could not be moved. He continued his work until one shell burst close to him, wounding him severely in the arm, and mortally wounding the stretcher-bearer who was assisting him. He showed marked courage and devotion to duty. (M.C. gazetted July 26th, 1918.)

Temporary Captain Henry Leslie Messenger, M.C., R.A.M.C. (Salonica.)

On September 18th, 1918, near Doldejeli, he led a party of stretcher-bearers some 400 yards across the open through a heavy barrage, and succeeded in rescuing and bringing in a large number of casualties to his advanced post. The next day he established touch forward with the attacking battalions under heavy artillery and machine-gun fire. Throughout the action he showed the greatest energy and disregard of personal danger. (M.C. gazetted October 15th, 1918.)

Captain Duncan Arnold Morrison, M.C., No. 1 Field, C.A.M.C.

During the operations on September 2nd and 3rd, 1918, between Cagnicourt and Buissy, he kept in touch with four infantry battalions, repeatedly going up and down under heavy fire, hastening the evacuation of the wounded. He was untiring in searching for any who might have been overlooked and directing the bearers in their duties. His coolness and judgement helped on the evacuation enormously. (M.C. gazetted January 11th, 1919.)

Captain (acting Major) William Barrie Postlethwaite, M.C., R.A.M.C. (S.R.), attached No. 54 Field Ambulance.

On August 22nd, 1918, he cleared casualties at the crossing of the Ancere river. On August 25th, 1918, he had great difficulties in the advance beyond Fricourt, owing to heavy shelling, but by a daring reconnaissance found a comparatively safe track for evacuating the wounded. On August 30th, north of Combles, after searching all night, he again found a practicable evacuation route. His endurance and initiative were beyond praise. (M.C. gazetted October 18th, 1917.)

Captain (acting Major) John Gray Ronaldson, M.C., R.A.M.C. (S.R.), attached No. 14 Field Ambulance.

During the operations near Cambrai from September 18th to 30th, 1918, he was in charge of the bearers clearing the divisional front, and during the whole period he was living under heavy shell fire, including gas. Through casualties to medical officers, he had only one officer left to help him, but by his continually visiting the front posts he cleared all casualties, and his cheerfulness kept up the spirits of the bearers. (M.C. gazetted January 18th, 1918.)

Temporary Captain (acting Major) William Russell, M.C., 109th Field Ambulance, R.A.M.C.

Whilst in command of bearers near Failleur on August 22nd and 24th and September 3rd, 1918, he constantly visited all the regimental aid posts by day and night, often under considerable shell and machine-gun fire, and disposed his bearers and ambulance cars with such skill that all wounded were collected and placed in the most favourable conditions for recovery with the utmost celerity. Later, he was gassed by a direct hit on his advanced dressing station, but continued to evacuate wounded until his relief arrived. (M.C. gazetted October 18th, 1917.)

Captain Cedric Murray Samson, M.C., 9th Field Ambulance, Australian A.M.C.

On the morning of August 22nd, 1918, north of Chipilly, on the Bray-Corbie Road, he took a car along to the regimental aid post in spite of heavy shelling and gas. He superintended the line of evacuation, continually taking fresh squads up to the regimental aid post through heavy fire. Again, on August 31st, he dressed a wounded medical officer and his orderly in the open, being wounded

while doing so. During the period August 20th-31st, 1918, his fearless energy and devotion to duty were responsible for the rapid evacuation of so many wounded. (M.C. gazetted June 3rd, 1918.)

Captain Hugh Kingsley Ward, M.C., R.A.M.C. (S.R.), attached 2nd Battalion K.R.R.C.

On July 10th, 1918, after an intense bombardment of several hours, the enemy attacked the battalion sector east of Neupont Bains; during the bombardment he went up to the front line and remained in attendance on a badly wounded officer until he died. He was subsequently wounded while attending another officer, but continued looking after many other wounded men until he returned to the dressing station, when he worked for over two hours in the open, and when the enemy approached he stood outside to prevent them bombing the wounded. (M.C. gazetted October 20th, 1918.)

(To be continued.)

FOREIGN DECORATIONS.

The following decorations and medals have been awarded to medical officers by the President of the French Republic for distinguished services rendered during the course of the war:

Légion d'Honneur—Croix de Chevalier.

Temporary Captain (acting Lieut.-Colonel) James Robertson Campbell Greenlees, D.S.O., R.A.M.C.

Médailles des Epidémies (en Vermeil).

Major (temporary Lieut.-Colonel) John Frank Crombie, D.S.O., R.A.M.C.

Majors (acting Lieut.-Colonels): Ralph Bignell Ainsworth, D.S.O., R.A.M.C., Edward Michael O'Neill, D.S.O., R.A.M.C.

Captain (acting Major) Frank Herbert Cheney Watson, R.A.M.C. (T.F.).

Captains: Francis Henry Guppy, R.A.M.C. (S.R.), William Thomas Wood, R.A.M.C. (T.F.).

Temporary Captain Robert McCheyne Paterson, R.A.M.C.

Médailles des Epidémies (en Argent).

Majors: Alan Worsley Holmes A'Court, A.A.M.C., Clement Lorne Chapman, D.S.O., A.A.M.C., Harold Orr, C.A.M.C.

Captain (acting Lieut.-Colonel) Henry Neville Burroughes, R.A.M.C. (T.F.).

Captains (acting Majors): Sydney James Clegg, R.A.M.C. (T.F.), Alfred Morgau Hughes, R.A.M.C. (T.F.), John Hawkes Pendered, M.C., R.A.M.C.

Captains: Alfred George Hebblethwaite, D.S.O., R.A.M.C. (T.F.), William Hugh Hill, R.A.M.C. (T.F.), James McLean Macfarlane, M.C., R.A.M.C. (T.F.), Thomas Jenkins Murray, R.A.M.C. (T.F.), Eric Stuart Taylor, R.A.M.C. (T.F.).

Temporary Captains: Ranald Montague Handfield-Jones, M.C., R.A.M.C., Lancelot Raoul Lempriere, R.A.M.C., Octavius de Burgh Marsh, R.A.M.C., Arthur Francis Savory Sladden, R.A.M.C., Alfred Edward Stevens, R.A.M.C.

MENTIONED IN DISPATCHES.

A special Supplement to the *London Gazette*, dated January 30th, contains a list of names submitted by Lieut.-General Sir G. F. Milne, Commander-in-Chief British Salonica Force, "for gallant conduct and distinguished services rendered during the period from March 1st to October 1st, 1918." The list includes sixty-three medical officers of the A.M.S. and R.A.M.C. (Regular, Special Reserve, and Territorial) and ninety-four warrant and non-commissioned officers and men of the R.A.M.C.

A Supplement to the *London Gazette* of January 31st contains a list of names mentioned by Lieut.-General Sir J. L. Van Deventer, Commanding-in-Chief, East African Force, for excellent services rendered during the period December 1st, 1917, to July 31st, 1918. The list includes 13 officers of the A.M.S. and R.A.M.C., including one Special Reserve, 11 warrant and non-commissioned officers and privates of the R.A.M.C., 10 officers and 4 non-commissioned officers and privates of the South African Medical Corps, 4 officers of the I.M.S., 4 members of the Indian Medical Department, 3 officers and 3 warrant and non-commissioned officers of the East African Medical Service, 6 members of the Nyasaland Medical Service, 3 members of the Rhodesia Medical Corps, and 21 members of the nursing services.

The Meritorious Service Medal has been conferred upon twenty-six warrant and non-commissioned officers and men of the R.A.M.C. in recognition of valuable services rendered with the British Forces in Salonica.

The Military Medal has been conferred upon Nursing Sisters Helen E. Hansen and Beatrice McNair of the C.A.M.C. for distinguished services during an enemy air raid at Etaples on May 19th-20th, 1918.

A NEW medical periodical, with a title signifying "medical observation," has recently appeared at Athens. It is written in Greek, and is intended to counteract German influence which had become preponderant in Hellenic universities. A large part in the foundation of the new journal has been taken by Dr. Portmann, a naval surgeon attached to the French legation at Athens. Communications should be addressed to the editorial secretary, M. Sotiriades, Kalkoondi Street, 25, Athens.

Scotland.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE.

THE declaration of war in August, 1914, put an end for the time being to the Edinburgh post-graduate courses in medicine which had been going on since 1906 in connexion with the University and Royal Colleges. The two July courses on obstetrics and gynaecology and on diseases and defects of children had been held and the August course on internal medicine had been just begun, but the latter was suspended, and the September general course, the surgical course, and the special course on surgical diseases of the genito-urinary tract were abandoned, the energies of most of the teachers being directed to war work of various kinds. On November 13th, 1918, a meeting was held of the lecturers who had taken part in the 1914 and preceding courses of instruction. In the absence of the chairman of executive (Professor Harvey Littlejohn) the vice-chairman (Dr. Ballantyne) presided. It was decided to re-establish the post-graduate courses, but to adopt an entirely different arrangement in order to meet the needs of the younger graduates who had given themselves to war service immediately after graduation, and to make the teaching continuous all the year. The following were added to the Executive Committee: Dr. Haig Ferguson, Dr. Stewart Fowler, Dr. H. M. Traquair, and Mr. Alexander Miles, F.R.C.S. Edin. Professor Lorrain Smith took Professor Robinson's place among the university's representatives. Mr. Miles has since agreed to act as interim honorary secretary. The Executive Committee has arranged the following courses of post-graduate instruction: A, in clinical medicine; B, in clinical surgery; C, in obstetrics and gynaecology.

These are specially designed to meet the requirements of graduates returned from active service on demobilization, and are open to women graduates.

Courses A and B will be conducted during each of the academic terms:

Summer (April to June) commencing April 15th, 1919.

Autumn (October to December) commencing October 7th, 1919.

Winter (January to March) commencing January 6th, 1920.

Course C will be conducted during the vacation months, August and September, commencing August 4th, 1919. Only one course can be taken at a time.

COURSE A.—*Clinical Medicine.*

This course includes lecture-demonstrations, and ward work in general medicine, medical diseases of children, tuberculosis, medical ophthalmology, neurology, dermatology, infectious diseases, mental diseases.

Members of the course shall act as temporary assistant-demonstrators in the practical classes of anatomy, physiology, pathology, or bacteriology, and as chemical assistants in the medical wards of the Royal Infirmary, the Royal Hospital for Sick Children, the Royal Victoria Dispensary for Tuberculosis, the Eye Department or the Skin Department of the Royal Infirmary.

Members will be given the option of selecting the departments in which they desire to act as demonstrators and clinical assistants, and will be allocated to these in order of application up to the number of vacancies.

COURSE B.—*Clinical Surgery.*

This course includes lecture-demonstrations and ward work in general surgery, surgical diseases of children, aural, nasal, and laryngeal surgery, and venereal diseases.

Members of the course shall act as temporary assistant-demonstrators in the practical classes of anatomy, physiology, pathology, or bacteriology, and as clinical assistants in the surgical wards of the Royal Infirmary, the Royal Hospital for Sick Children, the ear, nose, and throat department, Royal Infirmary, or in the lock department.

Members will be given the option of selecting the departments in which they desire to act as demonstrators and clinical assistants, and will be allocated to these in order of application up to the number of vacancies.

COURSE C.—*Obstetrics, Gynaecology, and Child Welfare.*

This course includes clinics at the Royal Infirmary on diagnosis and treatment in gynaecology, and at the Royal Maternity Hospital on the diseases of pregnancy (in the pre-maternity ward), on labours, the puerperium, and the newborn infant; lecture-demonstrations on the morbid anatomy of gynaecology, of obstetrics (including the pathology of pregnancy and the new-born), and of antenatal diseases (including teratology); demonstrations of operative measures and of instrumental appliances in gynaecology and obstetrics; and clinical instruction in mother and child welfare at the various health centres

(including clerking at the antenatal clinic and at infant centres), study of the details of the working of the town system of mother and child welfare in its social and medical aspects.

Special Courses.

Courses on ophthalmology, aural, nasal, and laryngeal surgery, dermatology, venereal diseases, radiology, are being arranged.

EDINBURGH ROYAL MATERNITY HOSPITAL.

The directors of the Edinburgh Royal Maternity Hospital have recently purchased two flats in a block of buildings situated behind the hospital, in order to provide accommodation for a new department in connexion with the treatment of the venereal diseases as they affect pregnant, parturient, and puerperal patients and new-born infants. This department, we understand, is to be established as a part of the Edinburgh town scheme for the diagnosis and treatment of these maladies in the city and neighbouring districts.

PEDIATRICS IN GLASGOW.

We had the pleasure of announcing a few weeks ago that three chairs had been founded by the two Mr. Gardiners, shipowners in Glasgow, and endowed with the sum of £20,000 each. We now learn that two lectureships in pediatrics have been founded by gifts of £5,000, the one by Mr. Leonard Gow, shipowner in Glasgow, and the other by Mr. Robert Francis Barclay. The Leonard Gow lectureship, on "the medical diseases of infancy and childhood," is founded in memory of the donor's father; the Barclay lectureship, on "surgery and orthopaedics in relation to infancy and childhood," is founded in memory of the donor's seven pleasant years at the university, and his twenty years of work as honorary secretary of the Royal Hospital for Sick Children, Glasgow.

Correspondence.

THE PREVENTION OF VENEREAL DISEASE.

SIR,—I have followed with great interest the controversy in your pages on the prevention of venereal disease. It was stated by Mr. Turner (January 4th) that the fear of disease acted as a deterrent to such an extent that the feeling of security induced by a course of instruction in the use of prophylactic outfits will so increase the number of those who indulge in promiscuous sexual intercourse that the actual number of cases of acute disease will be increased. That is not the experience of the navy. Prophylactic and early preventive treatment was in existence in it before 1912, and the result has been a considerable fall in the incidence of acute disease. I have not the official figures, but the proportion of cases is certainly less than 50 per cent. of that ten years ago. In the ship of which I am medical officer, out of 130 men there has only been one case of acute disease in eighteen months, and in that case no preventive measures were used. That many have indulged, I know, because some have told me so, and others have reported to the sick bay for treatment after a night ashore. I wonder if any ship in pre-prophylactic days could show such a record, whether on home or foreign service. On the other hand, in ships where prophylactic outfits were temporarily unobtainable, the incidence has risen to 10 or more per cent. in spite of lectures on the danger of venereal disease.

If, as Dr. Browdy asserts (and I believe he is right), 80 per cent. of the population have had gonorrhoea at some period of life, how can the use of preventive measures increase this proportion? Even if those who run the risk of infection were to rise to 100 per cent., I do not see that 80 per cent. of these are liable to become infected, provided that the prophylactic outfits had clear printed instructions enclosed. Personally, I should like to see automatic machines containing these outfits placed in every public urinal in the kingdom. Their use does not require the verbal instructions of a reputable physician, as Mr. Turner suggests, but only a clearly worded paper with instructions in each box and the use of a grain of common sense by the user. By all means educate the public on the subject; but talk alone will not prevent a large percentage of men and women from indulging their sexual cravings in spite of the risk, especially when their brains are clouded by the fumes of alcohol. The knowledge that murder is punishable by hanging does not prevent murders being committed by

persons under the influence of alcohol, rage, or avarice. Will a knowledge of the dangers of venereal disease convert England into a land of ascetics?

The article of Colonel Adami, "The Policy of the Ostrich," faces courageously the facts with which we are confronted, and it is a reproach to the United Kingdom that "the Dominions are working together," while our civil and military authorities are still burying their heads in the sand. I disagree, however, with the policy of penalizing victims of venereal disease by stopping any portion of their pay—at any rate unless they neglected available precautions—because such a policy tends to encourage concealment. Stoppage of pay for this reason was abolished by the navy some time ago.

For the sake of the nation's health and for the generations to come, let us put aside our Grundian prejudices and leave no stone unturned to wipe out the evil of venereal disease by educative, legislative, chemical, and any other measures. But let us not think that the fear of infection will deter the whole of our manhood from indulging in a natural if deplorable habit.—I am, etc.,

January 30th.

TEMPORARY SURGEON R.N.

RISKS AND REWARDS.

SIR,—With reference to the letter of the "Undecorated Regular" medical officer in the BRITISH MEDICAL JOURNAL of January 25th, we do not understand how this officer arrives at such definite conclusions as those expressed in his letter. We see no reason why statistics which definitely show the higher honours being allotted to regular medical officers, in preference to auxiliary medical officers, should not be published in what is the most widely read medical journal, unless the regular R.A.M.C. fear publication of such statistics to the profession as a whole.

We do not agree with your "Undecorated Regular" correspondent when he states that military medical work is "cut and dried," but would venture to suggest, on the other hand, that, during active service, and especially in forward areas, it is anything but "cut and dried," but calls for initiative, foresight, endurance, and fixity of purpose of a high standard. The statistics shown in your JOURNAL give the regular officers as possessing far and away the larger number of D.S.O.'s in comparison to those given to auxiliary medical officers, although they number many more than regular medical officers.

Bearing in mind that the D.S.O. was given until quite recently as an immediate reward for gallantry as well as for continuous good service in the field, it seems strange that the regular officer, who has been seldom seen, for at least three years, anywhere near the forward area, should receive the greater number of D.S.O.'s. We would also point out that the great majority of units that work in the forward area are commanded and staffed by auxiliary medical officers, who have borne the brunt of the medical services in this war, and have gained for the R.A.M.C. the high reputation which it now enjoys.

With regard to experience, it should be pointed out that as far as field ambulances and casualty clearing stations are concerned (units in which the Territorial officers had been carefully and efficiently trained before the war), the regular R.A.M.C. officers had little practical experience owing to the non-existence of such units under peace-time serving conditions.—We are, etc.,

B.E.F., Jan. 26th.

FOUR FIELD AMBULANCE OFFICERS.

GRATUITIES OF TERRITORIAL MEDICAL OFFICERS.

SIR,—The suggestion of "T.F. Reservist," in your issue of January 25th, that gratuities on acting rank should be issued to all officers who had held such acting rank for six months and still held it on demobilization or on November 11th, 1918, would be as unfair as the existing army order.

Why should a man who held acting rank for over six months (in my own case for over eighteen months) be penalized just because he had the misfortune to be wounded a few months before the armistice?

I would suggest that gratuities on acting rank should be issued to all officers who held acting rank in proportion to the length of time the rank was held.—I am, etc.,

January 26th.

HONORARY MAJOR, S.R.

MEDICAL RESETTLEMENT.

SIR,—The letter of Dr. H. M. Stewart, Honorary Secretary of the Sydenham District Medical Society, in the BRITISH MEDICAL JOURNAL of January 18th is interesting. It is quite true that the question of equitable treatment of the doctors who have had to leave their practice in order to join the forces must have furnished much food for thought to those who stayed at home, and also that no general action has been taken.

I speak as the sole doctor of about three dozen who was forced to leave my town, mobilized on August 5th, 1914. I left, absolutely unprovided for, a single-handed practice worth about £1,200 a year, built up in the few preceding years by my sole efforts. It is inconceivable that such a practice should, "like the baseless fabric of a vision," fade away; and yet, in spite of repeated applications on my part to my *confrères* who have stayed at home, I have only received, up to the time of writing, less than £3 from two of them for private patients treated by them for me during my absence on military service. I am grateful that the panel fees are handled by a county committee. I have proven instances in which a *confrère* received fees from my patients (who since consulted me), but ignored my request that he should hand a share to me.

In addition to this, four desirable appointments have become vacant during the past year alone; two of them are permanently filled, one is semi-permanently filled under the Local Government Board scheme for treating venereal diseases, and one is still under consideration, but in no instance has a doctor been appointed who has done military service.

These are some of my own local conditions. Naturally, during four years of military service, I have heard of many others similar, and the impression they have produced is about to make itself felt in the shape of very strong general action, but on the part of those chiefly wronged.

The apparent intention of the resolution recorded by the Sydenham District Medical Society is commendable, but I fail to see who is to decide which particular patients "would presumably have gone to an absent colleague." Presumption will, I am afraid, lead to grave differences of opinion where money is concerned.—I am, etc.,

January 20th.

TIME BIDER.

THE FUTURE OF THE MEDICAL PROFESSION.

SIR,—Medical officers on foreign service have been deeply concerned with the trend of recent events in England as to what is going to happen to the profession in the near future. I have talked over the subject with many of my brother officers, and we are unanimously of the opinion that no radical changes should be instigated either by the Government or the various medical committees in England until either (a) those doctors who joined the R.A.M.C. since the outbreak of war are demobilized, or (b) every qualified medical man has been consulted (the machinery for doing this could easily be arranged) on that important question as to whether or not there is to be an all-round State medical service in England.

I can assure you, Sir, that the feeling is very strong on the subject, and I hope the BRITISH MEDICAL JOURNAL will, as hitherto, use its utmost endeavours to obtain equitable treatment for the profession as a whole.—I am, etc.,

B.E.F.

ACTING MAJOR R.A.M.C.(T.F.).

STATE MEDICAL AID CENTRES AND MEDICAL PRACTICE.

SIR,—The profession cannot already have forgotten the fight it had over the National Insurance Act of 1911, neither can it fail to remember the struggle that centred round the so-called Harmsworth Amendment, subsection 4 of section 15 of the principal Act—the section that guards the profession from being sweated by medical aid societies. We all knew in those days how strong was the feeling against this form of medical work, and that in no circumstances would it ever have obtained our help or recognition. But while the profession has guarded itself against medical aid societies being introduced through the Insurance Act, a march, it seems, has been stolen upon us to have this form of practice introduced in another way.

While the profession has been trustfully waiting developments in the way of arranging for medical attendance on dependants, the Local Government Board has set about the doing of it, and on July 30th, 1914, they issued a memorandum, recommending all local authorities to establish maternity and child welfare schemes. This has been followed by another memorandum of August 27th, 1917, strongly insisting on this policy, and formulating details of the scheme. In those details lies the threat to the freedom, status, and emoluments of the profession. Under the national insurance scheme free choice of doctor was the rock on which we stood, but in this maternity and child welfare scheme, Clause VI of the Local Government Board memorandum reads:

Medical attendance should be provided at the maternity and child welfare centre, and it should be regular and uniform—that is, the same doctor should attend at stated intervals. The Board do not approve of a rota of doctors, as ordinarily understood at a centre. Subject to this, the doctor may be the medical officer of health, or assistant medical officer, or a local practitioner.

Now from this it is plain that the centre is to be controlled by a single medical officer, attached to the centre. Indeed, the very nature of the method forbids a rota.

What work is embraced by the centre? The plan of procedure of the Local Government Board is that there should be a health visitor for every 400 births in any community, and it becomes the duty of the health visitor to visit each child as its birth is notified under the Notification of Births Act. This is the basis of the work, and it is a complete one. But the centre takes on other work, and the most approved plan is to appoint a health visitor for every 5,000 people, who undertakes the supervision of all children up to five years of age; she does the district work, follows up the recommendations of the school medical officer, and sees that the instructions of the tuberculosis officer are being attended to, besides arranging for maternity and pre-maternity cases. If she finds a child or mother requiring medical attention, her duty will be to report to the centre, and the medical officer of the centre then becomes responsible. The medical officer might at first ask the family doctor to carry out the necessary treatment, but for how long will people continue to pay private fees for work they have the right to obtain free of charge at the centre? It seems abundantly clear that the general medical practitioner is not intended to have any footing in maternity and child welfare centres. How will this affect the general practitioner? If the medical attention on children up to five years is taken from his charge; if he loses maternity and pre-maternity cases; if he further loses domiciliary attendance on tuberculosis and ceases to have any position with reference to school children between the ages of 5 and 15, what is there left for him to do?

Many of the changes indicated have the elements of good, but should they be carried out without the real sanction of the profession? And, further, must they be carried out to the profession's detriment? It will be a range indeed if medical aid societies, which the profession abhorred and determinedly fought against in 1911, are to be accepted and adopted in 1919 because they are State-aided and State-supported.

The profession has the right to ask, What is the British Medical Association doing in this matter? Well, the Annual Representative Meeting in 1915 issued a very nicely mannered statement and exposition of the grave dangers to the general medical practitioners if maternity and child welfare centres were established; and they further, in a mild way, suggested attendance by rota—to be told in August, 1917, by the Local Government Board that attendance by rota will not be permitted; and there the matter rests, except in this, that while the British Medical Association continues doing nothing the Local Government Board is pushing rapidly ahead and establishing centres.

May we trust the profession will recognize the occasion and take the situation in hand, and that while it advances the public good it will see to it that it preserves its traditions, its status, and its emoluments, and that it does not become sweated and exploited by State-aided and State-maintained medical institutions?—I am, etc.,

Cowdenheath, Jan. 30th.

WM. CRAIG, M.D., M.O.H.

THE REFORM OF MEDICAL EDUCATION.

SIR,—The article in the JOURNAL of January 25th, p. 107, on the reform of medical education contains much interesting matter for all readers. I particularly agree with the clause in which it supports the idea of the secondary schools being encouraged, and, if necessary, being enabled by grants to assist pupils who are destined for medicine and other kindred professional careers, by enabling them to commence their studies in the school. Secondary schools should teach such subjects as chemistry, biology, nature study, botany, physics, electricity, and mechanics, as well as they can be taught to the undergraduates or the students of a university institution. And these subjects under such circumstances might and should be acceptable at matriculation in a university. It ought to be possible for a parent to notify to the head master of a secondary school that his child is to be a doctor, a lawyer, an engineer, or to enter the Church, or into commercial life; and the last few years of his stay in the school could be devoted to such preparation for these careers as to make it possible for him to pass the necessary examination from the school directly into the university, and thereby save the expense, and, what is more important, the time expended in such studies and examinations, during university life, either internal or external. Every father of a family would welcome such a change and such a scheme. Moreover, there should be a unification of examination schemes. It is possible for any student at most universities to get credit at examinations in those subjects in which they have passed. But the University of London and the Royal University of Ireland, which is, like the former, an examining body only, require in most of their examinations that every student shall take up all subjects at each examination. The result is, that one who has failed in one subject before may fail in another afterwards owing to an exceptionally stiff paper. Thus, the college life and expenses of the student are needlessly prolonged.—I am, etc.,

Enfield, Jan. 20th.

FRED. TRESILIAN, M.D., F.R.C.P.Ed.

MEDICAL UNITY.

SIR,—Many of the members of the medical profession who attended the meeting at Wigmore Hall on February 2nd must feel that the words of a prominent civil servant present at the meeting only too aptly describe the impression left on our minds of far-reaching discord: "It is pitiable." If the scene witnessed at the close of the meeting, the demonstration which led to its adjournment, is typical of trade union methods, then may our profession be long saved from trade unionism.

This demonstration of complete lack of harmony and union, when an attempt is made to set up a representative committee of medical men to discuss medical matters with the Government, convinces me more than ever before of the unwisdom of destroying or even weakening the organization we already have—an organization which, whatever its faults, has done so much for the welfare of the medical profession. I refer to the British Medical Association. This is a democratic body, and can elect whatsoever leaders it wishes. If the present leaders are not to its liking the fault lies in the apathy of the individual members, although I am prepared to admit that it is by no means easy for medical men to take an active interest in the meetings of their Divisions, and feel that there is urgent need for the elaboration of some scheme whereby the opinions of those practising in rural districts might be more certainly ascertained.

But is not the cause of such discord as showed itself at Wigmore Hall mainly due to the fact that most of us are unaware of any active policy now before the profession on which we could unite? It is too much to ask us to be united for or against a hypothetical policy of the Government. Is it not time that we drew up a plan of our own after due consideration of the various schemes that have at one time or another been propounded—part-time medical service, a state service, or the scheme outlined by Sir Bertrand Dawson in his Cavendish lecture? We should know best what changes in our present system are required, what form of service would most develop our capacity for service for the good of the community; and I firmly believe that if we can show that we are working whole-heartedly for the good of the community the public will not behave ungenerously to us.—I am, etc.,

London, W., Feb. 3rd.

HAROLD H. SANGUINETTI.

The Services.

STATION HOSPITALS FOR INDIAN TROOPS.

THE following Army Instruction (India), dated November 19th, 1918, has been issued by the Government of India (Army Department):

1343. INTRODUCTION OF STATION HOSPITALS FOR INDIAN TROOPS AND FOLLOWERS.

It has been decided that, with effect from the 1st December, 1918, station hospitals for Indian troops and followers will be established in place of existing regimental and followers' hospitals.

2. Station hospitals for British troops will thereafter be known as "British station hospitals" and those for Indian troops and followers as "Indian station hospitals."

3. The system of command and administration in Indian station hospitals will be similar to that in hospitals for British troops.

4. All existing hospital arrangements for Indian troops and for regimental and departmental followers will be brought under one administrative control which will be exercised by the officer commanding the Indian station hospital. Officers of the Indian Medical Service, sub-assistant surgeons and subordinate hospital establishments will no longer be attached to Indian regimental units, but will form part of the establishment of Indian station hospitals.

5. Hospitals will be classified according to the total strength of Indian troops and followers forming the garrison as follows:

- 1st class Indian station hospital, where the strength of garrison (as above) is 3,000 and over.
- 2nd class Indian station hospital, where the strength of garrison (as above) is 2,000 and over.
- 3rd class Indian station hospital, where the strength of garrison (as above) is 1,000 and over.
- 4th class Indian station hospital, where the strength of garrison (as above) is 500 and over.
- 5th class Indian station hospital, where the strength of garrison (as above) is under 500.

The present classification of Indian station hospitals, which is only temporary, is shown in appendix "A" to this instruction. The permanent classification of hospitals will be carried out on the restoration of normal conditions.

6. Where more than one regimental, or combined hospital, already exists in a station, the local authorities will decide, and report to the Director of Medical Services in India for the information of the Government of India, which will be the Indian station hospital. The remaining outlying hospitals, which it is necessary to retain, will be designated and administered as section hospitals of the station hospital. The officer commanding station hospital will be in command of, and administer, all such section hospitals. Section hospitals will be supplied with equipment, medical stores and stationery from the station hospital.

7. For the period of the war, and until further instructions are issued, the Director, Medical Services in India, will appoint officers to command all first class Indian station hospitals and the hospitals at the following stations: Bakloh, Dharmasala, Almora, Shillong, Maymyo, Mandalay. Commanding officers of other hospitals will be appointed by the General Officer Commanding, Command or Independent Division, who will also appoint officers as second in command of all 1st and 2nd class station hospitals.

8. The rules governing the pay and allowances of officers of the Indian Medical Service are laid down in appendix "B" to this instruction.

9. Deputy and Assistant Directors, Medical Services, Divisions and Independent Brigades, will appoint sub-assistant surgeons to the subcharge of all Indian station hospitals.

Revised rates of subcharge allowances for sub-assistant surgeons will be announced hereafter.

10. Ward orderlies will be attached to regimental units for purposes of pay, clothing and rations, as at present. Details as regards the appointment, pay, and promotion of ward orderlies are given in appendix "C" to this instruction.

11. Orders will be issued shortly regarding the formation of a new corps to be designated the Indian Hospital Corps. This corps will combine, in one organization, the Army Bearer Corps, the Army Hospital Corps and the subordinate personnel of Indian station hospitals.

12. Temporary hospital writers and storekeepers will be engaged on the scales laid down in appendix "D" in which the rates of pay of storekeepers are given. These scales are in supersession of those laid down in Army Instruction (India) No. 1231 of 1918. Writers should be paid at the lowest rates on which they can be obtained. Both classes must sign the agreement on I.A.F. Z. 2255, the words "on field service or" in line 12 of the agreement, and "either" and "or out of" in line 13, being deleted in ink and initialed by the officer commanding hospital.

13. All existing regimental hospital followers and menial personnel of followers' hospitals, will, if they are willing, be temporarily transferred, together with their documents, to the Indian station hospital at the station in which they are serving. If not willing to be thus transferred, they will be discharged unless they are pensionable servants, when each individual case will be reported to the Director, Medical Services in India, for orders. The scale on which followers will be employed is

laid down in appendix "E." If, in order to complete this scale, it should be necessary to recruit personnel in addition to those transferred from regimental establishments, these should be engaged temporarily at the lowest rates of pay on which they can be obtained. The scale of clothing for all hospital followers (including those now serving) is given in appendix "F."

14. The instructions contained in Army Regulations, India, Volume VI, and Standing Orders for the Military Medical Services, regarding the duties of officers of the Royal Army Medical Corps and assistant surgeons will be generally applicable to officers of the Indian Medical Service and sub-assistant surgeons.

Particular attention must be paid to the detailing of officers and sub-assistant surgeons for medical and sanitary duties, outside hospitals, in connexion with the various units in each station, and for orderly duty.

15. Postage labels will be supplied to officers commanding Indian station hospitals by the Divisional or Brigade Deputy or Assistant Director, Medical Services, in the manner at present in force in the case of British station hospitals. Any funds required will be arranged for by the General Officer Commanding concerned in consultation with the Controller of Military Accounts.

16. Officers commanding Indian station hospitals will exercise the same financial powers as Senior Medical Officers, Indian Medical Service [Army Regulations, India, Volume III, paragraph 6 (vi)].

17. The allotments at present made by the Deputy and Assistant Directors, Medical Services, to Senior Medical Officers, Indian Medical Service, to meet contingencies, and for the purchase of articles of local supply, will, in future, be made to officers commanding Indian station hospitals.

18. The pay of officers of the Indian Medical Service, sub-assistant surgeons and hospital establishments will be drawn in accordance with the rules laid down in "Instructions, Staff" for drawing the pay of officers of the Royal Army Medical Corps, assistant surgeons and men of the Army Hospital Corps.

19. Pending the provision of pack stores in Indian station hospitals, Indian soldiers and followers, when admitted to hospital, will have with them only their chevrons, boots, lotahs, and the necessary cleaning materials. All other articles of clothing and equipment will, on the day on which a man is admitted to hospital, be removed and retained under regimental arrangements.

The officer commanding Indian station hospital will furnish the officer commanding unit with the names of all men who are to be discharged from hospital one day prior to their discharge. The officer commanding unit will return the men's clothing to hospital on the morning of the day of discharge.

20. Pending further orders the most suitable arrangements must be made for carrying on the station hospital system in existing permanent or temporary hospital buildings expanded by the provision of such temporary buildings as may be sanctioned on representations made to the Director, Medical Services in India.

21. Indian station hospitals will be dieted institutions, the scales of diet being as authorized in Army Instruction (India) No. 1277 of 1918. The necessary additional furniture and equipment have been sanctioned on a provisional basis in Army Instruction (India) No. 1231 of 1918. Pending the issue of revised scales of medical and surgical equipment, the equipment at present allowed will be continued in use.

22. The necessary amendments to regulations will be issued in due course.

23. Separate orders will be issued later in regard to the incidence of the extra expenditure entailed by these orders and the source from which it should be met.

A. H. BINGLEY, Major-General,
Secretary to the Government of India.

[5041 (D. M. S.)
D.]

Appendix "A" shows the classification of Indian station hospitals. There are 64 in the first class, 13 in the second class, 18 in the third class, 19 in the fourth class, and 34 in the fifth class.

Appendix "B" is as follows:

Pay and Allowances of Officers of the Indian Medical Service.

With effect from the 1st December, 1918, the grade pay of officers of the Indian Medical Service in military employment (with the exception of those holding appointments carrying staff pay or consolidated pay, or those for which special rates of pay have been authorized) will be as follows:

	Rs. per month.
Lieutenant-Colonel specially selected for increased pay	1,250
Lieutenant-Colonel	1,100
Major, after 3 years' service as Major	825
Major	750
Captain, after 10 years' total service	700
" " 7	650
" " 5	600
Captain	550
Lieutenant	450

Separate orders will be issued in regard to the emoluments of temporary officers of the Indian Medical Service under the scheme.

2. The above rates of pay represent the total remuneration for duties which officers of the Indian Medical Service (other than those holding appointments which carry staff or consolidated pay or for which special rates of pay have been authorized) may be called on to perform.

The following are also exceptions to this rule :

(a) the extra allowances included in Army Regulations, India, Volume I, paragraph 11 (a), except that authorized for medical charge of the Cavalry of the Corps of Guides which will be abolished;

(b) the specialist allowance authorized in Army Regulations, India, Volume I, paragraph 155 (d) (iv);

(c) the charge allowances referred to in paragraph 5 of this appendix.

3. The allowances for the additional and temporary medical charge of troops and followers, admissible to officers of the Royal Army Medical Corps, and Indian Medical Service, under Army Regulations, India, Volume I, paragraphs 11 (b), (c) and (d) and 117, and also all similar charge allowances for labour corps, etc., will be abolished.

4. The horse allowance at present admissible to officers of the Indian Medical Service in medical charge of Indian cavalry regiments (Army Regulations, India, Volume I, paragraph 264) will be abolished.

5. Charge allowance for officers commanding Indian station hospitals and second-in-command allowance for officers appointed second-in-command of first and second class Indian station hospitals, will be admissible at the following rates in addition to the rates of grade pay shown in paragraph 1 above :

(a) Charge Allowance.

				Rs. per mensem.
1st class hospitals	...	...	...	240
2nd "	...	...	...	180
3rd "	...	...	...	120
4th and 5th class hospitals	...	...	...	Nil

(b) Second-in-command Allowance.

1st class hospitals	...	...	...	120
2nd "	...	...	...	90

6. Officers, except those holding appointments which carry staff or consolidated pay, will, while on general leave in India, draw grade pay according to the scale given in paragraph 1 of this appendix.

7. The rates of pay and the rules governing the pay (including the pay while on general leave in India) of officers holding appointments which carry staff pay or consolidated pay will remain as at present.

8. If, under the new arrangements, the emoluments of any officer, now serving, fall below the present consolidated pay of an officer of his seniority in charge of a regiment (Army Regulations, India, Volume I, paragraph 11), the case should be submitted for the orders of the Government of India. The term emoluments, as used here, does not include the specialist allowance admissible under Army Regulations, India, Volume I, paragraph 155 (d) (iv).

Appendix "C" relates to the appointment, pay, and promotion of ward orderlies; it allows their employment up to eight men per 100 beds, and they will be chiefly pensioned and discharged soldiers. The pay will be that admissible under existing regulations, but there will be also nursing payment to ward orderlies certified to be proficient in nursing duties, at the rate of 2 rupees a month after one year's service, 4 rupees after five years, and 5 rupees after seven years' service.

Appendix "D" lays down the scale of temporary hospital writers and hospital storekeepers authorized for Indian station hospitals.

Appendix "E" lays down the scale of hospital followers and their clothing.

AUXILIARY ROYAL ARMY MEDICAL CORPS FUNDS.

THE usual quarterly meeting of the committee was held on January 31st, at 11, Chandos Street, W.1, when Colonel Ewen Maclean (chairman) was in the chair. Grants were made to the widows and orphans of four officers and to the widows and orphans of seven men of the rank and file. Widows or orphans of officers or men of the Auxiliary Royal Army Medical Corps requiring help should apply to the honorary secretary of the Funds at 11, Chandos Street, Cavendish Square, W.1.

THE medical journals of Spain are agitating for the establishment of a ministry of public health. The movement has the support of the leaders of the profession. Professor Ramon y Cajal, however, while strongly in favour of the proposal, points out that there are practical obstacles in the way of its adoption owing to the indifference of the governing classes in regard to hygiene and to economic and administrative difficulties. The distinguished physiologist, who is in his sixty-sixth year, mentions incidentally that the state of his health prevents his taking an active part in the campaign.

Obituary.

WE regret to record the death of Dr. WILLIAM GEORGE KEMP of Hastings, which occurred with tragic suddenness in a tramcar on January 24th. His health had been failing for some time, but no immediate apprehension was entertained. Dr. Kemp, who was born at Alnwick in 1846, was educated at King's School, Canterbury, and entered St. Bartholomew's Hospital in 1863. Four years later he took the M.R.C.S. Eng. and L.R.C.P. Lond. He went out to New Zealand the year after, as house-surgeon to the Nelson Hospital, and in 1870 began private practice in Wellington. He was ophthalmic surgeon to the Wellington Hospital, and had a wide consulting general practice. He was the first surgeon to perform ovariotomy in that country, where he was very highly esteemed for his skill and sterling worth. After his return to England in 1892, he took the M.D. Durh., but never practised or took any active part in medical affairs. He had been a member of the British Medical Association for many years. When he went to live at Hastings, ten years ago, he found a large number of friends who honoured and admired him for his high moral character and his charming disposition, which quickly commanded confidence and an affectionate regard. Dr. Kemp married in 1870 Charlotte, daughter of Dr. J. D. Greenwood, who survives him. He had four sons and three daughters. One daughter, a King's College Hospital Sister, was killed by a bomb while working at a Red Cross hospital in Belgium. One son is a major in the New Zealand Medical Corps, another is Captain R.A.M.C., both still in France; a third son is in practice in New Zealand. Dr. Kemp was one of the most loyal and patriotic of men, a staunch churchman, and a real Christian.

DR. SIMON ALEXANDER KUNY, late Captain R.A.M.C., died of influenza at New Somerset Hospital, Capetown, of which he was resident surgeon, on October 17th, 1918. He was the son of Dr. A. J. Kuny of Volksrust, Transvaal, and was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1915, subsequently taking a temporary commission in the R.A.M.C., in which he served with the British Expeditionary Force.

COLONEL JULES ISHAM ROUTH, A.M.S. (retired), died at Cheltenham on January 13th, aged 66. He was educated at Edinburgh University, and took the M.R.C.S. and L.R.C.P. Ed. in 1876. He entered the army as surgeon in 1878, attained the rank of colonel in 1904, and retired on half-pay in 1906. He served on the North-West frontier of India in the Tirah campaign of 1897-98, previous to which he had been one of the first medical officers employed as a volunteer in plague duty in Bombay when that disease broke out in India in 1896-97.

DR. HAROLD SINCLAIR COGHILL, West African Medical Staff, died at Guildford on January 24th, aged 38. He was the youngest son of the late Dr. J. G. Sinclair Coghill of Ventnor and Edinburgh, and was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1905. He also took the certificate of the London School of Tropical Medicine in 1908, and the Cambridge diploma in tropical medicine and hygiene in 1911. After acting as senior demonstrator in the London School of Tropical Medicine he joined the W.A.M.S. He served as a member of the Special Commission for the investigation of yellow fever and other non-malarial fever in West Africa in 1913, and recently held the post of assistant in the medical research institute at Lagos.

DR. VINCENZO CERVELLO, a well known Sicilian physician, who died recently, was born in 1854. He succeeded his father in the chair of *materia medica* at Palermo, and after a time migrated to the University of Catania as professor of the same subject. He returned to Palermo and published many monographs on the action of paraldehyde, iron, and other agents, and founded the *Archivio di Farmacologia e Terapeutica*. He established a sanatorium for tuberculous patients at Palermo and did such good work in combating epidemics and in the promotion of sanitary reform that the Italian Government awarded him a gold medal.

CAPTAIN ERNEST ALBERT WILLIAM HENLEY, New Zealand Medical Corps, died at Napier, New Zealand, on November 14th, 1918. He was the eldest and last surviving son of Mr. J. W. Henley of Shankill, co. Dublin, his brothers, Second Lieutenants F. L. Henley, Sherwood Foresters, and H. T. Henley, Royal Irish Rifles, having been killed in action in France in 1916 and 1917 respectively. He was educated at Trinity College, Dublin, where he graduated B.A. in 1898, M.B., B.Ch., and B.A.O. in 1901, and M.D. in 1911. At the university he gained a medical scholarship and the gold medal in physical science, also taking the gold medal for operative surgery at the Royal College of Surgeons, Ireland, and the Hudson scholarship at the Adelaide Hospital, Dublin, where he afterwards served as house-surgeon. In 1900 he went to New Zealand, where he settled in practice at Napier, and was for fourteen years secretary to the Hawkes Bay Branch of the British Medical Association. At the beginning of the war he joined the New Zealand Medical Corps, but was not sent on foreign service for health reasons.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following medical degrees were conferred at a congregation held on January 31st:

M.D.—S. G. Askey, A. G. Shera.
M.B.—W. T. Warwick.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia of the Royal College of Physicians of London was held on January 30th, when Dr. Norman Moore, the President, was in the chair.

The following were admitted Members of the College:

C. T. Champion de Crespigny, M.D. Melb., W. H. Grace, M.B. Lond., L.R.C.P., N. F. Hallows, M.B. Oxon., G. R. Pirie, M.B. Toronto, L.R.C.P., W. G. Porter, M.D. Brussels, L.R.C.P., A. F. Rook, L.R.C.P., T. W. Wadsworth, M.D. Liverpool.

Licences to practise physic were granted to sixty-four candidates who had passed the required examinations and had conformed to the by-laws and regulations.

Diplomas in public health were granted to the following candidates:

G. A. Birnie, M.B., Ch.B. Melb., J. A. Drake, M.B., B.S. Lond., L.R.C.P., M.R.C.S., T. H. Janieson, M.D. Edin., A. D. Loganadan, L.R.C.P., M.R.C.S., K. M. B. Simon, M.B. Toronto, L.C.P. and S. Ontario, P. Smith, M.D. Lond., L.R.C.P., M.R.C.S., J. Wetherston, M.D., Ch.B. Glasg.

The following were elected councillors on the nomination of the council:—Dr. Davy vice Dr. Guthrie, deceased; Drs. Head, Carr, Still, and Craig, vice Drs. Wethered, James Calvert, Sir James Galloway, and Dr. Ogle, who retire by rotation. Sir Francis Champneys was elected a representative on the Central Midwives Board, and Dr. Sidney Martin a representative on the senate of the University of London, vice Sir Frederick Taylor, resigned. An address was received from the Royal College of Physicians of Ireland on the occasion of the quatercentenary of the college. A gold Browne medal was received from Dr. Crawford.

The President announced that he had appointed Dr. Crawford to be Harviean orator and Dr. Beddard to be Bradshaw lecturer in 1919, and that the council had appointed Dr. Aldo Castellani to be Mikroy lecturer in 1920. Dr. Topley will give the Goulstonian lectures on the spread of bacterial infection, and Sir Humphry Rolleston the Lumleian lectures on cerebrospinal fever.

The following report was received from the Committee of Management:

The Committee recommend that the courses of instruction in pathology, practical pathology, and bacteriology at the University of Cape Town be accepted as fulfilling the requirements of the Regulations, Section II, par. XXI (d) and (h), 4, 5, 6, and 8.

The Committee of Management received applications from the National Hospital for Epilepsy and Paralysis, Queen Square, and from the Hospital for Sick Children, Great Ormond Street, for recognition as teaching institutions for students in clinical medicine, and for part of the medical clerkship and surgical dressership. Both these hospitals are already recognized as teaching institutions by the Universities of Oxford, Cambridge, London, and Durham.

The Committee of Management felt that it would be highly undesirable for any considerable amount of the time spent on clinical instruction and in holding appointments in special hospitals to take the place of the period required in a general hospital, but offered no objection to a period, not exceeding two months in all, for clerking and dressing being spent at these two hospitals or other special hospitals which might hereafter be recognized by the Committee of Management. With regard to an application by the Dean of University College Hospital Medical School to utilize this concession, the Committee of Management assumed that the National Hospital and the

Hospital for Sick Children would allow students from other medical schools than University College to go there in exactly the same way should the Deans of their schools desire to send them.

The Committee granted an application from the London School of Medicine for Women that students may be allowed to complete their gynaeological clerkships in the Elizabeth Garrett Anderson Hospital, in which 50 per cent. of the surgical cases are gynaeological.

Medical News.

THE annual meeting of the Medical Sickness, Annuity, and Life Assurance Friendly Society will be held at the offices of the society, 300, High Holborn, W.C., on Tuesday, March 25th, at 4 p.m.

MR. R. J. PYE-SMITH, consulting surgeon to the Sheffield Royal Hospital, and Emeritus Professor of Surgery in the University of Sheffield, which he has represented on the General Medical Council since 1911, is about to retire from practice, with the intention of residing in the south of England.

AN announcement is made in our advertising pages this week of a special "reconstruction" clinical course, in general medicine and surgery and all special departments, to be given at the West London Post-Graduate College from February 17th to April 11th.

THE fifth edition of Gould's *Elements of Surgical Diagnosis* is in the press. It has been revised by Sir Alfred Pearce Gould and Mr. Eric Pearce Gould, and much new matter introduced without, however, adding to the bulk of the volume.

THE first of the social meetings arranged by the Royal Society of Medicine for the reception of medical officers of the Navy, R.A.M.C., R.A.F., and the Overseas contingents and of the United States and Allies was held on Wednesday last, when Sir John Bland-Sutton gave a short address on gizzards and counterfeit gizzards. On Wednesday evening next Sir Arbuthnot Lane will speak on some aspects of stasis.

THE Lettsomian Lectures before the Medical Society of London will be delivered on March 10th, 17th, and 24th, at 9 p.m., by Colonel W. H. Willcox, C.B., C.M.G., M.D., whose subject will be jaundice. The annual oration will be delivered by Sir John Tweedy, F.R.C.S., on May 12th, at 9 p.m.

THE Child-Study Society has arranged a course of lectures to be given at the Royal Sanitary Institute, 90, Buckingham Palace Road, at 6 p.m. on alternate Thursdays, beginning on Thursday next, when Dr. C. W. Kimmins will speak on the significance of children's dreams.

THE municipal authorities of Milan recently accepted the offer of gratuitous vaccination against influenza made by Professor Serafino Bellanti, Director of the Institute of Serumtherapy. The Assessor of Hygiene, Dr. Luigi Veratti, at once placed the department of antityphoid inoculation in the health bureau at his disposal for the purpose, and within a few days more than a thousand persons were vaccinated.

SIR L. WORTHINGTON EVANS, Minister of Pensions, has appointed an "Officers' Friend," attached to the department, whose duty will be to give information to officers and officers' widows as to the retired pay, pensions, and allowances to which they are entitled under the Pay Warrant and the various pensions warrants. This official will attend daily at the Ministry of Pensions, Westminster House, 7, Millbank, London, S.W.1, and inquiries may be addressed to him there, either personally or by letter.

A Hunterian lecture on the action of chemical and physiological antiseptics in septic wounds will be given at the Royal College of Surgeons of England on February 12th by Mr. Alexander Fleming, F.R.C.S., assistant lecturer in bacteriology at St. Mary's Hospital Medical School. A Hunterian lecture on the early treatment of compound fractures and other severe injuries of the upper limb will be given by Mr. E. G. Slesinger, M.B., F.R.C.S., on February 17th. Two Arris and Gale lectures will be delivered, the one on February 19th by Mr. Edred M. Corner, surgeon to St. Thomas's Hospital, on the nature of scar tissue and painful amputation stumps; and the other on February 21st by Lieut.-Colonel E. M. Cowell, D.S.O., F.R.C.S., medical officer to Croydon General Hospital, on the initiation of wound shock and its relation to surgical shock. The lectures will be given at the college at 5 p.m. on each day.

Letters, Notes, and Answers.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR OF THE BRITISH MEDICAL JOURNAL, *Aitology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

THE TREATMENT OF WAR PSYCHONEUROSES.

CAPTAIN E. PRIDEAUX, R.A.M.C.(T.), Fwell War Hospital, writes: In my memorandum under this heading (January 11th) I joined issue with Dr. Middlemiss on a question of fact only. He asked, "Do we, as a matter of fact, find that the patients are unable to recall the emotional disturbance which has led up to the present disorder?" I stated that my results had convinced me that forgotten experiences are the rule in psychoneurotic patients, and that Dr. Middlemiss was not justified in answering this question in the negative without analysing cases from this point of view. In his memorandum (February 1st) he asks from what additional symptoms the cases quoted suffered, and if these also were to be referred to a forgotten incident, either the one quoted or some not identified. The patients suffered from general symptoms of anxiety neurosis with depression, and these symptoms disappeared after revival of all their war experiences as soon as they were able to talk about them without emotion, but I could not say to what particular incidents the symptoms were due. I would refer Dr. Middlemiss to his letter of December 21st, 1918, in which he states, "Where the all-pervading sense of depression is present, argument, persuasion, and counter suggestion are usually futile," and ask him what form of treatment is available for the other observers "equally successful in their results, and this without invoking the particular agency he favours, and, indeed, in many cases by working on apparently diametrically opposite lines"?

INCREASED GRANTS TO INSURANCE PRACTITIONERS.

CORVUS writes: Some thousands of panel practitioners have recently made application to the Insurance Commissioners for the war bonus recently granted. That bonus is by no means satisfactory, either in amount or in the principle of its distribution, as a recognition of increased work performed under conditions implying an actual diminution in the value of most of our practices. Still it is a tangible recognition of the justice of the claim for some increase in remuneration which we have been urging for so long.

I desire to point out that the obtaining of this grant is due, in the main, to the action, persistent and consistent, of the Insurance Acts Committee of the British Medical Association, acting after considering representations made to them by various Panel Committees. There is no other body or society of medical men which could have done so much for the panel practitioner. Yet, while all of these latter will participate in the grant (for I do not suppose any of them will decline to do so), a very large percentage are not members of the Association. If they realize that the bonus they are about to receive is the result of the pressure put upon the Commissioners by the British Medical Association through its Insurance Acts Committee, surely they might at least contribute £2s. each and become members of the Association. I wish to suggest this course particularly to members of the Medico-Political Union.

The British Medical Association is not yet a perfect body in any way. Seeing that none of its members are such, it would be too much to expect. But it can, must, and will be improved. Much has been done. More remains to be done. But it must be done by us, its members, not by outsiders. Reform must come from within, not from without. Let the disappointed and discontented non-members join up and lend a hand in the process of renovation and reconstruction, or else let them remain outside and hold their peace.

A PART-TIME STATE MEDICAL SERVICE.

We have received from Dr. H. E. C. Keith Murray (Burley, Hants) a pamphlet written by him with the title, *A Ministry of Health, embodying a Part-time State Medical Service and State Insurance Scheme*. He regards it as highly improbable that any whole-time State medical service will be introduced at present, or in the near future, owing to its unpopularity with the majority of the medical profession and the lack of support the suggestion has received from the public generally, and the Labour Party and the friendly societies in particular. He, therefore, puts forward in brief outline a suggested

scheme under which the medical personnel of the service would consist of both whole-time and part-time officers. The former would include the members of hospital and other staffs, district consultants, referees, and public health medical officers (such posts being as far as possible filled by demobilized R.A.M.C. men without practices). The part-time medical personnel would consist of general practitioners.

Dr. Keith Murray proposes that the whole-time staffs should receive salaries ranging from £100 to £2,000 a year, in some cases with board or travelling allowances—for instance, house surgeons and travelling consultants. For the part-time staff of general practitioners who would be grouped in panels, he considers a capitation fee of 10s. a year preferable to a system of payment for attendance. The midwifery fee, he suggests, should range between two and five guineas. Dispensing by doctors, where this is unavoidable, should be paid at the annual rate of 2s. 6d. a head. There should be a mileage fee of 1s. each way for every mile over two miles. Anaesthetics, autopsies, operations, etc., should command a special fee of from one to five guineas.

Dr. Keith Murray's skeleton scheme contemplates provision for State dental and nursing services, the endowment of medical research, the absorption of the whole insurance organization by the State, and the State ownership and administration of hospitals, dispensaries, sanatoriums, asylums, and infirmaries. Lastly, he has a vision of a comprehensive future medical service open to all, with free medical education, competitive entrance examinations, choice of service (civil or military), a system of promotion by (a) examination, and (b) service, and the provision of pensions.

MORTALITY AMONG AMERICAN DOCTORS IN 1918.

DURING 1918 the deaths of 2,616 medical practitioners in the United States and Canada were recorded in the *Journal of the American Medical Association*. On an estimate of a total number of 155,000 practitioners this is equivalent to an annual death-rate of 16.88 per 1,000. The average mortality for the period of sixteen years 1902 to 1918, inclusive, was 15.61 per 1,000. Of the deceased, 474 were between 51 and 60 years of age, 463 between 61 and 70, 358 between 71 and 80, 160 between 81 and 90, and 18 between 91 and 100. Twenty-one deaths were due to general diseases, 261 to diseases of the nervous system, 331 to diseases of the respiratory system, 98 to diseases of the digestive organs, 134 to diseases of the genito-urinary apparatus, 318 to senility, 39 to suicide, 89 to accident, 15 to homicide, and 69 followed surgical operations. In the period from 1902 to 1917, inclusive, the percentage of deaths from pneumonia in the total mortality varied from 5.62, the lowest point, in 1914 to 9.47, the highest, in 1916. In the first nine months of 1918 the percentage was 12.5. The number of deaths from pneumonia and influenza in the last three months of the year brought the percentage of deaths from these diseases in 1918 up to 30.69, an unprecedented mortality. Of the 89 accidental deaths, 24 were caused by automobile, 16 by automobile-railway (grade crossings), 10 by falls, 8 by railway, 4 by poison, 3 each by fires, drowning, sunstroke, and unclassified; 2 each by burns, injuries inflicted by animals, and explosion; 1 each by Roentgen-ray burns, poisonous gases, fracture, freezing, lightning, starvation, firearms, injuries in mines, crushing, and asphyxia. The modes of suicide were by firearms, 20; by poison and cutting instruments, each 6; by strangulation, 3; by asphyxia, drowning, jumping from high places, and unclassified, each 1. Of the deceased doctors, 2 had been members of Congress, 1 an ambassador, 2 consuls, 4 members of State Senates, 24 members of the lower houses of legislature, and 33 mayors.

THE JAPANESE FLY-TRAP.

IN the JOURNAL of January 5th, 1918, Captain N. S. Gilchrist described an ingenious apparatus known as the Japanese fly-trap. We have had many inquiries from readers as to where this can be procured in England, and have referred the question to Captain Gilchrist, who replies from Alexandria that the fly-trap is not, so far as he is aware, at present on the general market in Europe. Those in use in Egypt were sent from Japan as a present to the military medical authorities for trial. The apparatus is believed to be now on sale in India, and as soon as shipping is available it should be procurable in England also. Captain Gilchrist adds that it has been copied by skilled workmen in the army, but so far not with much success.

THE appointment of certifying surgeon for Wolston (Warwick) is vacant.

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THE PATHOGENESIS OF DEFICIENCY DISEASE.*

[WITH SPECIAL PLATE.]

ROBERT McCARRISON, M.D., D.Sc., F.R.C.P.,

BREVET LIEUTENANT-COLONEL, I.M.S.

(From the Pasteur Institute of Southern India, Coonoor.)

(Abstract.)

In perusing the literature of disease due to deficiency of certain accessory food factors one cannot fail to be struck by the fact that however complete our observations have been in some directions there are others in which inquiry has been almost wholly neglected. The want of substances essential for the normal metabolism of the human or animal body suggests the need for examining the effects of their deficiency on the organs responsible for digestion and assimilation and for the regulation of metabolic processes. Yet our knowledge of these effects is very scanty. The influence of "vitaminic" deficiency on the adrenal glands, on the pancreas, on the liver and the spleen, is, so far as I can ascertain from available literature, unknown; while that on the thyroid apparatus has been but incompletely studied. Nor are we better informed with respect to other important structures of the body, as, for example, the pituitary gland and the reproductive organs. It has seemed to me desirable, therefore, to attempt to fill some of these gaps in our knowledge.

The morbid anatomical findings which I have to record will, I hope, aid in a clearer comprehension of the genesis of diseases resulting from deficiency of certain accessory food factors—not only as regards their grosser evidences, as exemplified by beri-beri, but also as regards their minor manifestations. It is rare that the practising physician, outside the tropics, meets with morbid states resulting from complete deprivation of accessory food factors. My own clinical experience leads me to believe that many are the minor maladies associated with the incomplete provision of these substances in the food of children especially, or with their incomplete assimilation. Be this as it may, the laboratory experience gained in the prosecution of this research has afforded me no small measure of assistance in dealing with cases of "bilious vomiting," acidosis, mucous disease, and other metabolic disorders of childhood which have of late been referred to me. I desire, therefore, to draw the attention of physicians, especially those connected with the great children's hospitals, to the effects of "vitaminic" deficiency not only on the central nervous system, but also on the liver, the pancreas, the spleen, the pituitary, the thymus, the thyroid, the reproductive organs, and the adrenal sympathetic system; the functional perfection of all being of such vital importance to the growing child.

In considering these problems in the laboratory it is necessary to observe the results of "vitaminic" deficiency

in healthy animals and also to consider them in connexion with other pathogenic factors which may operate in nature. For example, both inanition and a diet too rich in starch and too poor in "vitamines" lead to depression of biliary, pancreatic, and gastro-intestinal function. If these organs are exposed in addition to the influence of toxic or bacterial agencies, their depression will be manifestly greater. The purity of laboratory experimentation is rarely repeated in nature. The manifold toxic influences to which human beings are subjected under conditions of food deficiency must play an important part in further depressing the functional activity of these organs and tissues on which normal metabolism is dependent. The toxic products of intestinal bacteria or intestinal parasites may thus assume a rôle of high importance in the genesis of morbid states which are, no doubt, initiated by the dietetic defect.

During the year 1914, and during 1918, I fed a large number of pigeons on a diet consisting solely of polished rice—that is to say, on a diet composed mainly of starch, with less than 10 per cent. of protein, and with complete absence of accessory food factors; 168 of these birds developed polyneuritis avium within the period of the experiments. The heart's blood and the internal organs of 142 birds so fed were examined bacteriologically at autopsy; of these, 94 were

found to have had concurrent septicaemic infections of various kinds, while the heart's blood and organs of 48 were sterile. Four out of 142 had tuberculous disease of the lungs or abdominal viscera, or both.

Seventy-two pigeons were employed as controls; the blood and internal organs of 63 were examined bacteriologically at the time of

death. Six were found to have septicaemic infections of various kinds; two had tuberculous peritonitis. The incidence of tuberculous disease in the pigeons employed was thus 2.7 per cent. The organs of a large number of these birds were weighed immediately after death.

CONCLUSIONS.

The following conclusions have been reached as a result of clinical, morbid anatomical, histological, and bacteriological observations. For details of the research the full paper, which will be published in the *Indian Journal of Medical Research*, should be consulted.

1. The absence of certain accessory food factors from the dietary—improperly termed "anti-neuritic"—leads not only to functional and degenerative changes in the central nervous system, but to similar changes in every organ and tissue of the body. The morbid state to which their absence gives rise is not a neuritis.

2. The symptom-complex resulting from the absence of these substances is due (a) to chronic inanition; (b) to

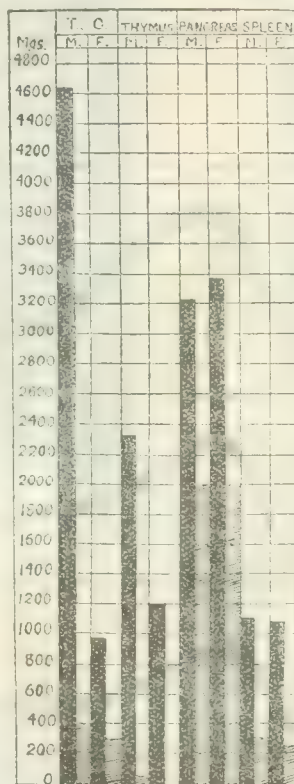
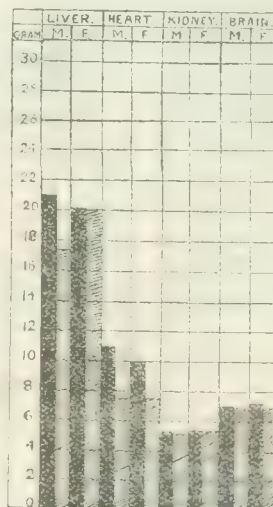


Chart showing weights of organs, per kilo of body weight, from control pigeons (35 in number) and from pigeons suffering from avian beri-beri (34 in number). Organs sterile. Note the great hypertrophy of the adrenal glands and the great atrophy of the thymus, the reproductive glands, the spleen, and the pancreas in diseased birds. Weights of organs calculated against body weight of birds at the time the vitamin free diet was commenced. Black columns = control pigeons; shaded columns = diseased pigeons; T = testicle; O = ovary.



* The original paper of which this is an abstract contains full experimental, clinical, and morbid anatomical details. It will appear in an early number of the *Indian Journal of Medical Research*.

derangement of function of the organs of digestion and assimilation; (c) to disordered endocrine function; (d) to malnutrition of the nervous system, and (e) to hyper-adrenalinaemia.

3. Certain organs undergo hypertrophy; others atrophy (Figs. 1 and 2). Those which hypertrophy are the adrenals. Those which atrophy, and in the order of severity named, are the thymus, the testicles, the spleen, the ovary, the pancreas, the heart, the liver, the kidneys, the stomach, the thyroid, and the brain (see chart). The pituitary gland showed in adult birds a slight tendency to enlargement in males only.

4. The enlargement of the adrenals is a true hypertrophy in so far as it is associated with a proportionate increase of the glands' adrenalin content. The quantity and quality of adrenalin in the hypertrophied organ is, area for area, approximately the same as that found in the adrenals in health. The hypertrophy is equally well marked in both sexes.

5. Oedema has invariably (100 per cent.) been associated with great hypertrophy of the adrenal glands, while 85 per cent. of all cases having great hypertrophy of these organs had oedema in some form. The amount of adrenalin, as determined by physiological methods, in such cases has been considerably in excess of that found in cases not presenting this symptom, and greatly in excess of that found in normal adrenals.

6. Inanition gives rise to a similar state of adrenal hypertrophy, and to a similar state of atrophy of other organs, the brain excepted.

7. The oedema of inanition and of beri-beri is believed to be initiated by the increased intracapillary pressure which results from the increased production of adrenalin, acting in association with malnutrition of the tissues. Failure of the circulation and venous stasis may subsequently contribute to it. Age is an important factor determining its occurrence. This finding is held to account in great measure for the occurrence of "war oedema" amongst prisoners of war in Germany.

8. Wet beri-beri and dry beri-beri are essentially the same disease; the former differs from the latter in the greater derangement of the adrenal glands.

9. Gastric, intestinal, biliary and pancreatic insufficiency are important consequences of a dietary too rich in starch and too poor in "vitamines" and other essential constituents of the food. It is suggested that some of the obscure metabolic disorders of childhood might be examined from this viewpoint as well as from that of endocrine gland starvation.

10. A state of acidosis results from the absence of so-called "anti-neuritic vitamins"; this state is due to the imperfect metabolism of carbohydrates and to acid fermentation of starches in the intestinal tract. Clinically, it is evidenced by progressive slowing and deepening of the respirations.

11. Great atrophy of muscular tissue results from deficiency of accessory food factors; it is due in part to the disturbance of carbohydrate metabolism in consequence of disordered endocrine function, in part to the action of the adrenals in supplying blood to the vegetative organs of the body at the expense of the muscles.

12. Profound atrophy of the reproductive organs is an important consequence of "vitaminic" deficiency. It leads to the cessation of the function of spermatogenesis

(Figs. 3 and 4). In the human subject such degrees of atrophy would result in sterility in males and in amenorrhoea and sterility in females. This finding is held to account in great measure for the occurrence of "war amenorrhoea."

13. The central nervous system atrophies little; paralytic symptoms, when they occur, are due mainly to impaired functional activity of nerve cells; much more rarely to their degeneration.

14. It is thought that, because of their atrophy out of all proportion to other tissues, the thymus, the testicles, the ovary, and the spleen provide a reserve of accessory food factors for use on occasions of metabolic stress. This reserve, however, is rapidly exhausted.

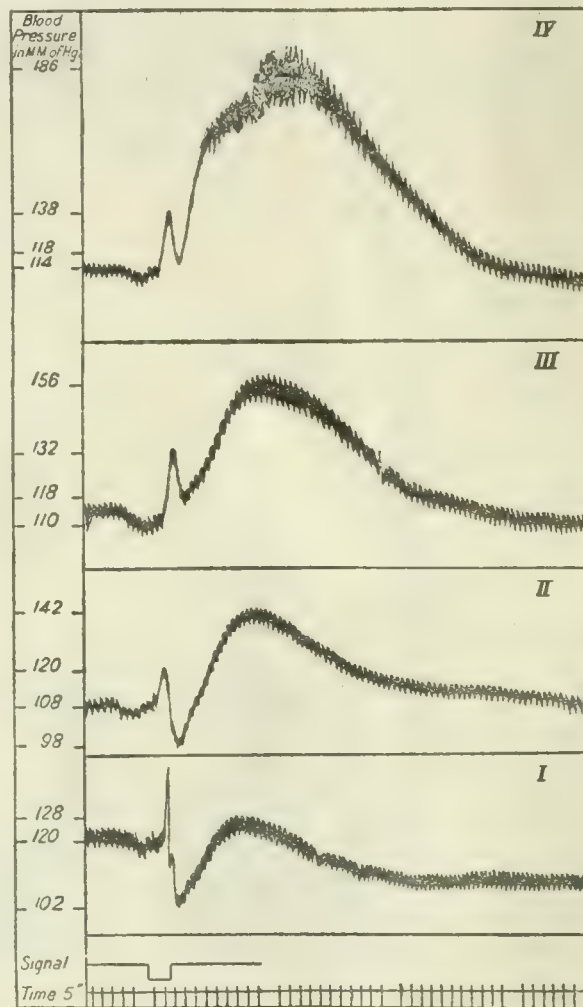
15. The bones are thinned, and there is a loss of bone marrow.

16. The red cells of the blood are diminished by about 20 per cent.

17. The whole morbid process is believed to be the result of nuclear starvation of all tissue cells. Even the adrenals, which alone of all organs of the body undergo enlargement, show on section changes in some of their cells indicative of nuclear starvation. Accessory food factors are nuclear nourishers.

18. Finally, although deficiency of certain accessory food factors is the essential etiological agent in the genesis of beri-beri, it is held that infectious and parasitic agencies are often important causes determining the onset of symptoms.

"Vitaminic" deficiency renders the body very liable to be overrun by the rank growth of bacteria.



Kymographic tracings of arterial blood pressure in sheep weighing 35 lb. I. Injection into jugular of an emulsion of both adrenals, weighing 16 mg., from a healthy pigeon. II. Injection into jugular of 5 mg. of adrenalin (commercial solution 1 in 1000). III. Injection into jugular of an emulsion of both adrenals, weighing 28 mg., from a pigeon which died of inanition. IV. Injection into jugular of an emulsion of both adrenals, weighing 72 mg., from a pigeon which died of beri-beri with pronounced oedema.

COLONEL A. W. SHEEN, A.M.S.(T.F.), of Cardiff, at present consulting surgeon, War Hospital, Southern Command, India, recently contributed to the *Indian Medical Gazette* a paper on the principles of military orthopaedics and on the constitution of an orthopaedic hospital. He advised that such a hospital should be placed in a bracing locality, easily accessible by railway, and that, in addition to the ordinary hospital departments, it should have electro-therapeutic, hypnotic, massage, and mechanotherapeutic departments, measuring room, bath and x-ray rooms, an operation room, a splint and appliance department, and workshops where the men can do real work and at the same time overcome disabilities. Cases should be grouped in wards according to their nature. In conclusion, he laid it down that early diagnosis and early continuous treatment in large specially staffed and completely equipped hospitals are essential. The motto of such a hospital should be "patience and perseverance."

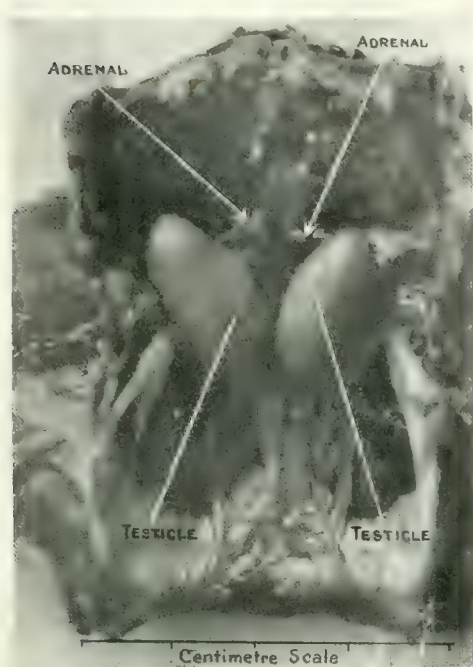
LIEUT.-COLONEL R. MCCARRISON, L.M.S.: THE PATHOGENESIS OF DEFICIENCY DISEASE. 2

FIG. 1.—Adrenals and testicles from a healthy adult pigeon. Upper poles of testicles slightly everted to show the underlying adrenals. Average weight of adrenals per kilo of body weight in adult male pigeons 100.3 mg.; average weight of testicles in ditto per kilo 4.543 grams.



FIG. 2.—Showing effect of a vitamine-free diet on the adrenals and testicles. From a case of avian beri-beri in pigeon. Note the great hypertrophy of the adrenals and the enormous atrophy of the testicles. Average weight of adrenals per kilo of body weight in male pigeons which have died of beri-beri 139.5 mg.; average weight of testicles in ditto 0.4015 gram.

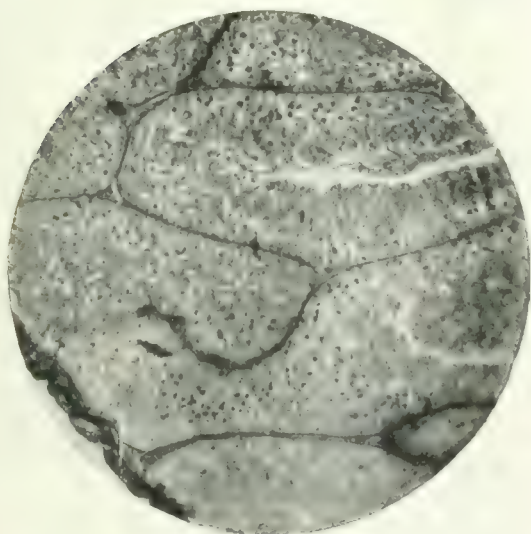


FIG. 3.—Section of normal testicle of pigeon. $\times 95$.



FIG. 4.—Section of pigeon's testicle ($\times 95$), showing effect of a diet deficient in "antineuritic vitamins." Note great contraction of tubules, thickening of intertubular tissue, and almost complete absence of sperm elements.



FIG. 1.—Full term central placenta praevia. The dark shading denotes the increased area and distribution of the placenta (Reduced.)



FIGS. 4 AND 5.—Low lateral and overlapping placenta praevia. Fig. 4 shows the lower third of the placenta, thickened and indurated by thrombosis. (Reduced.)

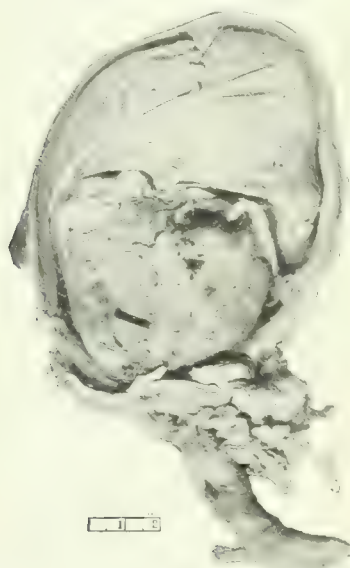


FIG. 2.—Central placenta praevia at full term. The uterus laid open to display placenta and fetus after version. (Reduced.)

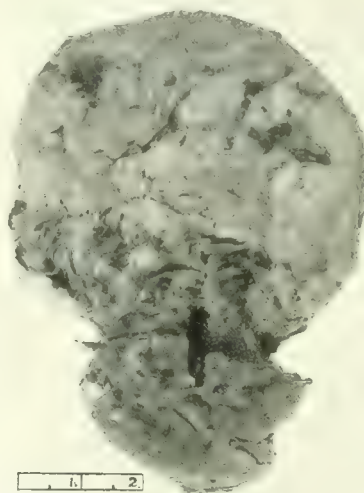


FIG. 6.—Showing a tongue-shaped clot continuous with the placental margin. From a case of lateral placenta praevia. (Reduced.)



FIG. 3.—Dead fetus; death due to placental obstruction and placental damage incurred during labour. (Reduced.)



FIG. 7.—Large, flattened out encephalo-meningocele. (Reduced.)

PLACENTA PRAEVA.

[WITH SPECIAL PLATE.]

BY

H. BRIGGS, M.B., F.R.C.S.ENG.,

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY IN THE
UNIVERSITY OF LIVERPOOL.

A LITERARY expert whose brilliant work is justly revered writes: "Every book that can be called a book has had one interested and excited reader." Unsympathetic isolation has not been the fate of textbooks on midwifery; on the whole, they have been welcome and reliable guides to numerous readers, and highly creditable to their authors.

Exception cannot be taken to their chapters on *ante-partum* haemorrhage. The verbosity of the older writers on placenta praevia recalls the literary clothing of the political wisdom of Burke.

Placenta praevia, notwithstanding the complete literature and the increasingly successful treatment of its haemorrhage, still continues to repeat its chilling spectacle of an avoidable stillbirth.

A group of specimens illustrating various types of these avoidable stillbirths is available in the obstetrical museum of the University of Liverpool. The corresponding clinical situation appeals for amendment, which must be reached by earlier concentration and co-operation concerning three important particulars: (1) The *ante partum* haemorrhage; (2) the viability of the fetus; and (3) the bulk and area of the placenta within the obstruction zone.

Collectively, the three are pertinent to pregnancy and labour when the placenta praevia is central, that is, complete, or almost central, that is, low lateral and overlapping, at, or after, the thirty-sixth week of gestation.

Singly, the *ante-partum* haemorrhage demands the maximum of attention. This it has received by a liberal sacrifice of the fetus as a maternal plug.

A fetus alive and situate mostly above the obstruction of a thickened and damaged placenta possesses faint prospects of survival. Only a speedy and safe birth-route can supply the whole of the requirements of labour in the graver degrees of placenta praevia in advanced pregnancy.

Let me give two examples:

CASE I.—Caesarean Section for Central Placenta Praevia. (37½ week.)

On September 1st, 1918, Dr. Moss, of West Kirby, called upon me with the information that he believed a central placenta praevia in one of his patients, a 6-para aged 40, had led to two smart haemorrhages—lasting two days and one day with a week's interval—at the thirty-fifth and thirty-sixth week of gestation. Clearly the Maternity Hospital was urgently the place for the patient, and September 10th was mentioned for the operation, provided bleeding did not return in the interval.

Bleeding did return on September 6th, exactly at the 37½ week of gestation. At 7 a.m. the trickle of blood was noticed, and at 10.15 a.m. its volume was increasing; there were no clots. Caesarean section was performed at noon, and a child, 6 lb. 3 oz., was extracted alive. The uterine attachments of the placenta were four-fifths to the left and one-fifth to the right of the cervix, mainly along the anterior wall of the uterus. The placenta weighed 12½ oz.; it had partly underlain the uterine incision, as shown by the notch, measuring 1½ inches, inflicted in its upper border. The patient convalesced normally. She and her breast-fed infant left the hospital in good health seventeen days after the Caesarean section.

In this case Dr. Moss concentrated his attention on the early complete diagnosis from the smart haemorrhages and the detection of the living fetus, in the first vertex position, and of the placenta around the cervix in the lower zone of the uterus on vaginal and abdominal palpation. Confirmation of Dr. Moss's diagnosis was acknowledged in hospital by all of us in our efforts, amid favourable resources for operation, to respond rightly and fully to the opportunity.

CASE II.—Caesarean Section for a Low Lateral Placenta Praevia. (Full Term.)

A primigravida, aged 39; in labour. The fetus, in the first vertex position, above the brim of a flat pelvis, was out of reach on ordinary internal examination. There had been an initial smart haemorrhage. Caesarean section, performed on March 1st, 1917, conferred safety on the mother and preserved the life of the male child, 7 lb. 1½ oz. in weight. The prompt transference of the patient to the Maternity Hospital after an early diagnosis of a low lateral placenta praevia was due to the care and foresight of Dr. McIntyre Brown of West Kirby.

Soon after the patient was discharged from hospital her convalescence was delayed by mild post-operative phlebitis.

The bright clinical aspects, just presented, encouraged early concerted efforts. The cheerless contrasts—as silent object lessons—loom in the Obstetrical Museum.

Full Term Central Placenta Praevia.

In 1914, in the ambulance on its way to the Liverpool Maternity Hospital, a woman died of haemorrhage at the full term of gestation. A central placenta praevia, an exceptionally well-grown male fetus of large size in the first vertex position, a cervix not dilated, and an inappreciable separation of the placenta, betrayed a group of physical conditions for clinical discernment. The dark shading in the photograph (Fig. 1) denotes the increased area and the distribution of the placenta.

Clinical recognition of the placenta praevia on palpation in the vaginal fornices around the undilated cervix is more than a mere project towards the advancement of obstetrical resource. The whole specimen appeals to the eye, awakens clinical effort, and pleads for Caesarean section.

Unfortunately its clinical history remains a blank after oft-repeated inquiries by many persons in various directions. There may or may not have been reasonable opportunities for observation, advice, or action; the absence of any preliminary warning by an *ante-partum* haemorrhage was not proved; as a very rare coincidence this may be admitted as possible.

By ante-natal officers and by practising obstetricians the anatomical evidence will be appreciated, especially in its practical interpretations. The warning haemorrhage, the guidance through the subsequent interval and its hazards preceding operation, and the facilities for Caesarean section, are a formidable total. These essential considerations emphasize the need for an earnest grasp of the significance of the *ante-partum* haemorrhage. Otherwise, even version may be too late.

Central Placenta Praevia at Full Term.

In the case from which this specimen (Fig. 2) was taken there were a sharp warning haemorrhage of short duration in the course of the night of March 10th, 1913, and a recurrence of haemorrhage with the commencement of labour a week later, at 2 a.m. on March 18th. There was increasing collapse during the twelve and a half hour delay in sending for the doctor and in the admission of the patient to hospital.

After admission at 2.30 p.m. the profound collapse was treated by intravenous and subcutaneous salines and pituitrin. At that time the bleeding had ceased, but as a precaution against further haemorrhage, after the dislodgement of clots, podalic version was performed and a leg was brought through the digitally perforated placenta; the membranes were beyond reach.

There was no further bleeding; at 6.45 p.m., four and a quarter hours later, the maternal shock ended fatally. The patient was a married woman, aged 30, who had had four previous normal labours.

Fig. 2 represents the uterus laid open to display the placenta and fetus after version.

To look back at the whole of the facts of this full-term labour is to realize the room for amending efforts, more particularly against delay; also clearly, if a diagnosis was made, it was not acted upon prior to the admission of the patient into hospital. At this stage of the inquiry judgement may be balanced.

These two specimens (Figs. 1 and 2) have demonstrated the dual fatality—to mother and fetus—attributable to haemorrhage. The specimens about to be described (Figs. 3, 4, and 5) will reveal the single fatality—to the fetus—that placental obstruction and placental damage incurred during labour may cause.

The specimen shown in Fig. 3 will convince any who may still need to be convinced that, when a considerable delay and a moderate haemorrhage in the first stage have manifested their risks, version is more defensible than Caesarean section, especially for a woman aged 37 already the mother of seven children, all living. With a less numerous family a prospective stillbirth in such a formidable setting digs more deeply and excites inquiry. If the specimen and its clinical history are considered together, the preventable stillbirth awakens practical sympathy.

Central Placenta Praevia (Thirty-fifth Week).

The estimated full term was due early in July, 1913. There were reports of two sharp haemorrhages, one of short duration on May 1st and the second at 10.30 p.m. on June 1st, treated by a vaginal pack until 9 a.m. on June 2nd, when blood reappeared at the vulva through the saturated pack.

The patient arrived in hospital at 5 p.m. on June 2nd. Then were reported: Two-fingers' dilatation of the cervix, a vertex presentation, and complete placenta praevia. The management consisted in digital perforation of the placenta, internal

version, and the lodgement of the half-breech of the fetus within the placental girdle (Fig. 3). At 7.15 p.m., two hours after version, the stillborn female child came through the placenta. The fetus and placenta together weighed 6 lb. 13 oz. The patient recovered. The total loss of blood had not been severe.

The prominent incidents of the labour were, first, the delay early in the first stage due to the bulk and area of the placenta within the obstruction zone; and, secondly, the abolition later of obstruction. During the second stage the freely perforated and damaged placenta as a girdle above the pelvic brim permitted the expulsion of the fetus.

The fetal sacrifice involved in this effective method of providing for maternal safety cannot be avoided by the alternative of cervical dilatation by the Champetier de Ribes bag. Cervical dilatation does not abolish placental obstruction and placental damage; these are potent causes of stillbirth, and their effects become vividly apparent in the specimen illustrated in Figs. 4 and 5, which establish the reality and gravity of placental obstruction and placental damage.

Low Lateral and Overlapping Placenta Praevia (Thirty-fifth Week).

A 4-para, aged 29, was admitted into the Maternity Hospital on January 2nd, 1916, at 10.30 a.m., with slight haemorrhage, which gradually increased. At 4.30 p.m. a Champetier de Ribes's bag was inserted after perforation of the membranes; when the bag was placed the separated lower third of the placenta was discovered, thickened and indurated by thrombosis (Fig. 4); it hung down, over and below the promontory in the sacral hollow, diminishing the available conjugate; the head of the fetus remained loose above the brim.

At 5.15 p.m. the cervix was fully dilated; the Champetier de Ribes bag was removed; the head was still lying loose above the brim. Bipolar version was preferable to forceps. Fetal heart then heard, 130. The thick placental mass was clearly an intra-pelvic obstruction, $1\frac{1}{2}$ in. to 1 in. in thickness. At 8.20 p.m. the dead-born male fetus (5 lb. 11 oz.) was spontaneously expelled; also the placenta, 1 lb. 5½ oz. The mother recovered.

Placental obstruction to labour is incontestable. Damage to the placenta occurs.

In the presence of placental obstruction the rupture of the membranes is itself an incomplete step in treatment, to be followed by a usually slow labour and a stillbirth. The latter, as the rule, is even to be expected when the more favourable vertex presentation has been maintained and perhaps an accelerated forceps extraction adopted.

Variations in the bulk and area of the praevial placenta and in the extent of the damage to it are compatible with variations in their effects on the destruction or preservation of fetal life during labour. Major and minor degrees of variation are clinically accessible. Intermediate degrees are likely to introduce confusion.

So far the inquiry has dealt with a viable fetus at the onset of labour. In cases of placenta praevia in which intrauterine death has preceded the onset of labour prolapse of the placenta exerts an insignificant bearing on the conduct and result of the labour.

Two examples may now briefly be alluded to as illustrations of harmless placental obstruction.

Placenta Praevia with Prolapse of the Placenta. (Two Cases.)

Case 1.—In this case the larger part of the placenta was found early in the vagina; the smaller portion still attached anteriorly within the uterus.

Bleeding and labour pains were noted at 10 a.m. on March 29th, 1911; next day the patient was admitted to hospital at 11 a.m. The loss of blood was then free and there was shoulder presentation, right dorso-anterior; internal podalic version was effected. The spontaneous expulsion of the placenta preceded the assisted delivery of the macerated male fetus, which weighed 6 lb. 6 oz.

The patient, aged 30, had had five children and one abortion. The menses had been suppressed since the end of July, 1910.

Case 2.—A multipara, aged 32, with a record of eight previous normal labours, stated that the last menstruation ceased on October 10th, 1914, and that on May 3rd, at twenty-nine and a half weeks, labour pains and bleeding commenced simultaneously at 12.30 p.m. The membranes ruptured at 2.30 p.m.; the haemorrhage gradually lessened, and at 4.45 p.m. it had practically ceased. At 6 p.m. there was almost full dilatation, and the placenta was in the vagina appearing at the vulva. At 6.20 p.m. the fetus was expelled in the membranes; its apparent age was six and a half months. There was not at any time an excessive blood loss. The rupture of the membranes situated a little more than one inch from the margin of the placenta.

Occasional Difficulties in Diagnosis.

Fig. 6 shows an organized tongue-shaped clot continuous with the placental margin from a case of lateral placenta praevia. The fetus after version was expelled alive and survived. The value of the specimen lies in the connexions and the firmness of the clot, indistinguishable from the thrombosed placenta until the microscope had been used.

Large, Flattened out Encephalo-meningocele.

In this case the condition simulated prolapse of the placenta, and was rare in its extent and conformation. (Fig. 7.)

SUMMARY.

1. The initial haemorrhage is a warning to be taken seriously. Equipment is required, also prompt transference of the patient into a hospital or a nursing home. To quote a current war expression: it is not one man's or one woman's business to stand by whilst delay adds its dangers.

2. The viability of the fetus at or after the thirty-sixth week of gestation is acceptable; induction of premature labour has practically proved this; Caesarean section is unlikely to disprove it.

3. The bulk and area of placenta praevia in the obstruction zone can be approximately estimated by examination. This obstruction may be an important item in directing the management of the labour.

If early opportunities and complete equipments are obtainable, the three particulars I have mentioned are more consistent with maternal and fetal safety by Caesarean section than by any other method of treatment of placenta praevia. Debatable matters have developed amid the large number of Caesarean sections already published. The defects and hazards of the earlier operations have been recognized. Opposition will wane with better selection.

The present obstetrical attitude lacks neither prejudice nor proof. Caution is cherished by the lapses in opportunities and the gaps in equipments yet to be banished by an ever-increasing co-operation.

My thanks are tendered to colleagues and others of my professional friends for their gifts to the teaching equipment of my department. Dr. Hendry, the museum sub-curator, has superintended the preservation of the specimens, and Mr. J. Tenbosch, the laboratory assistant, has taken the photographs. Their efficient services are much appreciated.

THE PREVENTION OF POSTERIOR BOWING IN COMPOUND FRACTURE OF THE FEMUR.

BY

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Those who have had considerable experience during the present war of gunshot wounds associated with compound fracture of the femur assert that the most difficult deformity to avoid is posterior bowing.

This is especially the case when there is a suppurating posterior wound which needs frequent dressings. Most are agreed that the best appliance for such cases is the Thomas bed knee splint with extension; in this the thigh is supported with strips of bandage slung across between the two side bars of the splint; it is attempted to correct the tendency for posterior bowing either (a) by tightening the slings under the site of fracture, or (b) by inserting a back splint and pad between the slings and the thigh, or (c) by bending the splint opposite the knee.

In method (a) every time the posterior wound is dressed the bandage slings have to be removed and fresh ones inserted; each step in this procedure, if performed properly, requires special care, is tedious, makes the dressing of the case long, and even when conscientiously done often fails to prevent the occurrence of the backward deformity.

Method (b) is open to the same objections, and, further, the pads and back splint tend to move; the results seen after treatment by this method are, however, more satisfactory than by (a).

Method (c), if one may judge by some of the after-results seen at Alder Hey Hospital, does not always do all that some have claimed for it to correct the deformity

under discussion, and it requires the same careful adjustment and takes the same length of time for dressings as (a).

In order to eliminate these and other objections I have devised the splint shown in the accompanying drawings. It is suitable for all fractures in the lower two-thirds of the femur.

In effect it is a double Thomas bed knee splint, an outer and an inner. The outer is the ordinary Thomas splint, and to its end the extension is fixed in the usual way. At the junction of the ring with the inner bar, and at the same level on the outer bar, is a pivot, to which is attached another—the inner Thomas splint (minus its ring): it fits easily within the outer, and is bent four inches from its lower end, so as to raise the whole off the bed (Fig. 1).



FIG. 1.

By raising the outer splint by its end the patient's thigh and leg are also raised, but the inner splint turning on the pivots remains resting on the bed (Fig. 2).

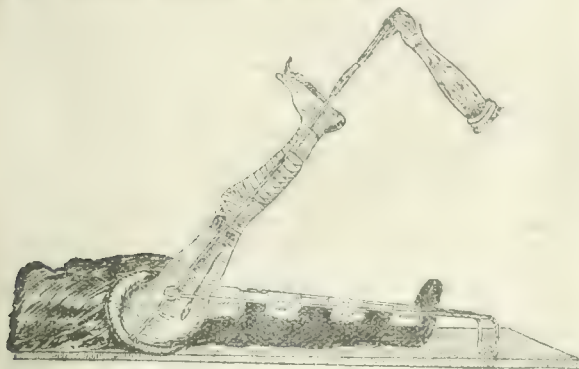


FIG. 2.

On this inner splint are metal slings made of the usual perforated zinc, which are held in the proper position by a few turns of narrow strapping wrapped round the bars above and below; if the posterior wound be small, one sling only is necessary. On the sling or slings a large pad of cotton-wool is placed in such a position that when the outer splint is lowered and both are in the same plane, it is under the site of the fracture. The rest of the limb is slung in bandage supports, taking the usual precautions against genu recurvatum by another smaller pad beneath the knee.

It will be seen that all the pads and slings which support the limb are on the inner splint, although in practice it is found useful to have one sling under the knee on the outer splint, not to act as a pad but rather as a support during dressing.

To dress the posterior wound, the outer splint is raised and held by the nurse or orderly; by this means flexion at the thigh is possible to 50 or 60 degrees, and a good view of the wound obtained. The pivoted inner splint with its



FIG. 3.

pad and slings remains on the bed. The pad, if soiled, is removed, and a fresh one of the same size put in its place. If necessary, also, the zinc slings can be removed quickly and boiled or replaced by similar ones already sterilized. The outer splint is then lowered again, and is fastened at the end to the inner by clips or a piece of bandage (Fig. 3). In most cases it is unnecessary to fix the dressings by

bandages, as they are held in place between the pad and the thigh.

It may be argued that while the outer splint is raised the fracture has no support except that which is provided by the extension. This is, however, sufficient for the short period during dressing, and in addition it may be noted that the extra tension put on the hamstrings by flexion of the thigh, the knee being extended, in itself tends to lessen posterior bowing.

I have found by using this arrangement that dressings can be done in less than half the time and with a great deal more ease, that the pads are always in the proper place and remain fixed there, that there is no discomfort to the patient, and that all tendency to posterior bowing is obviated.

It will be obvious that although this splint is primarily designed for cases with a posterior wound it can equally well be applied to those in which there is only an anterior wound which is being chemically sterilized. It is also suitable for those numerous cases met with in this country which are already healed, the bone being recently united with little shortening but posterior bowing and in which there is still tenderness on pressure over the site of fracture. This tenderness is an exceedingly important clinical sign, and indicates, no matter how long since union commenced, that the callus is still soft and can be moulded, and that the patient, even after the deformity is corrected, should only be allowed to walk in a caliper splint.

I would point out also that the method is unnecessary in simple fracture, where perfect results can be obtained by a straight Thomas bed knee splint with fixed extension and coaptation splints.

I am indebted to the Inspector of Special Military Surgery, Major-General Sir Robert Jones, C.B., A.M.S., for permission to describe this splint.

(It will be noticed that the ring of the splint shown in the accompanying drawings is too large for the patient on whom it is being temporarily used. This is a defect which it is important to avoid whenever possible.)

DELAYED PRIMARY SUTURE OF WOUNDS.

BY

H. H. HEPBURN, M.O., TEMP. MAJOR R.A.M.C.

THE medical history of the war will probably acknowledge "delayed primary suture" as the fashionable treatment of wounds for the year 1918. It is a procedure applicable also to casualty work of civilian practice. This method of treating wounds, which came into general use in the British military hospitals in the early summer, was, I believe, first extensively employed by the French surgeons, who proved its worth. There has been a considerable range of variation amongst different surgeons as to the time limit of what should be termed "delayed primary suture" and what "secondary suture." The period for delayed primary suture, hereafter referred to as D.P.S., might be defined as any time up to the appearance in a wound of granulations visible to the naked eye; but the term should, in my opinion, be confined to those cases in which suture is undertaken on the day of removal of the original packing, all others being classed as secondary suture.

The success of delayed primary suture depends largely upon three factors: (a) The thoroughness of the primary operation of cleansing or excision of the wound, (b) careful attention to technique at the operation of suture, and (c) post-operative care, especially as regards rest and splinting. Owing to the necessity for rapid evacuation it has been impossible to follow all my cases of D.P.S. to a conclusion, but for the purpose of obtaining some definite information on the subject I have kept under observation fifty consecutive cases, in each of the three groups referred to below, until the wounds were completely healed, or the degree of failure established beyond doubt.

Before proceeding to a discussion of the second operation, with which we at the base hospitals are most concerned, I will deal briefly with the preparatory or primary operation. The three ideals to be aimed at in the operation are: (1) The removal of all foreign material and disorganized tissue; (2) sterilization; and (3) absolute dryness of the wound.

A wound from which missiles and shreds of clothing have not all been removed may reasonably be expected to suppurate. The removal of all disorganized tissue, while devoutly to be wished, does not warrant the ruthless destruction of essential structures by massive block excision. I have seen more than one case of a wound, completely excised and perfectly clean, where approximation of the tissues was a physical impossibility, and wondered if a less radical excision, with Carrel treatment, and healing by granulation or secondary suture, might not have given a more satisfactory result. The oedema and infiltration of muscle which is so frequently seen during the first few days after injury render the approximation of the retracted ends of a muscle extremely difficult when complete transverse section has been complicated by extensive resection. It should also be borne in mind that every fraction of an inch of skin is valuable, particularly on the forearm and the lower part of the leg, where the skin is usually found to be under considerable tension at the time of suture. It has already been demonstrated that many wounds can be satisfactorily cleansed for suture by the vigorous application of soap and water without complete excision.

Sterilization is largely effected by the mechanical measures referred to above. When a wound has been completely excised under aseptic conditions I can see no necessity for the introduction of antiseptics, but when there is a doubt about the thoroughness of the excision or wound toilet, an antiseptic pack may have a decided advantage over plain gauze. Most of my cases have been packed with flavine gauze, which to my mind leaves on removal a cleaner and drier wound than either eusol or bismuth-iodoform paste.

Dryness of the wound is essential. In my experience a wound arriving at the base with a large blood clot under the pack invariably does badly. The time spent in ligaturing small vessels is by no means wasted, and indeed is imperative unless the pack be firmly stitched in.

It is important that the primary operation of wound toilet, or excision should be carried out as early as possible. The chance of successfully cleansing a wound appears to diminish slowly during the first twelve hours, and rapidly after the first twenty-four.

The elapse of time between the primary operation and delayed suture has varied in my cases from twenty-four hours to five full days. I can see no difference in the cases of twenty-four and forty-eight hours, but there is undoubtedly a difference between the cases of forty-eight hours and those of four days' interval. Consequently I regard the optimum period for D.P.S. as being within fifty hours of the primary operation, and preferably on the second day. With an interval of forty-eight hours the patient has had time to recover from the first anaesthetic, also if a virulent infection be present it will probably have asserted itself by that time, in which case we are warned against attempting to suture.

So far I am unable to state any scientific index of suitability for D.P.S., and am of the opinion that one must be guided entirely by the naked-eye appearance of the wound, coupled with general clinical observations. I attempted to work out a bacteriological index, but gave it up after a series of 50 cases, as several wounds, showing one or less than one pyogenic micro-organism per microscopic field, suppurated, whereas others showing from ten to twenty healed perfectly.

Bacteriological Table of Smears from 50 Cases Immediately before Final Toilet.

No. of Micro-organisms per Microscopic Field.	No. of Cases.	Complete Success.	Partial Success.	Complete Failure.
One or less than one per field	37	33	3	1
Two to four per field	5	4	1	—
Five per field	1	—	1	—
Ten to fifteen per field	3	1	2	—
Twenty per field	3	3	—	—
Forty per field	1	—	—	1

Streptococci were present in every case except one.

A wound which is suppurating mildly may be partially stitched, with provision for drainage, and do well, but I

have not seen a wound containing pus completely sutured without failure. Consequently the indications on which I decide to carry out complete D.P.S. are: (1) A wound free from macroscopic pus, and (2) the absence of general contra-indications, such as toxæmia, rapid pulse-rate, or undue elevation of temperature. I do not defer suture on account of temperature unless both the morning and evening temperatures are above 100° F., or one of them is above 101°.

The presence of a compound fracture does not contra-indicate D.P.S. provided one is reasonably sure of cleansing the damaged bone. Compound fracture of the femur is probably an exception. I have had bad results in every case of D.P.S. complicated by compound fracture of the femur, and am of the opinion that it is too dangerous to be justified, even by the report of an occasional success. Fracture cases where there has been an unobliterated cavity in the bone, frequently, but not invariably, suppurate, and require removal of one or more stitches for drainage, without complete failure.

In dealing with patients prepared at a casualty clearing station for D.P.S., and labelled as such, my procedure has been as follows:

As most of the cases have arrived during the night, I have two pulse and temperature records available at my morning visit. If the general condition of the patient does not contra-indicate operation or the administration of a general anaesthetic, he is taken to the operating theatre without having his dressings removed. He is anaesthetized, and all dressing except the pack removed. A wide area of skin surrounding the wound is vigorously swabbed with a 5 per cent. solution of picric acid in spirit, care being taken that the skin edges about the pack do not escape the application. The pack is then removed, and if there is obvious pus in the wound the case is declared unfit for D.P.S. A dressing of eusol or flavine gauze is applied, and the patient returned to his ward for further treatment with a view to secondary suture. If no pus is visible on removal of the pack the wound is considered fit for D.P.S. In dealing with a very large wound, part of which is clean, it is frequently justifiable, as I have already intimated, to do a partial suture in order to reduce the absorbing surface and the pain of dressings, but it has been my experience that wherever possible complete closure of the wound should be carried out. Small drains of rubber tissue may be inserted between stitches and removed after forty-eight hours. Flakes of coagulated lymph, small blood clots, and a certain amount of fresh blood are usually seen in a wound after removal of the pack, and the question of final cleansing arises. This will be discussed below. After the final toilet the wound is closed, preferably in layers, approximating the deeper tissues with interrupted sutures of catgut and the skin with silk worm gut. Where tension on the skin is excessive it is advisable to introduce at some distance from the line of suture one or more tension stitches, having the ends guarded by buttons or bits of rubber tubing. These stitches may be removed on the second day. When stitching has been completed the area is again painted with a solution of picric acid in spirit and a dry dressing applied, with sufficient bandage or splinting to ensure absolute rest to the part.

To determine whether an antiseptic lavage had any advantage over wiping with plain dry gauze in the final toilet of the wound, after removal of the pack I carried out observations on three series of fifty cases each, where the final toilet was (a) an aqueous solution of flavine (1 in 1,000), (b) ether, and (c) wiping with dry sterile gauze.

The following table shows the comparative results:

Three Groups of Fifty Cases each, of Similar Severity.

Final Toilet.	Percentage of Primary Union.								Average.
	100%	90%	80%	70%	50%	30%	20%	Complete Failure.	
Flavine	38	7	3	—	—	—	—	2	93.40%
Ether	39	5	—	—	2	1	1	2	90%
Dry wipe	25	14	1	6	2	1	—	1	87.80%

It would appear that flavine is slightly more efficacious than ether, and both are better than simple dry toilet. Flavine undoubtedly delays healing in a wound, and it is seldom safe to remove all the stitches inside of fourteen days.

For the skin preparation I originally used tincture of iodine, but found frequent suppuration about the stitches and a moist dermatitis along the edges of the wound. On the suggestion of Major-General Sir Berkeley Moynihan, who saw some of these cases with me, I discontinued the use of iodine and substituted a 5 per cent. solution of picric acid with entire satisfaction.

Classification of the above 150 Cases.

Nature of Wound.	No. of Cases.	Complete Success.	Partial Success.	Complete Failure.
Wounds of soft tissues—				
Slight	18	17	1	—
Severe	33	57	24	2
Wounds complicated by compound fracture of—				
Humerus	5	2	3	—
Ulna	4	3	1	—
Radius	—	—	—	—
Femur	2	—	—	2
Tibia	3	6	1	1
Fibula	3	3	—	—
Other bone	6	4	1	—
Wounds complicated by penetration of joint—				
Elbow	3	2	—	—
Knee	3	4	4	—
Ankle	1	1	—	—
Amputation stump—				
Arm	1	—	1	—
Forearm	2	2	—	—
Thigh	4	1	3	—
Leg	4	—	4	—
	150	102	43	5

The post-operative treatment of cases of D.P.S. should be carried out as though dealing with fractures. The patient should be confined to bed and the part splinted, if possible, until healed, when graduated movements should be ordered.

The conclusions drawn from my experience of the last five months with D.P.S. are as follows:

1. That a large number of wounds considered by surgeons at casualty clearing stations to be unfit for immediate primary suture may be safely closed a couple of days later at a base hospital without intermediate treatment, thereby materially reducing the disability and shortening the stay of patients in hospital. Over 90 per cent. of the prepared wounds which I have seen were fit for D.P.S.

2. That the primary cleansing operation should be carried out as early and completely as possible, without undue sacrifice of tissue, and with careful attention to haemostasis. The wound should be firmly packed, and the patient labelled, "For D.P.S."

3. That the best results may be expected from complete D.P.S. carried out between twenty-four and fifty hours after the primary operation.

4. That there is at present no reliable bacteriological standard of suitability for D.P.S., but that any wound which is free from macroscopic pus after having been packed for forty-eight hours may safely be closed in the absence of grave constitutional signs.

The Bedfordshire County Council has purchased Moger-banger Park of 27 acres, with the mansion, for a county sanatorium. It has also purchased certain huts at Amphill military camp. It is estimated that the sanatorium, which will provide 80 beds, will cost £12,000, including £2,000 for furnishing.

THE DETECTION OF SACCHAROSURIA, INOSITURIA, AND LACTOSURIA BY A MYCOLOGICAL METHOD.

BY

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SOME time ago (BRITISH MEDICAL JOURNAL, December 29th, 1917) we described a mycological method for the detection and determination of various sugars and other carbon compounds, mostly Fehling reducing, met with in physiological and pathological work.

We thought that just as various carbohydrates and other carbon compounds are used in the identification of certain bacteria and higher fungi, the reverse process might also be carried out and bacteria and higher fungi used for the detection of certain chemical substances. For many years ordinary baker's yeast (so-called German yeast) has been, of course, used to detect glucose, but this is the only sugar for which a purely mycological method has been used in pathological work, and, as a matter of fact, it is an unscientific method, as ordinary yeast almost constantly ferments maltose, saccharose, and other sugars in addition to glucose. Our method might be called "conjugated or parallel mycological method," as we do not use one species of germs only; we generally use two or more and compare their action on the substance to be determined.

The simplest way of carrying out our method to determine whether a substance is or is not a certain carbohydrate is to test on that substance, whenever possible, the action of two germs known to be identical in all their biochemical reactions except on that particular carbohydrate. For instance, in order to see whether a certain chemical substance is maltose, we test it with two germs which are known to be identical in all their biochemical reactions except on maltose, one fermenting this sugar, the other not. To carry out the method an exact knowledge is necessary of the biochemical reactions of a certain number of bacteria and higher fungi.*

SACCHAROSURIA.

Spontaneous saccharosuria is an extremely rare condition, but artificial saccharosuria is not so very rare among malingerers; we have come across three cases in which saccharose had been added to the urine with the object of misleading the medical officer. The medical man who uses as routine the usual Fehling's method is not apt to diagnose such cases as glycosuria, as saccharose does not reduce, at any rate not very clearly, Fehling's solution; but the medical man who uses what is considered to be, by most authorities, the more exact method of yeast fermentation will very likely fall into error, because though in so many textbooks it is stated that glucose is the only substance fermented by ordinary baker's yeast, we have found that a very large number of specimens of baker's yeast will ferment saccharose and also levulose, maltose, etc., in addition to glucose.

Mycological Tests to Determine Saccharose.

According to our method various tests may be evolved to determine whether a certain carbohydrate of those found in pathological urino is or is not saccharose; we give here a few of these tests in the convenient shape of mycological formulae:

I. B. coli Escherich 0
B. neapolitanus Emmerich + } = Saccharose.
+ = Presence of gas. 0 = Absence of gas.

The explanation lies in the fact that *B. coli* and *B. neapolitanus* are identical as regards their biochemical

* The reader may perhaps find it useful to consult the tables of biochemical reactions of various fungi and bacteria published by one of us in various medical journals; some of the more recent ones may be found in a paper by one of us in the *Journal of Tropical Medicine*, August 15th and September 15th, 1917. Similar tables may be found in Castellani and Chalmers's *Manual of Tropical Medicine*, second edition, pp. 822 (monilia) and 1380 (bacteria); and as regards the bacteria, Hewitt's *Manual of Bacteriology*, sixth edition, pp. 428-433.

reactions on all the sugars and other carbon compounds usually found in pathological urine except on saccharose. *B. coli* Escherich does not ferment saccharose, while *B. neapolitanus* Emmerich ferments it with production of gas. If therefore a certain carbohydrate is fermented (gas present) by *B. neapolitanus* Emmerich and not by *B. coli* Escherich, the inference is that it is saccharose.

II. *B. coli* Escherich ... 0 } = Saccharose.
B. asiaticus Castellani ... + }

The explanation of this is that *B. coli* and *B. asiaticus* differ only in saccharose, lactose, dulcitol, and salicin. *B. coli* does not ferment saccharose, while *B. asiaticus* ferments it; on the other hand *B. coli* ferments with production of gas lactose, dulcitol, and salicin, while *B. asiaticus* does not. If a carbohydrate therefore is fermented by *B. asiaticus*, and not fermented by *B. coli*, it is, according to all probabilities, saccharose.

III. *Monilia metalondinensis* Cast. ... 0 } = Saccharose.
Monilia tropicalis Cast. ... + }

This is explained by the fact that *Monilia metalondinensis* and *Monilia tropicalis* are identical in all their biochemical reactions except on saccharose, which is fermented with production of gas by *Monilia tropicalis* and not fermented by *Monilia metalondinensis*.

IV. *Monilia pinoyi* Cast. ... 0 } = Saccharose.
Monilia rhoi Cast. ... + }

The explanation lies in the fact that *Monilia pinoyi* ferments with production of gas only glucose, levulose, maltose, and *Monilia rhoi* only glucose, levulose, maltose, and saccharose. If a substance therefore is not fermented by *Monilia pinoyi* and is fermented with production of gas by *Monilia rhoi*, it must be saccharose.

To the above purely mycological formulae we add a chemico-mycological formula which may be found useful in practice:

Fehling ... 0 } = Saccharose.
Monilia bronchialis Cast. ... + }

This is explained by the fact that *Monilia bronchialis* ferments with production of gas glucose, levulose, maltose, saccharose, and no other substance. If Fehling is negative it cannot be any of the first three substances as they are all Fehling-reducing, and it must therefore be saccharose.

Technical Details.—The urine is collected aseptically or, if this is not feasible, is distributed in sterile tubes (each containing a small fermentation tube) as soon as passed and then sterilized in Koch's stove for 30 minutes on two or three consecutive days. It should never be autoclaved, as autoclaving may alter the composition of the sugars and other hydrocarbonates present. Two tubes of the aseptic urine to which one-third or the same amount of sterile, sugar free, peptone water has been added, are inoculated according to the formulae quoted: for instance, No. 1 with *B. coli* Escherich, and No. 2 with *B. neapolitanus* Emmerich. The two tubes are incubated at 35° to 37° for twenty-four to forty-eight hours and then examined. If tube No. 1 shows no gas, and tube No. 2 shows presence of gas, the urine according to all probabilities contained saccharose.

Detection of Saccharose when Mixed with other Fermentable Substances.—Exhaust the urine with *B. coli* Escherich, and later, after filtration through a Chamberland filter, or prolonged centrifugalization, inoculate it with *B. neapolitanus* Emmerich. If the urine is still fermentable the presumption is that in addition to other fermentable substances, which can be found by our general method,¹ the urine contains saccharose.

Let us make an example: Suppose the test of the urine gives the following results:

Tube No. 1 (*B. coli* Escherich) ... +
 Tube No. 2 (*B. neapolitanus* Emmerich) ... +

This means as a rule that the fermentable substance is not saccharose; it does not exclude, however, with absolute certainty the possible presence of saccharose in the urine, in addition to other fermentable substances. In order to see whether this might not be the case, the urine of No. 1 tube (*B. coli* Escherich) after exhaustion is repeatedly centrifuged or filtered through a Chamberland, placed in two smaller tubes (3 and 4), and on these the test is repeated, No. 3 tube being inoculated with *B. coli* Escherich and No. 4 tube with *B. neapolitanus* Emmerich. If after twenty-four to forty-eight hours gas is absent in Tube 3 and present in Tube 4, saccharose must have been present in addition to other fermentable substances.

The precaution should be taken of using strains of *B. coli* Escherich and *B. neapolitanus* Emmerich having

approximately the same fermentation power on the carbohydrates they both ferment.

INOSITURIA.

Inositol, as is well known, does not reduce Fehling; it is not really a sugar, belonging to the aromatic series. It is not of very rare occurrence in the urine; it is, for instance, not infrequently found in diabetes insipidus, but the chemical methods of detecting it are far from easy or rapid. On the other hand, inositol, provided it is present in the urine in not too small a quantity, can be detected and determined with comparative ease by our mycological method.

Two tubes of urine collected aseptically or sterilized as already described, are mixed with one-third, or the same amount, of sugar-free peptone water and inoculated, No. 1 with *B. paratyphosus* B, Schottmüller (M variety, which ferments inositol), and No. 2 tube with *B. paratyphosus* A, Schottmüller (does not ferment inositol). The two germs, as regards carbohydrates and other pathological substances found in the urine, differ only in their action on inositol. Therefore if, after twenty-four to forty-eight hours' incubation at 37° C., gas is present in No. 1 tube, and absent in No. 2 tube, we have to deal with inositol. This can be conveniently expressed by the following formulae:

B. paratyphosus B, Schottmüller, var. M ... + } = Inositol.
B. paratyphosus A, Schottmüller ... 0 }

If the result of the experiment should be:

B. paratyphosus B, Schottmüller, var. M ... 0
B. paratyphosus A, Schottmüller ... 0

it means that the substance is neither inositol nor any other substance fermentable by *B. paratyphosus* B, var. M, or *B. paratyphosus* A, hence it cannot be glucose, levulose, maltose, saccharose, etc.

If the result of the test is:

B. paratyphosus B, Schottmüller, var. M ... +
B. paratyphosus A, Schottmüller ... +

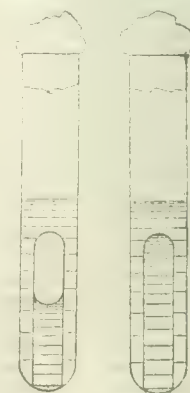
it means in general that the urine does not contain inositol but other fermentable substances.

Still, the possible presence of inositol in a mixture with some fermentable substance, such as glucose, maltose, saccharose, etc., cannot be absolutely excluded. If such condition be suspected, exhaust the urine with *B. paratyphosus* A, and then inoculate with *B. paratyphosus* B, var. M, using strains having approximately the same fermentation power. If gas is produced, the inference is that the urine contained inositol in addition to other fermentable substances, which can be determined by using our general method.

LACTOSURIA.

Next to glucose, lactose is the commonest sugar found in the urine. It is frequently met with in the urine of nursing mothers. Lactose, as well known, reduces Fehling's solution, and not infrequently lactosuria has been mistaken for true glycosuria. It is most important to distinguish between the two conditions, as lactosuria is not a very serious condition, while glycosuria, especially in nursing women, is of grave prognosis. The chemical detection and determination of lactose is difficult for an ordinary medical man. In most text-books it is stated that if a urine reduces Fehling, and is not fermented by ordinary baker's yeast (so-called German yeast), the presumption is that the reducing substance is lactose. There are, however, two very important sources of error.

First, quite a number of specimens of baker's yeast ferment lactose in addition to glucose, maltose, and other sugars; second, even if the baker's yeast should not ferment lactose, this is not the only Fehling-reducing substance which may not be fermented by baker's yeast—the pentoses, for instance.



Tube No. 1. Tube No. 2.

Detection of lactosuria. Tube No. 1, containing urine inoculated with *B. coli* Escherich. Gas present. Tube No. 2, containing same urine inoculated with *B. paratyphosus* B, Schottmüller. Gas absent.

If a urine which reduces Fehling is not fermented by ordinary yeast we cannot, therefore, come to the conclusion that it is a case of lactosuria.

Detection and Determination of Lactose by our Mycological Method.

This method can be carried out in various ways. Herewith a few mycological formulae as an example:

- | | | | | |
|------------------------------------|-----|-----|---|--------------|
| 1. <i>B. neapolitanus</i> Emmerich | ... | ... | + | } = Lactose. |
| <i>B. pseudosialisticus</i> Cast. | ... | ... | 0 | |

The explanation lies in the fact that *B. neapolitanus* and *B. pseudosialisticus* differ only in lactose as regards sugars and other carbohydrates found in pathological urines.

II. In a Fehling-reducing urine, for practical purposes, the following formula is also correct:

- | | | | | |
|--|-----|-----|---|--------------|
| <i>B. coli</i> Escherich | ... | ... | + | } = Lactose. |
| <i>B. paratyphosus</i> B, Schottmüller | ... | ... | 0 | |

B. coli and *B. paratyphosus* B, besides lactose, differ in their action on raffinose and salicin, but raffinose and salicin are not carbon compounds found in the urine, and at any rate they are not Fehling-reducing, and therefore this formula may be considered to be specific for practical purposes.

- | | | | | |
|---|-----|-----|---|--------------|
| III. <i>Monilia metalondinensis</i> Cast. | ... | ... | 0 | } = Lactose. |
| <i>B. coli</i> Escherich | ... | ... | + | |
| <i>B. paratyphosus</i> B, Schottmüller | ... | ... | 0 | |

The technical details for carrying out the test are identical with those already mentioned in connexion with the search for saccharose, etc.

ADDENDUM.

For the reader's convenience we quote here some of the principal mycological formulae which we have devised and employed for the detection of certain sugars and other carbohydrates in pathological urines.

Urine Fehling-reducing.

- | | | | | |
|---|-----|-----|---|----------------|
| 1. <i>Monilia balcanica</i> Cast. | ... | ... | + | } = Glucose. |
| 2. <i>Monilia balcanica</i> Cast. | ... | ... | 0 | |
| <i>Monilia krusei</i> Cast. | ... | ... | + | } = Levulose. |
| 3. <i>Monilia krusei</i> Cast. | ... | ... | 0 | |
| <i>Monilia pinoyi</i> Cast. | ... | ... | + | } = Maltose. |
| 4. <i>Monilia pinoyi</i> Cast. | ... | ... | 0 | |
| <i>Monilia parachalmersi</i> Cast. | ... | ... | + | } = Maltose. |
| 5. <i>Monilia pinoyi</i> Cast. | ... | ... | 0 | |
| <i>Monilia metalondinensis</i> Cast. | ... | ... | + | } = Galactose. |
| 6. <i>Monilia pinoyi</i> Cast. | ... | ... | 0 | |
| <i>Monilia parachalmersi</i> Cast. | ... | ... | + | } = Galactose. |
| 7. <i>Monilia metalondinensis</i> Cast. | ... | ... | 0 | |
| <i>Bacillus coli</i> Escherich | ... | ... | + | } = Pentoses. |
| <i>Bacillus paratyphosus</i> B, Schottmüller. | ... | ... | + | |
| 8. <i>Monilia pinoyi</i> Cast. | ... | ... | 0 | } = Pentoses. |
| <i>Monilia parachalmersi</i> Cast. | ... | ... | 0 | |
| <i>Bacillus coli</i> Escherich | ... | ... | + | |
| <i>Bacillus paratyphosus</i> B, Schottmüller. | ... | ... | + | |
| 9. <i>B. coli</i> Escherich | ... | ... | + | } = Lactose. |
| <i>B. paratyphosus</i> B, Schottmüller | ... | ... | 0 | |

Urine not Fehling-reducing.

- | | | | | |
|---|-----|-----|---|-----------------|
| 1. <i>B. coli</i> Escherich | ... | ... | 0 | } = Saccharose. |
| <i>B. pseudocoli</i> Cast. | ... | ... | + | |
| 2. <i>Monilia pinoyi</i> Cast. | ... | ... | 0 | } = Saccharose. |
| <i>Monilia rhoi</i> Cast. | ... | ... | + | |
| 3. <i>B. paratyphosus</i> B, var. M, Schottmüller | ... | ... | + | } = Inositol. |
| <i>B. paratyphosus</i> A, Schottmüller | ... | ... | 0 | |

+ = Production of gas; simple acid fermentation is not taken into account. 0 = No gas.

All the above formulae are easily understood when the biochemical reactions of the various germs used are kept in mind. These reactions may be found in papers we have already quoted.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, December 29th, 1917.

IN accordance with the Government's decision to establish a central authority for the disposal of all surplus Government property, the Minister of Munitions has set up an organization for this purpose, consisting of a board, to be called the Surplus Government Property Disposal Board, and an advisory council. No property surplus to the requirements of the various Government departments will in future be disposed of except through, or by arrangement with, the Disposal Board. The departmental organization consists of seventeen sections, each with a controller responsible to the board and assisted by an honorary advisory committee. The controller of the section of medical stores, equipment, and instruments is Mr. W. J. Woolcock, O.B.E., M.P. Communications should be addressed to the Secretary, Disposal Board, Armament Buildings, Whitehall Place, S.W.1.

Reports of Societies.

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY.

A DISCUSSION on reconstruction in the teaching of obstetrics and gynaecology to medical students took place at the meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on February 6th, when the president, Mr. JOHN D. MALCOLM, was in the chair. Dr. W. S. A. GRIFFITH opened the discussion with the general survey of the subjects to be taught and of the methods of teaching, which was published in the JOURNAL last week (p. 148).

The Standpoint of Preventive Medicine.

Dr. JOHN S. FAIRBAIN, Obstetric Physician to St. Thomas's Hospital, said that midwifery and the diseases of women must be considered as two branches of one subject and studied clinically at the same time and under the same teachers. The student must not be allowed to put in his maternity courses at a time dictated solely by his own inclinations, and often independently of his gynaecological clerkship. For the training of students a medical school must provide (1) a complete maternity centre, with in-patient and out-patient accommodation for the pregnant woman, the woman in labour, and the mother and nursing; (2) a department for diseases of women; (3) a full staff of workers consisting of (a) medical—the visiting and resident medical officers, with their under-studies, the students; (b) nurses and midwives for indoor and outdoor patients; (c) almoners and health visitors for visiting the patients in their homes, for staffing the social and educative organizations for the mothers, and for forming the connecting link with outside agencies for the assistance of patients. During his time in the department, which at present is three months, the student should be taught not merely to look for the beginnings of disease and for warnings that might spell danger later, but to consider the individual character, mode of life, and home conditions of each patient as factors in her case. In the maternity ward the student, having already learnt the routine of surgical cleanliness in the operating theatre, would find no difficulty in applying it to the woman in labour. During the month spent in this ward all preventable conditions should be discussed—as to why they were not foreseen and what could have been done. It was useful to have a few pupil midwives attending the clinical instruction in the lying-in wards with the students: this afforded occasions for discussing the duties of the midwife and her relation to the medical practitioner, so that both the pupil, midwife, and the medical student learnt their respective spheres in the health service of the community. After this period the student should attend the rest of his cases in the district, where he would learn to adapt methods learnt under ideal conditions to circumstances which might be the reverse. Greater effort should be made to stimulate the interest of the student in the study of the baby; the question where the dividing line between obstetrics and pediatrics should be drawn was thus raised. There was something to be said for mother and nursing remaining under the obstetric department, and the weanling and older children under the children's department. At St. Thomas's Hospital it was proposed to appoint a special officer for the child welfare clinics; such an officer would begin by taking part in the teaching on the infant in the maternity ward, where he would become known to the mothers, and learn to know them, thus preserving continuity from the maternity clinic to the baby clinic. Only three or four beds for mothers and nurslings would be required, unless the department was very large. To these beds would be admitted cases of difficult breast feeding, and the like. Dr. Fairbairn urged that every student should have six months' training in obstetrics, gynaecology and pediatrics, the last three months being spent in the various children's clinics. Teachers had been so absorbed in operative work, and hospital accommodation so monopolized by operation cases, that the teaching material was in no way representative of the future practice of students. The mental attitude of teachers towards patients and their symptoms had lost balance and swung too far towards mechanical explanations—

displacements and kinks and hypothetical local affections—and mechanical cures by operations of the "pexy" and "ostomy" type in the devising and carrying out of which much ingenuity and manipulative skill had been expended. The resulting tendency had been to overlook the most common of all factors in the production of disability—overstrain and mental stress; the balance must be redressed. Gynaecological beds should be occupied by cases closely representative of general practice; the necessity of considering the psychological factor should be impressed upon the student, who should be taught to study and treat not merely the disease, but the individual patient and the special problem she presented.

The Standpoint of the General Practitioner.

Dr. LOVELL DRAGE said that the matter was only a part of the whole subject of the education of the medical man. There was an increasing demand upon the time of the student by the teachers of special departments, and where work was very specialized examiners were usually hard taskmasters. Time could be saved by the exclusion of the preliminary subjects, which should be undertaken before registration as a student. The student began the study of obstetrics and gynaecology with a course of lectures and instruction in the wards, after similar lectures and instruction in medicine and surgery. A very large part of gynaecology should be treated as part of the course in surgery. The teachers of midwifery and diseases of women should give special attention to the various infective agents. Judgement made all the difference in results, but it was difficult to know what course of training would produce this desirable quality. If students were not only trained but educated, a very short time would enable them to grasp all the details of obstetrics and gynaecology, and three months would be sufficient for them to give to preparation for the examination. It had been said that under the Ministry of Health many appointments connected with maternity and childhood would be created, and that it was the duty of medical schools to train people to undertake them; but it appeared to him that the work would be such that any sufficiently trained midwife would be able to undertake it. The practitioner who undertook it would find himself at a dead end; it would be ordinary hack-work conducted under rules and regulations, involving an immense amount of clerical work and a life of destructive stagnation. The one course, in which real education was attempted, would be attended by students who intended to practise in obstetrics; a second course, in which no more than training was given, would be attended by those who undertook to take up hack-work at maternity centres; students who did not intend to practise obstetrics would attend neither. The proportion of the fit to the unfit born into the world was probably about the same as it had always been, but the medical profession was preventing to a considerable extent the loss amongst the unfit, and it did not appear that the supervision of pregnant mothers would produce any other result than that of raising up to maturity more unfit persons. The production of a healthy stock depended upon the healthy conditions of the parents; the resistance to diseases depended upon factors at present little understood. The practical question was whether a large expenditure of public money was justified in the absence of any reason for supposing that a larger stock of healthy children, with a strong resistance to disease, would result.

Discussion.

Dr. AMAND ROUTH said that in a lying-in hospital the ante-natal clinic should obviously be an important part of the training of students and midwives, and should be attended by those actually engaged in their practical midwifery. Amongst the subjects to be taught were: the recognition of venereal disease and the recently proved safety of dealing with syphilis by salvarsan during pregnancy and after birth; the recognition of tests for early toxæmia, especially now that accidental hæmorrhage, with its 75 per cent. of fetal mortality, was believed to be often toxæmic in origin and might be preventable; pelvic contractions, both major and minor varieties; the significance of the previous maternity history of the mother and her children; such complications as heart and bronchial disorders, old kidney disease, diabetes,

Graves's disease, and pregnancy pyelitis. Labour, whether natural, prematurely induced, manipulative or operative, should be taught in the maternity wards, and knowledge should be imparted regarding lactation, and hand feeding where lactation failed. Students should be taught to assist in laboratory research of all kinds, such as special urinary tests for toxæmia, examination of all expelled products of conception for detection of spirochaetes and other causes of death, attempts to unravel the mysteries of toxæmia, and of the functions of the syncytial ferments, examination of milk, etc. Opportunities should be found for giving students information on the causes of sterility by malformations, gonorrhoea, or as the result of operations, plumbism, *x* rays, etc.; on the causation of the low birth-rate, such as sterility, criminal abortion, and methodical, chemical, or mechanical restrictions to child-bearing. The responsibility of doctors in cases of criminal abortion was a useful subject to learn before private practice began. In urging the necessity for better obstetrical teaching it was important to contemplate the fact that out of 1,000 conceptions probably 250 infants died during gestation and before their first birthday, and that this proportion of deaths was doubled in illegitimate cases. Dr. Drage's statement that "medical supervision would do no more than raise up to maturity more unfit adults" was extraordinary. There seemed every reason to believe that if the methods advised in the two addresses were carried out at least half the ante-natal and early post-natal infantile deaths would be avoided, for doctors would be thoroughly equipped in the knowledge of the preventive hygiene of pregnancy, parturition, and the puerperium.

Dr. G. F. BLACKER held that the standard of teaching in obstetrics and gynaecology was on a lower level than that of other subjects because the teaching was largely done by junior officers, and the students seldom saw the obstetric physician perform an operation or deliver a case, or heard him teach in the ward. Five or six large special hospitals should be provided in or about London, equipped with pathological laboratories and staffed by senior whole-time paid teachers and assistants. There should be a four months' course, two of which should be devoted to gynaecology and two to obstetrics, and of these one should be for intern and one for extern work. The teachers must be engaged in original research, facilities for which should be supplied.

Dr. T. W. EDEN placed the responsibility for the poor-ness of teaching at the present time on the system of multiple hospitals. This arose from the over-staffing of the hospitals so that each member of the staff of one hospital found it necessary to seek additional clinical material in another. Moreover the clinical material in the hospitals was not representative of the future work of the students.

Dr. W. EARDLEY HOLLAND attributed the neglect of the student to (1) the claims of the midwife, who had absorbed most of the lying-in beds; (2) the apathy of modern gynaecologists towards ordinary work; (3) the idea that it was unnecessary to train the student to a high standard if this could not be maintained in after-life. That obstetrics and gynaecology should be treated as separate subjects was the opinion of a few who thought that by this means the obstetrician could devote more time to the baby; but he would like to see the infant taken over entirely from its birth by the pediatrician, who should also be responsible for the corresponding teaching and research. He disagreed with Dr. Drage with regard to ante-natal supervision. It permitted a diagnosis of the presentation, of the presence of syphilis, albuminuria, tumours, etc. Moreover, the mothers suffered from neglect of supervision as well as the babies.

Sir WALTER FLETCHER accentuated the importance of the teaching of the normal physiology of reproduction, including lactation, subjects at present imperfectly understood by the student, even at the time of his qualification.

Dr. F. J. McCANN advocated state subsidized maternity hospitals in London and throughout the country, and the adoption of the Continental system of whole-time resident assistants, paid a salary of, say, £500 a year. The appointment should be for five years, and the holders should travel for at least one month annually in order to bring back reports of the work in other schools. Means must be found to retain the poor man who had ability. The need had been accentuated now that the training of midwives and nurses had to be undertaken. Till such

hospitals were established London would not take its place as a leading teaching centre.

Dr. E. L. COLLIS, Director of Welfare, Ministry of Munitions, pointed out that now women were being employed industrially to such a great extent, students should be given definite instruction as to the amount and kind of work which a pregnant woman should be allowed to do, and should be put into a position to answer questions which might arise in the course of his work as medical officer to a factory.

Mr. VICTOR BONNEY said that teaching must be judged by its results. The maternal death rate due to pregnancy and labour had remained constant for the past seventy years in spite of great progress in knowledge. Deaths still occurred from toxæmia and sepsis. Pregnancy was the growth of a neoplasm; labour was the occurrence of self-inflicted wounds; the puerperium was the healing of those wounds. A great proportion of deaths could be prevented by the application of surgical principles. He hoped to see the day when midwifery would be regarded as a subsection of surgery and taught as such.

Dr. H. WILLIAMSON preferred the clinical system to that in vogue on the Continent. Obstetrics and gynaecology should be studied simultaneously. Each student should be compelled to train for one month in a lying-in hospital before doing extern work, and should personally deliver four or five women under competent supervision. This instruction was now largely left to midwives. Every general hospital should have a lying-in ward, officered by a good teacher who knew his work. He did not agree that a large institution was necessary, for it would introduce the German system of lectures and demonstrations. Students should be examined by their own teachers, in the presence of an assessor if thought desirable. The three causes of failure were haphazard training, fallacious examination, and the absence of an atmosphere of research.

Dr. LAPHORN SMITH emphasized the necessity of impressing upon the student the importance of examining the urine, to forestall eclampsia, and of wearing rubber gloves in order to prevent sepsis.

Lady BARRETT thought that at least six months should be devoted by the student to the study of the two subjects, of which at least one month should be spent at a lying-in hospital before doing outside maternity work. A month should also be spent in the combined study of the pathology and physiology of obstetrics and gynaecology, the student at the same time keeping in touch with the clinical aspect of the work by attending the physician in the wards and exhibiting the specimens from the cases.

Dr. R. W. JOHNSTONE described the methods of teaching in vogue in Scotland. Teaching, including that of minor cases, should be done by the senior staff. He did not agree with the appointment of a whole-time teacher; the emoluments would not be such as would attract the best type, and the teacher, being out of touch with the conditions of general practice, would become unable to impart to the students what they would be likely to require.

Dr. T. G. WILSON compared the teaching of this subject in London with that of other large centres. With its valuable clinical material he attributed the failure to attract overseas students to a faulty system of teaching. In such hospitals as the Johns Hopkins there were working under the head of the department as many as five or six assistants, who were only permitted to teach the students after having acted as assistant for three or four years, and having done at least one year's pathological work in the department. The subject could be taught as well in a small as in a large institution.

Dr. H. RUSSELL ANDREWS agreed with the general propositions that obstetrics and gynaecology must be taught together, that old-fashioned formal lectures were not of great value, and that students should not be sent out to attend patients in the district until they had had thorough midwifery training in the wards. He agreed with Dr. Lovell Drage that the "medical profession prevents to a considerable extent the loss among the unfit," but felt much more deeply that the medical profession did not prevent a large unnecessary loss among the fit. The only way to achieve this was by improving the teaching of midwifery. He disagreed emphatically with Dr. Lovell Drage's opinion that supervision of pregnant women would produce no other result than that of raising up to maturity more unfit adults. He pointed

out that in cases of syphilis and in minor degrees of contraction of pelvis, to take only two examples, supervision of pregnant women resulted in the production of A1 citizens. He considered that a department for medical supervision of pregnant women formed an integral part of a modern teaching hospital.

Dr. GRIFFITH replied.

DIFFUSE EMPHYSEMA OF THE WALL OF THE SMALL INTESTINE.

A MEETING of the Pathological Section of the Royal Society of Medicine was held on February 4th, with Professor WILLIAM BULLOCK, F.R.S., President, in the chair.

Mr. C. A. R. NITCH and Professor S. G. SHATTOCK, F.R.S., described a remarkable example of this rare condition, which was unexpectedly found during an operation carried out for a simple stricture of the duodenum immediately beyond the pylorus, associated presumably with the presence of an ulcer.

The patient had suffered for many years from pyloric obstruction, the stomach being so dilated as to reach the crest of the ilium; he had been in the habit of washing out the organ with a soft rubber tube. Gastro-enterostomy was successfully performed, after which the symptoms completely disappeared. A small V-shaped piece of the affected intestine was removed for the purpose of investigation, the parts being immediately sutured, without untoward result. In this the gas cysts were found to lie beneath the mucosa, the other tissues being here uninvolved. When exposed, the whole of the small intestine with the exception of the duodenum and the first part of the jejunum was covered with blebs of gas. The condition itself fell into a group to which the name "pneumatoses" had been applied—a group which included the various lesions due to the presence of air or of gas in the different structures or cavities of the body. Into it fell, besides bacterial and mechanical emphysemas, the aspiration of air into the vagina, or rectum, oesophagus, and stomach; into the peritoneum during laparotomy; the passage of gas from the intestine into the peritoneal cavity apart from discovered perforation in cases of chronic obstruction, etc. The entry of air during operations carried out in the Trendelenburg position, upon the bladder or vagina, was due, of course, to the negative pressure caused by the gravitation of the abdominal viscera; in oesophagoscopy the inflation of the canal arose from the negative pressure within the thorax. After punctured valvular injuries of the abdominal parietes, a local emphysema was at times observed (W. H. C. Romanis), due to the inspiratory movements, which was liable to be misdiagnosed as indicative of perforation of the intestine.

In birds, Hunter had pointed out that fracture of the bones containing air might be followed by a local emphysema. The only homologue of such a result in the human subject was furnished by the escape of air that sometimes took place from the frontal sinus after fracture.

In discussing the etiology of the condition recorded, a bacterial factor was excluded by the study of sections made from the piece excised; nor during life did the tissues exhibit any traces of inflammation. The cysts or spaces were lined with a single layer of endothelium, a multinucleated cell being here and there intercalated. After excluding a secretion or liberation of gas from the tissue plasma as an explanation, the etiology became reduced to a mechanical one. The condition could not be ascribed to distension of the gut itself, since there was no obstruction on the distal side; but air or gas must have been driven from the distended stomach through the base of an ulcer immediately beyond the pylorus into the intestinal walls, the peristalsis of the gut facilitating the onward movement of the gas.

Brouardel (*Death and Sudden Death*) had described a case of submucous emphysema of the stomach about a recently perforated ulcer, but proof was wanting that the condition had occurred during life. And the same doubt existed in regard to the case recorded by Haller, in which a tympanic distension of the intestine was accompanied with the formation of gas blebs beneath the peritoneum.

At the same meeting Dr. J. A. MURRAY communicated a

note on bacterial staining methods, and gave a demonstration on specimens and microscopic sections of acariasis in the lung of monkeys, the parasites being found in small foci scattered through the organ.

INTRINSIC CANCER OF THE LARYNX.

At a meeting of the Medical Society of London, held on February 10th, Major A. F. VOELCKER, R.A.M.C.(T.), President, being in the chair, Sir ST. CLAIR THOMSON read a paper on this condition. It furnished a sequel to that read before the same society on February 12th, 1912. Laryngeal cancer, he said, was not a common disease, but, fortunately, the intrinsic form was more common than the extrinsic. Of 212 cases Semon found the disease intrinsic in 136. Chevalier Jackson's figures showed that the intrinsic form was more frequent in the proportion of 98 to 45, and Schmiegelow in 66 cases of intralaryngeal cancer found the disease limited to a vocal cord in 36. Only a restricted proportion of cases came to operation, because of delay in diagnosis, and sometimes because the patient did not present himself sufficiently soon. Hence the amount of clinical material was always small. In eighteen years the speaker had only encountered four hospital cases which justified a laryngo-fissure, while he had performed it thirty-four times in the smaller field of private practice. Of these 38 cases of intrinsic laryngeal cancer which had been operated upon, 22 were alive and well, without recurrence, at periods varying from six months to ten years since the operation. Seven cases survived the operation but died from other causes at periods varying from ten months to ten years later. Local recurrence took place in only five. Two cases died from recurrence in the glands, but without recurrence in the larynx. In one this occurred seven and a half years after laryngo-fissure, in the other within seven months. Two cases were alive, but recurred. In one the disease recurred in the glands of the neck one and a half years after laryngo-fissure; the glands were operated upon, and he was now well. In the other recurrence was suspected in the subglottic area and on the opposite side three and a half years after operation.

In these cases, comprising four females and thirty-four males, and varying in age from 40 to 75 years, no patient had died from a cause attributable directly to the operation.

These figures, taken in conjunction with those of Semon, Chiari, and Schmiegelow, confirmed the views that the results were exceedingly good, and compared favourably with those obtained by surgical treatment of cancer in other internal organs, and that the advance was striking. The figures also showed that the first year after operation was the anxious one as regards recurrence. He felt considerably diminished anxiety if the third month passed without a suspicion of re-growth. When an epithelioma was limited to a vocal cord and recurred within twelve months, he would regard it as an incomplete removal. Recurrence was more apt to take place, and after a longer interval, when the anterior commissure or subglottic area was involved. In none of the thirty-eight cases had a laryngo-fissure been performed for cancer and the disease found to be of another character, but in several cases the diagnosis had to be deferred for a time, varying from a few months to a year.

The Operation.

In addition to the usual preparations, the mouth and teeth are rendered as clean as possible and tobacco and alcohol are reduced to a minimum or cut off for three days before. A dose of bromide (15 to 20 grains) is given on the previous evening, but neither morphine nor atropine. Half an hour before the operation the line of the incision is infiltrated with eudrenine (a solution of eucaine and adrenalin). The skin of the neck is purified with soap and water and a carbolic dressing, and not damaged by painting with iodine. A general anaesthetic, preferably chloroform, is given in the usual method. One long incision is made from the thyroid notch to the sternum; 10 to 15 drops of a 2 per cent. solution of cocaine, to which a few drops of adrenalin are added, is injected intratracheally, and a similar injection made through the crico-thyroid membrane. Median tracheotomy after dividing the thyroid isthmus, if it cannot be hooked upwards and downwards, can then be carried

out without spasm or cough. A large-sized Durham tracheotomy tube is then introduced, and the thyroid cartilage divided exactly in the middle line with saw, knife, scissors, or shears. A Killian's median rhinoscopy speculum is then used to dilate and inspect the endo-larynx. After application of 5 per cent. cocaine and the insertion of a gauze plug through the thyroid opening over the top of the tracheotomy cannula, the larynx is semi-dislocated sideways to bring the affected cord more *en face*. This is then raised with all the soft tissues by a subperichondrial dissection. The outer perichondrium of the thyroid cartilage is peeled off and the greater portion of the ala clipped away, and the growth subsequently removed, with a good margin around it, with curved scissors. Bleeding is arrested by pressure, the tracheal plug removed, and the thyroid opening closed by drawing the soft tissues together over it. Deep (catgut) and superficial (silkworm and horsehair) sutures close the whole external wound except opposite the tracheal opening. The tracheotomy tube having been removed and a dry gauze dressing applied, the patient is returned to bed in a sitting posture.

Sir St. Clair Thomson spoke emphatically of the value of open chloroform in these cases, at first through the mouth and later through the tracheotomy cannula. Most of the patients were able to swallow within a few hours, and many of them sat out of bed and read their newspaper the same evening. It was the exception for a patient not to be sitting up in a chair next day and eating semi-solid food. The preliminary infiltration of the skin incision with eudrenine and the intratracheal injection of a 2½ per cent. solution of cocaine greatly contributed to this satisfactory result. He preferred one long incision to the two which had been proposed—that is, one over the larynx and one for the tracheotomy—considering the slight cosmetic gain in the latter procedure more than counterbalanced by the greater facility and safety of one long incision. He could see no gain in abandoning the safeguard of tracheotomy. There was no need to plug off the pharynx through the split larynx. In 25 cases the tracheotomy tube had been withdrawn as soon as the operation was completed, but in 2 it had to be replaced for sharp haemorrhage. He was glad that in both there had been a preventive tracheotomy, and that the skin in the neck had not been stitched up over it. He saw no great objection to retaining the tube for the first day, particularly when there was a tendency to bleeding at the time of the operation, or the patient was congested, or with a history of alcohol and tobacco, or when the growth was very extensive or largely subglottic, or should no experienced surgeon be at hand. Excision of the thyroid ala left no drawbacks and facilitated removal of the growth and control of bleeding.

After-Treatment.

The patients were placed in bed, with a bed-rest, almost sitting upright. The same evening many could sit out of bed, and were able to drink sterilized water. The appearance of a large granulation in the wound during healing sometimes caused much anxiety. In 11 cases it was detected, at times varying from fifteen days to two months after laryngo-fissure. It appeared on the cicatrizing cord or in the anterior commissure. In 4 cases it was left alone, and took from three to twelve months to disappear. Of the other 7 cases he removed it through the mouth and under cocaine by McKenzie's duck-bill forceps in 5. In one of the remainder it was subglottic in position, and so large that stenosis was threatened, and tracheotomy had to be done. The tube was worn for six weeks, after which time the granulation had disappeared. In the other a large granulation, the size of a cranberry, appeared in the anterior commissure two months after operation, and proved to be an exostosis. It caused little trouble, and was still present two years after the operation. The patient was 72 years old. Most patients were sitting out of bed and eating solid food on the day following the operation. They suffered no shock and recovered rapidly. The windows were left freely open day and night. The old paraphernalia of screens round the bed, closed windows, and even temperature, steam kettles, and such like, had long been abolished. It had been his custom to keep the patients silent for the first three weeks. They then started whispering, and as soon as a good cicatricial cord had replaced the one removed they were not only

encouraged to speak, but in cases of bad speakers further improvement was secured by sending them to a voice trainer. The voice was always sufficient for the ordinary purposes of life: schoolmasters had been able to continue their profession, and others could make public speeches. But all the patients had not been kept silent for these first three weeks, and he thought that by earlier resumption of vocal use there had been better compensatory results, and not that tendency to contraction which had been observed in two of the most silent cases. He now thought a week's silence was sufficient. If patients applied early with epithelioma limited to a vocal cord the death-rate should be nil, the restoration of voice satisfactory, and the cure lasting.

Surgeon-General BIRKETT, C.A.M.C., agreed that fixation of the cord was no invariable sign. All must have seen cases when it was absent.

Mr. WILFRED TROTTER said that his practical experience was confined to conditions extra-laryngeal. He had been removing the ala of the thyroid cartilage for ten years for another reason—namely, to obtain access to the upper part of the larynx, and consequently had removed the ala more completely, including both cornua. He had probably removed the whole ala fifty times, and there was no evidence that it interfered with the recovery of the patient's voice. It was a harmless and very useful procedure. He had never ligatured or clamped the thyroid isthmus, and no evil results had followed. An important reason for dividing the isthmus was that if the tracheotomy tube had to be removed the isthmus could not descend over the opening and hinder its replacement. He had known lives sacrificed in this way by leaving the isthmus intact.

Dr. W. HILL mentioned a case in which fatal haemorrhage had occurred, as evidence of the value of retention of the tracheotomy tube and plugging temporarily, for by this means death might have been avoided.

Mr. HERBERT TILLEY had operated upon twenty-two such cases. He thought that this kind of cancer might form a basis from which some clear ideas might be evolved on the infectivity of the disease. In this respect cases in which growth recurred ten, twelve, or more years after operation were interesting. He doubted whether "recurrence" was the proper term, and queried whether an immunization took place, and that the so-called "recurrence" followed when that immunization wore off.

Mr. IRWIN MOORE advised that the tracheotomy tube should be left *in situ* for a few hours if neither the surgeon nor a dependable substitute were within immediate call. There was particular risk in leaving a patient with no tube after low tracheotomy. The results of operation were so good chiefly because the operation was done early and the diagnosis was established. He hoped for more co-operation with the general physician in cases of persistent hoarseness.

Mr. C. McMAHON offered the following suggestions for re-education of the voice in these cases:

1. Develop the sterno-thyroid and sterno-hyoid muscles, and keep the larynx low. Use a tongue depressor to help to accomplish the descent of the larynx.
2. Make the patient speak as little as possible until a deep pitch of voice is established.
3. Let the breathing movement be inferior-lateral costal, with a small but definite expansion, and let the motive power of the voice be the powerful contraction of the abdominal muscles.
4. When the larynx is established in its low position instruct the patient that voice gets its chief resonance in the head and chest, and that the throat is a conduit pipe between them, and must be entirely uncontracted; and also that free lip movement increases oral resonance. If further vocal treatment is necessary, the resonator positions of vowel sounds and clearness of articulation generally should be taught.

A really useful voice can be anticipated in practically all cases.

Mr. RIGBY SWIFT, K.C., at the request of the Minister of Pensions, has become president of the Officers' Appeal Board; the other members of the Board are Dr. Norman Moore, president of the Royal College of Physicians of London; Sir Alfred Pearce Gould, K.C.V.O.; and Captain Albert Smith, M.P. An officer whose claim for retired pay from the Ministry of Pensions has been refused on the ground that his disability is not attributable to, or aggravated by, military service, may ask the Ministry to refer his claim to the Appeal Board, which meets at intervals as the cases to be dealt with require.

THE BRIDGE-HEAD.

BY

SIR ANDREW MACPHTAIL.

THE end has come. This Ambulance, which was in Rest at Boolezele,¹ which spent a Wet Night in the forest of Eporlecques,² and did a Day's Work on Vimy Ridge,³ is now in the Cologne Bridge-head at Siegburg, *trans flumen Rhenum*.

This most mobile of all military units has reached the limit of its forward wanderings, and is now at ease in a noble house in a pretty town in a peaceful and pleasant country. With work it has nothing to do. There are a few cases of influenza to be cared for, but the great days are gone for ever. In these two divisions of the Canadian corps, numbering sixty thousand men, there were only eleven deaths during the five weeks of occupation. The medical officers have ample leisure to brood over the past, and compare their present magnificence with the sordid surroundings, the squalid discomfort, and the poignant tragedy of the four preceding years and winters.

This Ambulance mobilized in Montreal, November 14th, 1914. It came overseas in April, 1915, and went to France in the following September. The normal establishment of officers is ten, and of the original personnel only two remain. It has had its losses. The colonel was killed at Courcellette; a captain was killed at Amiens; the quartermaster at Arras. Also, it has had due share of honours. To these officers were awarded four D.S.O.'s, one additional bar, four military crosses, and one knighthood. Of the other ranks one half remains, and one third of the horses are yet in service.

The Rhine was crossed on December 13th. The crossing was a ceremonial, and one who rides in ceremony sees nothing but his horse's ears, save for the moment when he turns "eyes right," and then he sees only the saluting officer. But it must have been to the observers a great show of power. From eight in the morning until four in the afternoon the troops were crossing in columns of route, ten yards between battalions, fifty between brigades. The troops marched without open enthusiasm, without emotion, void of passion, with no sign of imagination, without any apparent pride, but with the slow relentlessness of a glacier, with the inevitable power of a geological movement, file after file of fours with bayonets fixed, wagon after wagon, gun after gun, lorry after lorry—no haste, no confusion, no halts. Each column passed the saluting point to the minute, every horse and every man in his appointed place: and this after a march of nine days at twenty miles a day with rations none too abundant, for the rail-head was left perilously far behind.

A bridge-head has little to do with a bridge. It is an area as large as an English county. If one point of a compass be placed upon Cologne and the other upon Bonn, which is twenty miles to the south, and the compass be turned eastward in a great half-circle and back to the river again at the north, the line will fall far within the broken hills which border the Rhine valley. The line itself follows a good contour, and a commanding position is not sacrificed to topographical exactness. The army believes in a margin of safety.

The bridge-head is a country of wood, copse, orchard, farm, heath, dry and wet meadows, fen, moor, moss, and water flowing in rivers, rushing in streams, still in pools or stagnant in the ditches. The main roads are paved with stone or cement blocks.

¹ BRITISH MEDICAL JOURNAL, September 1st, 1917.

² BRITISH MEDICAL JOURNAL, December 7th, 1913.

³ *Lancet*, June 30th, 1917.

Other roads are well metalled, or made from the soil, but good. Then there are farm roads from which one can walk up the hills by bridle-paths.

The spectacle of real interest in the bridge-head is the Germans themselves. It seems incredible that one can see enough of them. For four years they were as elusive as ground-hogs; and the belief grew that there were none, that they had all gone home; but this belief could be quickly dispelled by lifting one's head above the parapet. An occasional prisoner, and on certain days of the year whole companies marching down, that was all one saw of the Germans; but here one may stand all day to the eye's content. They throng the streets, stream across the bridges, and inhabit the villages; but it is in the opera house at Cologne they are seen in their native haunt.

In the mass the Prussian is singularly true to type. As they sit in rows they are all the same, with sloping shoulders, hard, lean, implacable faces, dull as Mongolians, and without much head behind their ears. At regular intervals in the rows the face of a Jew looks intimate and almost friendly. They are all dressed in black, and the absence of colour from the women's garb gives an impression of melancholy and gloom. The women look like overgrown girls, their dress conventional, but short at the bottom and short at the top. The eyes of men and women alike are hidden from seeing us. We are to them as ghosts and shadows. Their mien is one of cold neutrality. They do not stare, and they do not turn aside. Never before was witnessed so strict and formal a politeness; but a world without a smile is a cheerless world.

The opera is done with full pomp, and the house is always crowded. The performance begins at such an hour as will bring it to an end before eight, as civilians must be in their homes by nine. The hour was originally seven, but that interfered with business. One might wish to buy something, and the time was changed for our own convenience. For the first day or two it was a rule that officers must be saluted by civilians; but returning the salutes became so irksome that the practice was abolished.

The Germans think we do the occupation business very badly. Their method in Belgium and France was in their eyes the proper way. They are disappointed. Even a photographer who is engaged to make a group of officers will demonstrate to them in his own person what they should do to make themselves look fierce and haughty. They do not understand that a soldier may be pleasant yet implacable, victorious without arrogance, at once merciful and just. The English are frightfully righteous, they say. They ask the meaning of it, and the only answer is that the English make war upon armies, not upon civilians, not upon women and children.

For the benefit of those who are to write the history of the war let it be recorded that Cologne was first occupied by a Canadian subaltern of sappers. This young officer was returning from leave. At various times for four years he had been returning from leave, and the ethics of the return is to arrive at the front without delay. But in the meantime the corps may have moved to a new area. It is the business of the Railway Transport Officer to direct inquirers to their units; but the R.T.O. is the last man in the army to know where a unit is at any given moment. The *permissionnaire* turns his face eastward and takes to the road. He enters any train that appears to be going in that direction, and completes the journey in a chance lorry, mess-cart, or ambulance.

For four years there was a fair degree of certainty that the conveyance would not go too far. The German line from the sea to Switzerland was an effective barrier. At one station this sapper officer

saw a train heading in the right direction. It appeared to be commodious and he went on board. It turned out to be the armistice train, and it deposited him in Cologne. He could have gone to Berlin, but his immediate concern was to rejoin his unit. When the train proceeded he was the only British officer in Cologne. In this strange circumstance he did the obvious thing. He went to an hotel, engaged a room, and having taken possession waited until his unit arrived for his support.

The spell of the Rhine has fallen upon the troops. The river is of the proper size and speed. It is unmistakably a river and not a lake. By day its surface is yellow and finely wrinkled like the face of a slow, sad old man; by night like burnished metal it gives back the lights in shafts of red, yellow, and silver. Soldiers cross and recross. The New Zealander is there; but it is not the ruins of St. Paul's he regards. It is the Hohenzollern bridge he stands upon, a contraption of towers, turrets, battlements, and embrasures, like a thing upon the German stage. He considers the four equestrian statues, two at each end, beautifully weathered, but he finds something comical in the bronze truculence of tail, and mane, and plume. In the western background are ever the twin towers of the cathedral like saw-toothed bayonets. A sapper, who in virtue of his craft has an eye for wide impressions, found in this edifice a resemblance to an enormous man with shaggy head and hairy chest, and powerful arms, but with no loins nor legs nor guts; and he contrasted it with the church at Amiens with its single spire, which, as he said, arose like a rod of spikenard in the wilderness.

Below the bridges the barges pass, and one still bears upon its prow a miniature Christmas tree. Down stream the bridge of boats is open so that the current may have free way; for the river is in flood, and a boy is poling an improvised raft in the overflowed waters. Up stream the New Bridge stretches its three delicate spans across—a frank structure such as any rational people might build. A single aeroplane patrols slowly up and down the river: that is the only sign that a state of war still exists.

In Cologne it is even more like the old tourist days, and the music shop of P. J. Tonger is doing its usual business. The place was comfortably filled with men, women, and a few officers, buying the scores of the opera; and they were as solemn as if buying a piece of music were a sacrament. The shop is like the library of a college, the alcoves adorned with the traditional busts. A woman was in doubt about the music she wanted, and the assistant hummed the various tunes to her. He wore a G clef in gold as a scarf-pin. He sold the scores of "Tannhauser," "Lohengrin," "The Flying Dutchman," "Mignon," and "Carmen" at four to six marks apiece. Had he Charpentier's "Paris"? He missed the irony of the request. "I will ask my colleague," he said. Had he "Parsifal"? "I should hope so," he protested with a fervour that was almost religious.

The army is disturbed. It is the children who disturb them. Wherever one dismounts a crowd assembles, singularly devoid of beauty, as nervous as wild animals, pale to yellowness, with dull, apathetic faces; without a trace of colour in any cheek. One child was eating a piece of disgusting, black, sodden bread. A boy showed an unhealed wound following an operation for hare-lip, more repellent than the original deformity. One of the more forward asked in a negative way for chocolate—*nicht Schokolade?*—and his companions were alarmed at his boldness.

On Christmas Day we made our first visit to the outposts. The journey began at Deutz, which is across the river from Cologne, and ended at Lindlar,

a good twenty miles into the north-eastern hills. The route lay by Ostheim, Heumar, Rosrath, Imme-Koppel, Hoch-Keppel, and Vellingen, at first squalid villages and then hamlets of scattered houses. Once clear of the town the road enters a planted forest of oak, spruce, fir, elm, pine—all laid out like a town. The plantings of each year could be distinguished, and they ranged from a foot in height to well grown trees fit at least for the timbering of mines.

Once through the forest the Agger was seen tumbling down from the hills, and a branch of the main stream served as an upward guide. Snow lay upon the ground as we rose, but in the river bottom on the right the grass was green along the narrow ditches that drained the land. Groups of people, mostly old women, young women, children, and old men, all in decent black, were on the way from church, following paths across the hills, and they would reply cheerfully to a "Merry Christmas." Although there is a rule against "fraternizing," there was no harm in saying that much.

After travelling 25 miles in a north-easterly direction we came to a sign which indicated that we had reached the limits of the bridge-head. There was a fire of sticks in the road. A few ground-sheets spread over a frame formed a shelter. Two boys were standing by with their hands in their greatcoat pockets. They looked very cheerless. One was tall; the other was short; he had a cast in his eye. His name was Cooper. This was the army of occupation; at least, this was all we saw. But we knew, and the Germans knew, that men and guns beyond belief were concealed in farms in the folds of the hills. We passed on into the neutral zone which extends 10 kilometres further, and turned about at Lindlar. Civilians were going and coming, unheeded by the sentries. Although they allowed that they would stop any "suspicious characters," they did not explain the grounds on which they would "suspect" a person.

On the return journey we stopped and smoked a cigarette in a little wood on the hillside. It was free of snow, and the red needles of the fir lay clean upon the ground as in the woods at Orwell where "Gipsy" lies buried. In other places we walked on moss deep to one's spurs. A few woodmen were at work, and women were carrying off branches for their warmth. A thin blue smoke went up from a clearing. Logs were piled with scrupulous exactness against the needs of war. Something happened. There let them lie. It was all like regarding the work of men who are already dead.

At Imme-Keppel we called at a roadside house for rest and warmth. There was a commodious room on the right of the hall. It contained a table, a bench, a few chairs, and an open cupboard with glasses and bottles. On the wall were homely pictures—an old woman sitting in a high chair with a soldier kneeling to receive her blessing; a placid river; and a Christmas scene with the legend, "Come, Herr Jesus, and sit with us." We warmed ourselves, had a hot drink, which the woman called coffee, and a glass of "alcohol-free" stuff with a neighbour who came in.

This man had been on the Russian front far east of Riga, and we had much talk with him. He had a way of saying "Yes," which meant, "Yes, we made a mistake. We were led astray. But there it is. What is to be done? I do not know. See what you can do to clear away the mess." Also, he was sorry for us. He was done with war. We were far from our homes. Our job was not finished. We were "sent." We could do no otherwise. The sum of his reasoning was: In Russia there are good people and bad people; in England there are good people and bad people; in Germany there are good people and bad people.

The goat in the Greek verse gnawed the vine to the root, but the vine was quite sure it would yield grapes for wine to be used when the goat lay dead on the altar. The British Empire is that vine, and the German is the goat. He is shattered for ever. He is a dispersed people. The dispersion began even before the war: that is the meaning of his penetration into other lands. His empire was a fabricated thing made by hands as by one who thought to add a cubit to his stature. The fabric has come to the ground and can never be rebuilt. The German must have a mechanism for everything, and his machine has broken down. In that is the history of Germany, and the meaning of the war.

If he would draw a curtain, he must have a string and pulley. If he would lift his blind, he must have a crank and a cogged wheel. In the mess-room of this house is a peristyle against the wall like a mantelpiece. It conceals a radiator. On the floor is a grate filled with pieces of wood nailed together. Below this wood are electric lights covered with red paper, and underneath the grate is a piece of metal to protect the floor from the imaginary heat. There is also a sheet of stamped bronze to conduct the smoke that has no existence. The contraption is to him a fireplace, and to his mind it is much better, more "efficient," than the English fireplace, which is made of stone, and burns fuel directly. He built of wood, hay, straw, stubble, and thought it stone. The world to him was a stage, and the false was the true. His whole fabric was a tower of Babel; his stones brick, slime for mortar. The Germans now look upon us not as masters, but as saviours from themselves.

January 7th, 1919. A train left Cologne at 5 a.m., and at sunrise I awoke, the sun looking as it looked in Flanders, shining through the yellow mist across the level plain. Past Eschweilerhof the country became sparse and rough. White birches and young pines grew above the ledges of rock. After Aachen a tunnel with flaring lights; then red hills, and smoky clouds in a pale blue sky; houses on the short hillsides. Hergenrath at 9.30; a wide horizon upon the hills: woods broken by red quarry faces; brawling streams; red roofs, white spires, and square towers; a difficult country; one sees why the Germans preferred Belgium for their march. The journey brought us past Herbersthal, Verviers, Ensival, Papinster, Gafontaine, Nessonvaux, Trooz, Heime, leaving Liège some miles to the north. Through low hills and green valleys; at Ensival a river, probably the Vesdre, was crossed; then the Meuse was reached. From Huy to Namur the train followed this noble river up a rich, green valley with bold cliffs on either hand, showing tilted benches of rock. A man was ploughing with oxen, and the meadows were white with sheep. Namur was reached at 3.30; then we followed the pretty Sambre, a gentle stream, until the valley widened out to a pleasant countryside. Charleroi was reached at 7.30, and we had dinner in the canteen, a gross affair.

January 8th, 1919. Awoke upon a sunless day. A windmill was in sight. We must be east of Mons or west of Arras. We were at Somain near Douai. We had made little progress in the night, and were now due at Boulogne. Soon we came into the area of roofless houses and blown bridges. There was the usual acrid smell in the air. The shell holes are quite grown with grass, but no single point arises in the desolation. It is all a shambles, a slaughter-house, squalid as a shack wherein murder had been done. In the course of the day we passed the towers of Mount St. Eloi, which are against Vimy Ridge, and I looked upon a battlefield for the last time.

British Medical Association.

CLINICAL MEETING, APRIL 8th to 11th, 1919.

The arrangements for the special clinical meeting of the British Medical Association in April next are sufficiently advanced to warrant the publication of the provisional programme printed below.

The meetings of the sections will be held in the Imperial College of Science at South Kensington, the unrivalled resources of this great institution having been placed with great good-will at the disposal of the Association for the purpose by Sir Alfred Keogh, G.C.B., M.D., the Rector.

Further particulars with regard to the business of the sections and the general affairs of the meeting, including certain evening entertainments, will be published at an early date.

PROVISIONAL PROGRAMME.

SECTION OF MEDICINE.

Wednesday, April 9th.—10 a.m. to 1 p.m.

War Neuroses.—Chairman: Colonel H. MAUDSLAY, C.M.G., C.B.E., F.R.C.P., A.A.M.C. Introducer: Lieut.-Colonel F. W. MOTT, F.R.S., R.A.M.C. A discussion will follow.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(In conjunction with the Section of Preventive Medicine and Pathology.) The subject will be treated under the following headings:

1. Clinical Aspects.

(a) Short account of epidemics of 1918 in France. Contrast between clinical features of spring and autumn epidemics—for example, respiratory complications.

(b) Epidemic in England. Contrasts and resemblances to above.

2. Epidemiology.

3. Etiology.

N.B.—The pathological aspects will be treated by means of demonstrations.

Friday, April 11th.—10 a.m. to 11.30 a.m.

Venereal Disease.—Chairman: Sir WILLIAM OSLER, Bt. The subject will be introduced by Brevet Colonel L. W. HARRISON, D.S.O., K.H.P., Lecturer in Venereal Diseases, Military Hospital, Rochester Row. A discussion will follow.

11.30 a.m. to 1 p.m.

Prognosis in Cardio-vascular Affections.—Chairman: Sir JAMES MACKENZIE, M.D., F.R.S. Introducer: Dr. THOMAS LEWIS, F.R.S. A discussion will follow.

DEMONSTRATIONS.

It is hoped that the following demonstrations may be arranged to take place in the afternoon beginning at 2.30:

Wednesday, April 9th.

Interesting Neurological Cases. National Hospital for Paralysis and Epilepsy, Queen Square.
Diseases of the Chest. Brompton Hospital.
Mine Gas Poisoning. Lieut.-Colonel D. Dale Logan, D.S.O., R.A.M.C.

Thursday, April 10th.

Newer Methods in Cardio-diagnosis. National Heart Hospital, Westminsterland Street.
Air Force Tests.
Cases and Specimens (Cardiac). Dr. Thomas Lewis, F.R.S., at University College Hospital.

Friday, April 11th.

Venereal Diseases. Lieut.-Colonel L. W. Harrison, D.S.O., Military Hospital, Rochester Row.
War Neuroses. Lieut.-Colonel F. W. Mott, F.R.S., Maudsley Clearing Hospital, Denmark Hill.
Diseases of Children. Hospital for Sick Children, Great Ormond Street.

It is probable that other demonstrations will be arranged and that some of the above will take place on more than one afternoon.

SECTION OF SURGERY.

Discussions on the following subjects have been arranged to take place in the morning of the day indicated.

Wednesday, April 9th.

Gunshot Wounds of the Chest.—Introducers: Colonel T. R. ELLIOTT, D.S.O., and Colonel G. E. GASK, C.M.G., D.S.O.

Thursday, April 10th.

Wound Shock.—Introducers: Professor W. M. BAYLISS, F.R.S., and Dr. H. H. DALE, F.R.S.

Friday, April 11th.

Reconstructive Surgery.—Introducer: Major R. C. ELMSLIE.

DEMONSTRATIONS.

The following demonstrations have been arranged to take place in the afternoon:

Wednesday, April 9th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.
2. Specimens illustrating Wounds of Arteries; at the Royal College of Surgeons.
3. On X Rays.

Thursday, April 10th.

1. On Facial Injuries; at Sidcup.
2. On Injuries of the Eye.
3. Specimens illustrating Fractures of the Skull; at the Royal College of Surgeons.

Friday, April 11th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.
2. Specimens illustrating Gunshot Wounds of the Abdomen; at the Royal College of Surgeons.
3. On X Rays.

SECTION OF PREVENTIVE MEDICINE AND PATHOLOGY.

Discussions have been arranged for the morning meetings on the following subjects:

Wednesday, April 9th.—10 a.m. to 1 p.m.

The Dysenteries: Bacillary and Amoebic.—Introduced by Lieut.-Colonel L. DUDGEON, C.M.G.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(At a joint meeting with the Section of Medicine, *q.v.*) Epidemiology: Introduced by Captain M. GREENWOOD, R.A.M.C. Etiology: Introduced by Major BOWMAN, C.A.M.C.

Friday, April 11th.—10 a.m. to 1 p.m.

Malaria.

DEMONSTRATIONS.

Demonstrations have been arranged to take place in the afternoon of each day as follows:

Wednesday, April 9th.—On Malaria.

Thursday, April 10th.—On the Pathology of Dysentery; at St. Thomas's Hospital.

Friday, April 11th.—On the Anaerobic Bacteria which infect Wounds; and On the subject of Filter-passing Viruses in Influenza and other Diseases, and Rickettsia Bodies. At the Lister Institute of Preventive Medicine.

THE WAR COLLECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The collection of pathological specimens from the seat of war in France will be on view daily from 10 till 6 (on Saturday 10 till 1), at the Royal College of Surgeons, Lincoln's Inn Fields, W.C.

The collection comprises a large and complete series of gunshot fractures of the bones; and another series, equally complete, of gunshot injuries of the different organs and soft structures, as well as specimens of disease incident to warfare, the effects of gassing, trench nophritis, gas gangrene, etc. The entire collection is systematically arranged, and each preparation is furnished with a brief description and history. So far, three demonstrations have been arranged. Each will occupy about one hour, and will be given from 3.30 till 4.30.

Wednesday.—Sir George Makins: Injuries of Arteries.

Thursday.—Professor Arthur Keith, F.R.S.: Fractures of the Skull.

Friday.—Mr. C. S. Wallace, C.B.: Abdominal Injuries.

British Medical Journal.

SATURDAY, FEBRUARY 15TH, 1919.

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY.

THERE is no part of medical education in which the public welfare is more largely or more vitally concerned than the teaching of obstetrics, and the discussion on this subject which took place at the Royal Society of Medicine last week is of more than merely professional interest. The title of the discussion, "On reconstruction in the teaching of obstetrics and gynaecology to the medical student," may be regarded as an indication that the attempt to divorce in teaching these two essentially related subjects has failed. Where the separation has been effected, the experiment has not been justified in the results. More than one reference was made in the discussion to this point, and the sense of the meeting was definitely and emphatically against separation.

In the present stage of the evolution of medicine, and in view of the increase of enlightened public interest, it was not unnatural to find that the preventive aspects of obstetrical and gynaecological teaching bulked largely in the minds of the speakers. A lead along this line of discussion was ably given by Dr. J. S. Fairbairn, whose ideal is the association in one teaching hospital unit of a complete maternity centre, a complete gynaecological centre, and a child welfare centre. Such an arrangement would undoubtedly enable the student to gain a comprehensive view of his future responsibilities and to study in a natural sequence the diseases of pregnancy, the complications of labour, the gynaecological results of childbirth, and the affections of infancy. Furthermore, if the student were made to feel that during his attendance he was an integral part of such a social welfare unit, the community would subsequently gain by the quickening of his sense of medical citizenship.

We are not prepared to follow Dr. Fairbairn in his suggestion that the care of the infant up to nine months or a year might advantageously be the province of the obstetrician. While there is everything to be said for an unbroken sequence in the teaching of obstetrics and pediatrics, the argument for the teaching of the two subjects by the same teachers is by no means so strong. Theoretically the infant should be the charge of the pediatrician from its birth. If it be impracticable to draw the dividing line at this logical point it seems better to adhere to the established practice by which the infant passes from the obstetrician's care at the end of the mother's puerperium.

The advantages which have already followed, and which will follow in increasing measure, the efforts to improve the care and supervision of the expectant mother are so obvious that no dissentient opinion was to be looked for in a learned society. It was therefore somewhat surprising to find Dr. Lovell Drage stating that "there is no reason to suppose that the supervision of pregnant mothers will produce any other result than that of raising up to maturity more unfit adults." This opinion was combated by the speakers during the discussion, and it seems almost superfluous to point out some of the considerations which render the statement fallacious. We may take,

as an example, the hundreds of perfectly healthy babies that are annually sacrificed by craniotomy owing to the lack of foreknowledge of a narrow pelvis; or the thousands of preventable abortions and miscarriages that occur from causes which are in no way calculated to affect the healthiness of the fetus. Even in toxæmic conditions in pregnancy there is no ground to suppose that the child of a woman with albuminuria, who by careful treatment during her pregnancy is steered past the perils of eclampsia, is bound to grow up "unfit"; nor even need the offspring of a woman who has had syphilis and been adequately treated by modern methods prove to be a physical degenerate. Far from decrying the value of the care of the expectant mother, we believe that to just the degree in which it is carefully and conscientiously effected, so will sacrificial operations be consigned to limbo, and eclampsia become a disease almost, though never absolutely, unknown.

In regard to the actual methods of teaching, the particular difficulties of the London schools were naturally in the minds of most speakers, just as the special difficulties of the Edinburgh school were in the middle foreground in the discussion of the same subject at the Edinburgh Pathological Club.¹ The really crucial points are, however, applicable to all schools. In approaching the question it is well to keep clearly in mind how obstetrics differs from medicine and ordinary surgery. Putting aside major operative surgery as in the main outside the province of the general practitioner, it is in the practice of obstetrics above all that the doctor is brought into daily, intimate conflict with conditions in which a mistake has to be paid for by lives—two lives, possibly, for one mistake, and the payment often is demanded on the spot. Increased attention to the pregnant woman will certainly diminish the frequency of unexpected obstetrical emergencies, but not all the care in the world can prevent the occurrence of, for example, adherent placenta or placenta prævia. Professor Briggs's article, which appears at p. 179, is a timely illustration of this very point, as well as of the benefits derived from prompt treatment of the expectant mother.

From such considerations one or two conclusions, almost axiomatic, may fairly be drawn. In the first place, the subject is so vital that the teaching of obstetrics must not be crammed into a few lectures and reduced to the level of a minor specialty. Together with gynaecology, a six months' course, suitably divided into systematic, clinical, and practical work, is not a day too much. In the second place, it is so essential that the graduate should have a practical knowledge of midwifery, and have that knowledge at his finger-tips in every sense of the expression, that more attention and more supervision must be given to the clinical and practical parts of the teaching than hitherto. It was manifest from the discussion that in London the teaching is left too much to junior members of the staff, the seniors being greatly occupied by operative gynaecology and the claims of private practice. In the provinces this difficulty and source of weakness may not be so apparent. It was only to be expected that the obvious remedy of whole-time teachers should be proposed, but the value of this proposal is open to question. In the first place, the emoluments to be offered to a whole-time teacher of midwifery would have to be very generous if the right stamp of man is to be attracted to such a career. Secondly, there would be a danger of such a teacher losing touch with the conditions of practice. During the war some of our

¹ *Edinburgh Medical Journal*, November, 1918.

older generals were removed from the control of the home training of the armies because they were not in personal touch with the conditions of warfare as waged by the German. Surely that is an object lesson. Those officers were presumably masters of the general principles of warfare, but they were unfamiliar with the particular conditions of the war.

Stress was rightly laid during the discussion on the fact that a teaching department in obstetrics and gynaecology which is not also a centre of research work is to all intents without a soul. This is a cardinal truth, and one that makes the suggestion of whole-time teachers more seductive. But it is not necessary for the head of the department to spend many hours daily in his laboratory in order to make it a centre of research. The spade work ought to be done by the junior members of the staff; the function of the chief would be to inspire and suggest and guide.

But, when all is said and done, the better teaching of the medical student is only part of the problem to be faced. A larger and hardly less important part is the better education and control of midwives—a subject with which the Ministry of Health, of blessed expectations, must grapple. If it fail to do so, it will prove to be the only too legitimate offspring of the Local Government Board. And lastly, there is the general public to be educated, along the lines indicated by Mr. Victor Bonney, to a better appreciation of the essentially surgical nature of all consistently safe and successful midwifery.

THE FUNCTION OF THE ADRENAL CORTEX.

AN article on the influence of the adrenal bodies upon the genital system, written by Dr. Swale Vincent, Professor of Physiology in the University of Manitoba, for a discussion at the American Gynaecological Society eighteen months ago, has recently been reprinted.¹ It contains an interesting summary of the facts of comparative anatomy bearing upon the functions of the adrenal body. Dr. Vincent illustrates by diagrams the fact that the medulla and cortex belong to two different systems, and that their association in the adrenal body is, so to say, an anatomical accident. The medullary substance is an accumulation of the chromophil tissue which has arisen from the sympathetic in certain abdominal segments and has insinuated itself into the adrenal body proper, that is, into what is usually called the cortex.

The adrenal cortex is developed from the germ epithelium, as are also the accessory cortical adrenals which occur so commonly in many animals as to compel us to regard the cortex as part of a system. His contention is, therefore, that it would be wise for investigators to search for a separate function for each of the two systems, cortex and medulla; there is already evidence strongly favouring the view that the cortex has certain important functions in connexion with the development and growth of the sex organs. There is also abundant experimental evidence that it is the cortex, and not the medulla, which is essential to life. Extracts of the cortex do not contain any very special physiological principle. It is true that when injected into the veins of a living animal they lower the blood pressure, but this action is common to extracts made from all organs and tissues. The nature of the substance producing this effect is not certainly known; it is not choline, but it is possible that it may be betainazolyethylamine.

The cortical cells contain numerous lipid granules, the so-called cortical granules; their function is not known, but it may be that they are to be regarded as secretions about to be poured into the blood stream. The function of the adrenal cortex has not been ascertained, but there is good clinical evidence that it is related to growth and development, especially of the sexual organs. Bulloch and Sequeira reported in 1905 that tumours or hypertrophies of the adrenal body were sometimes associated with precocious development of the reproductive organs.

Vincent adopts Glynn's classification of the tumours and rests of the adrenal cortex. The main divisions are into (a) diffuse hyperplasia passing into adenomata, frequently associated with female pseudohermaphroditism, and (b) malignant tumours, either sarcomata or hypernephromata or mesotheliomata. Hypernephromata of the adrenal body in children is much commoner in females than in males, and tends to increase the male primary and secondary characters at the expense of the female. Enlargement of the adrenal bodies occurs in some animals in the breeding season and in pregnancy, and Glynn has found some evidence of enlargement in pregnant women. Some experiments in which small doses of the gland substance were given to white rats in their food seemed to show that enlargement of the ovaries or testes, as the case might be, occurred; but the evidence on this head is incomplete. Vincent admits that it is hopeless at present to attempt any explanation of the precise manner or the essential mechanism of the influence of the adrenal cortex upon the reproductive organs. The adrenal organs may secrete a hormone which passes into the blood stream and so reaches the reproductive organs; or there may be more than one hormone. It is, he thinks, possible that the simple physiological conception of underaction or overaction of the various ductless glands, now held to account for the various pathological states observed, may have to be supplemented or superseded by a consideration of modified or deranged function.

The paper by Colonel McCarrison, I.M.S. (published at p. 177), contains a striking observation on concurrent hypertrophy of the adrenals and atrophy of the reproductive organs. It was made in the course of an elaborate and laborious investigation on the pathogenesis of disease due to deficiency of certain accessory food factors. In experiments on pigeons he found that the absence of these factors from the diet led to atrophy of all organs and tissues except the adrenals, and that the atrophy of the testes was extraordinarily great. The average weight of the testes per kilo of body weight in healthy adult pigeons was 4.643 grams, but in those receiving a diet from which accessory food factors were absent it was only 0.4015 gram. In the same animals the average weight of the adrenal bodies was 100.3 mg. and 139.5 mg. respectively. The atrophy of the central nervous system was slight. This, as is well known, is what occurs in inanition. McCarrison finds that in inanition there is also hypertrophy of the adrenals, but atrophy of other organs, the brain excepted. The change in the adrenal bodies seems to be a true hypertrophy, as there is a proportional increase in the adrenalin content.

There are other points in McCarrison's conclusions from his experiments which will appeal to thoughtful members of the profession, especially those who take an interest in the nutrition of children; his observation that deficiency of certain accessory food factors opens the door to infections and parasitic agents may prove of far-reaching importance.

¹ From *Surgery, Gynecology, and Obstetrics*, vol. xxv, p. 294.

THE INDIAN MEDICAL SERVICE.

THE history of the Indian Medical Service in the last twenty years has been one of decline from the position of the finest and most attractive medical service under the Crown to a state of things which drove its ablest and keenest members to despair of its future and to advise young medical men not to enter it. There were many causes, but the root cause was the failure of those responsible for the good government of India to understand the importance to it of a medical service enjoying conditions which would attract men highly skilled in clinical and experimental medicine to enter it and make them contented during their service. The British Medical Association, which has always taken a deep interest in the welfare of the Indian Medical Service, shortly before the war took up the matter again strenuously and presented memorandums pointing out the causes of the unpopularity and unhappiness of the service, and suggesting remedies. It found in Mr. Austen Chamberlain, then Secretary of State for India, a statesman who had always shown a wise understanding of the importance of medicine to the State, and who gave practical proof of his anxiety to be helped by expert advice. He was succeeded by Mr. Montagu, to whom the representations already made were repeated. His reply to the deputation the Association sent to him last June showed that he himself had come to a very clear opinion as to the nature of the existing defects and as to the remedies necessary. He promised to use his influence and authority with the Indian Council and the Government of India to ensure the early introduction of the necessary reforms. He has amply fulfilled this promise. In the statement he made to the deputation from the Association which waited upon him again last Monday he was able to announce certain very important alterations, which we trust and believe will achieve the object the Association has sought to attain, and which Mr. Montagu has shown is very near to his own heart. As will be seen from the report of the proceedings of the deputation published in the SUPPLEMENT, the Secretary of State for India in Council has sanctioned a substantial increase (33½ per cent.) on the present rates of grade pay on both the military and civil sides of the Indian Medical Service. He promised that, the war having ended, the leave reserve will be increased to the extent necessary to secure adequate leave for the service generally, including ordinary leave and study leave. He expressed his opinion that it was to the interest of the Indian public that the Indian Medical Service should benefit to the fullest extent by the opportunity of private practice, and he assured the deputation that there was not any prospect that the facilities for private practice the service enjoyed in the past will be diminished. The Association had been encouraged to persevere in its efforts for the extension of medical research in India by the foundation of the Indian Research Fund Association, to which the Government of India makes an annual grant of about £37,000. The war necessarily interfered with the plans the Fund had formed for research, but Mr. Montagu said that a special committee had been appointed in India and that he expected its report to be in his hands very shortly. The Association had always held that the relation in which the Director General I.M.S. stands to the Government of India, and the Surgeon-General of a province to the Provincial Government was unsatisfactory. Mr. Montagu, while expressing his concurrence with the views of the Association, was unable to make any definite promise, but he indicated that a solution of the matter would be involved in the reorganization of the Indian Medical Service which is now under investigation. We believe, however, that what has already been done will greatly increase the attractions of the service and conduce to contentment within it. The hearty thanks not only of the Indian Medical Service and of the British Medical Association,

but of the whole medical profession, are due to Mr. Montagu for the time and care he has given to the investigation of the conditions, at home and in India, on which the efficiency and happiness of the Indian Medical Service depend. He has shown a sympathetic understanding of the problem and has sought a solution in the spirit of a statesman who can take a broad view of the necessities of the situation and can act strongly when he is convinced of the necessity and justice of action.

THE POSSIBILITY OF A RECRUDESCENCE OF EPIDEMIC INFLUENZA.

SOME prominence has been given in the press to the recrudescence of influenza in Italy, and on February 12th mention was made of an enhanced prevalence in Huddersfield. The mortality returns of the great towns do not afford any important indications of recrudescence, but mortality figures naturally lag behind incidence rates which are not available for the bulk of the population. An examination of certain incidence records suggests, although the evidence is not quite sufficient to warrant any confident prediction, that a third epidemic may be gathering force. The past history of the disease would lead us to expect that a third wave although not an inevitable is a probable phenomenon. The usual tendency of epidemic diseases, in which pneumonic symptoms are either primary or important secondary phenomena, to develop at or about the periods of seasonal change (illustrated by the old classification of epidemics into vernal and autumnal types) is to be remembered in view of the drastic change of weather conditions we have just experienced. If a new epidemic develops, our predictions as to its severity will depend upon the opinion we hold as to the immunizing value of a previous attack, and the influence of general conditions of health upon resistance. Respecting the former point, no adequate data have yet been published, although some material we have examined suggests that the proportion of those attacked in the autumn epidemic who had fallen victims in the summer was much smaller than to be anticipated as a matter of chance. Similarly the influence of general physique is divergently interpreted: one writer, Fischer,¹ apparently taking it as proved that the most vigorous persons die at the highest rate of influenzal mixed infections, propounds a bacteriological explanation. Those who are responsible for the organization of epidemiological inquiries are fully alive to the possibilities of the situation, and we understand that collective researches upon the influence of previous attacks have already been begun. Much attention has also been directed to the possibility of lessening the attack rate by the use of respirators in view of the alleged success of this method in cutting short an attack in an American city and on American transports. A comparison of the mortality curves of cities with and without a widespread utilization of respirators does not bear out the high claims made on behalf of this method of prophylaxis. The present state of knowledge offers no immediate hope of introducing any simple measure of effective prophylaxis, and attention must continue to be given to the ordinary rules of general hygiene. It is, however, gratifying to know that the problem of influenza is now being handled upon sound epidemiological lines and that researches which the pressure of war work and other obstacles had impeded are now in progress. Epidemiological advances are not secured by "stunts," but through the harmonious and steady co-operation of various types of mind.

THE FUTURE OF WESTMINSTER HOSPITAL.

THE proposal for the amalgamation of Westminster Hospital with King's College Hospital, to which we referred at length six months ago, is coming up again,

¹ *Munch. med. Woch.*, 1918, lxx, 1281.

and the matter is, we understand, to be discussed and probably decided at a meeting of the Board of Governors of the Westminster Hospital on Tuesday next. The meeting has been summoned at the request of the medical staff, and we hope that the governors will come to a wise decision. The decision to remove Westminster Hospital from its present site is approved by both sides; difference of opinion arises when it comes to the question of the future place of work. The plan originally suggested by the late chairman, Sir John Wolfe Barrie, was to build a hospital of 308 beds on the verge of Clapham Common. A hospital of this size is neither economical for a general hospital nor adequate for the needs of a medical school. The supporters of the scheme have had to admit that in view of the increased cost of building, the erection and equipment of a hospital there would absorb not only the whole of the money resulting from the sale of the present site, but also the whole of the available capital. It was estimated before the war that the maintenance of a hospital at Clapham would involve an additional annual expenditure of £8,500 over and above the present expenditure of £25,000 a year, and it is certain that this estimate for maintenance must now be very greatly increased. Further, it is to be remembered that it is more than doubtful whether any large proportion of the present income from subscribers in the Westminster district would be continued. This is the financial aspect of the matter; but there is another of even greater importance, upon which a medical journal may properly express an opinion. If the hospital is removed to Clapham we foresee that it will cease to be a medical school, for there will not be means available to make provision for the special departments essential for teaching in addition to the provision for general medicine and surgery. The association of a school with a hospital is good for both; physicians and surgeons of teaching rank are attracted to it and are kept on their mettle, and thus the patients benefit and the public are the gainers directly and indirectly. The proposal of the medical staff is that the Westminster Hospital should be amalgamated with King's College Hospital at Denmark Hill; that hospital possesses 565 beds, but its financial position is such that it is unable to keep more than a small proportion of them open. We believe, in fact, that more than two-thirds are closed. If the amalgamation takes place, instead of a struggling general hospital at Clapham, which could never be a complete teaching hospital, the vacant beds at King's College Hospital could be immediately put into working order with adequate financial resources, and the number could easily be increased to 600 or 700 by completing the present building. The chairman of King's College Hospital has stated that it is ready for such an amalgamation, the medical staff of Westminster Hospital is absolutely unanimous in its favour, and King Edward's Hospital Fund for London has stated definitely that it is prepared to consider on its merits any scheme, whether for amalgamation or for an independent hospital, which is approved by the governors. The whole subject of medical education is now under review. The public now understands better than ever before that it is essential to the welfare of the community that medical education in this country should be of the very highest type. London has been slow in realizing we are in a new era; one of the defects of the system has been the diffusion of energy over many of the teaching hospitals. There now occurs an opportunity for an amalgamation which will appeal to supporters of hospitals as a means of financial economy, and to the medical profession and medical teachers as a means of economy in energy and equipment. The responsibility which rests upon the governors of the Westminster Hospital is for all these reasons great, and we venture to hope that they will be guided by the advice of their medical staff to a wise decision.

THE IDEA OF A PROFESSOR.

SIR WILMOT HERRINGHAM has been induced to give his views on medical education in the *St. Bartholomew's Hospital Journal*,* and they are as wise and as piquantly expressed as those familiar with his thought and style will expect. He starts with the proposition that though we in this country have retained to the full our powers of clinical observation and have made notable contributions to neurology, pediatrics, and the study of cardiac diseases, we have not kept pace with other countries in the experimental side of pathology. He asserts, on the one hand, that English physicians have not only treated their own patients with judgement and skill, but have been conscientious in their teaching and successful in infusing these qualities into their students, so that it might almost be said that their lack of the experimental method had been a source of safety. But, on the other hand, he laments that there has thus been fostered a spirit of content with a hand-to-mouth existence, of content to forego that keen desire for discovery which is the soul of science, "even to belittle the laboratory as the regimental officer in his moment of discontent belittles the staff." The growth of physiology, pharmacology, and pathology, he points out, has demanded the expenditure of so much money that none has been left for the scientific needs of the final subjects. The necessary money, let us observe, can only come from Parliament, and there seems now fairly good reason to hope that the Board of Education is able and willing to give the financial help which is necessary if the conception of a hospital unit, in which a professor has assistants, wards, out-patient department, and laboratory properly equipped and officered, is to be realized. The main object of the appointment of a professor, we are told, is that he should devote himself, not to the making of a livelihood by practice, but to teaching and discovery. Sir Wilmot Herringham, while believing that the professor's influence will be felt in several directions, has a clear view of the inevitable limitations of that august official. He does not expect him to give his students the result of a large clinical experience; that must be supplied by the present medical staff of the hospital. Nor would he be able to train students in accurate observation and record of clinical cases any better than they are now, for the staff of a general hospital school has brought teaching to as near perfection in this respect as it is ever likely to reach; this function should continue unimpaired. Four things are to be expected of the professor: first, that by a wide knowledge of science in general and of medical science in particular, he shall be able to throw new light even upon common problems; secondly, that being actively engaged with his assistants in discovery he shall be able to infuse into his students not only the spirit of criticism—that, Sir Wilmot Herringham observes, he can do himself—but the hopeful spirit of inquiry for which contact with discovery at first hand is almost essential. Thirdly, he must not only be a discoverer himself, but should possess the rare gift of inspiring such work in others. Fourthly, he ought, by the quality of his work and by the quantity which, under his guidance, his unit will be able to turn out, to be able to advance medical science in general, and to recover for England that place in it which she has lost. So much for the rosy side; but, Sir Wilmot Herringham continues, "it must not be forgotten that the professor of medicine will not be omniscient. He will not know as much chemistry or physics or bacteriology as the special teachers of those subjects. He will, like the rest of us, be better acquainted with some parts even of medicine than with others. The better man he is the more ready will he be to acknowledge this, and to ask help from his colleagues. He will give, but he will indubitably receive." Finally, we are reminded that it will be difficult in the first place to find a man capable of doing the work a professor ought to do, and in the second to

guarantee that he will do it. There are, the essayist shrewdly observes, professors of various subjects in various places, "with no original fitness for the position, and others who, though originally brilliant, have subsided into useless drones." The only precaution he can suggest is a terminable tenure of the appointment. "But," he goes on, "the chief guarantee will always be the character of the man himself, and that is generally ascertainable upon inquiry. At forty a man usually has enough enemies to enable one to obtain a good idea of his vices, and his virtues he can tell for himself."

READING, SEEING, AND DOING.

EDUCATION, like some nebulae, seems to have a spiral movement. Opinion goes off on a wide curve and then bends round again till it comes back almost, but not quite, to the point from which it started. The old idea of education was to teach a child to understand the meaning of things and how they worked; then in this and other countries there came, through the art of reading, a glimpse into a wider world, and presently reading became not merely a useful instrument and a recreation, but, as it were, an end in itself. The higher branches of industry have emancipated themselves from this worship of the means and forgetfulness of the end. The boy, and the girl too, had to be broken of the belief that reading was anything more than a time-saving tool, and, as they are too old to be apprenticed, they are sent after school years to a technical college, there to be taught on sample benches how to work sample machines. This may be the better way; who shall say? But in the elementary schools reading maintained its supremacy, and one good thing about the Education Act of last year was that it provided for "including in the curriculum of public elementary schools at appropriate stages, practical instruction suitable to the ages, abilities, and requirements of the children." The children were to attend technical classes on leaving school, and were to be encouraged to acquire a certain amount of technical language, and knowledge of materials and appliances. It was therefore proposed that during the later part of their school life they should be trained in preliminary technical observations on the school premises. The Royal Sanitary Institute has been giving its attention to these injunctions, and its interpretation of the official sesquipedalianism is instructive, and also a little amusing. What the Institute proposes is that a class of thirty children shall sit round six tables of models, in patrols of five, each with a leader. The patrol leader is to ask the instructor questions, and to pass the information on to the other four. After a quarter of an hour the first patrol goes off to apply the knowledge gained from the models to the basin tap and plug, the drinking-water tap, the main tap, the ball-cock, the gas tap, and so on, even including the mystery of the washer. Then the children of this patrol come back to the classroom "to verify their observations and to talk them over." The next patrol investigates locks, fastenings, and hinges; another the drainage; and yet another natural and artificial lighting, including the physical properties of coloured glass and ribbed glass, and the meaning of gas-burners and electric switches. The instructor is told to imbue the patrol leaders with the idea that they must encourage the dull to understand and hunt for the appliances, because the quick need less help. Here, indeed, is the whole theory of education in a nutshell. Some of us may well lament that we did not form at an early age a part of a patrol, so that we might understand the mysteries of waste preventers and fuses and by-passes, and, more especially, the method of reading the meter, which might have saved us much money. The method is that of Mr. Squeers improved and extended. You learn how to spell "clean the window," and then by cleaning the window, learn the difference between words and deeds. Seriously, the plan

is good, but this particular scheme is mainly applicable to town children. The method has been applied in a timorous way in country schools, and in them is capable of great extension.

GRADUATE STUDY IN LONDON.

THE emergency post-graduate course, which has been arranged in London by the Fellowship of Medicine for the benefit of medical officers of the navy, the R.A.M.C., the Royal Air Force, and from the Dominions, the United States, and allied countries, is gradually taking shape. The majority of the teaching schools in the metropolis, including St. Bartholomew's, Guy's, St. George's, London, Middlesex, St. Thomas's, and Westminster, have agreed to admit such post-graduate students to their ordinary teaching routine, including clinical instruction in the wards and out-patient departments, and lectures, demonstrations, and laboratory work. In some cases special courses, which are only for these officers, have been arranged. At the National Hospital for the Paralyzed and Epileptic such a course began on February 10th, and at the West London Post-Graduate College, Hammer-smith, a special reconstruction course in general medicine and surgery and in special subjects, to last eight weeks, will begin on February 17th. A special two months' course was started at King's College Hospital at the beginning of February, and two short courses are to be taken in March and in May at the Royal Free Hospital (Medical School for Women). If sufficient entrants are forthcoming, special lectures will also be arranged at the National Hospital for Diseases of the Heart, and special classes at the Prince of Wales's General Hospital (North-East London Post-Graduate College). The officer who undertakes the course offered by the Fellowship is in no way restricted as to facilities; he can interweave the courses, either routine or special, at different schools if he wishes. The Fellowship is the child and also the guest of the Royal Society of Medicine, at whose house, 1, Wimpole Street, it has its office. The course is for three months, but one or two months can be taken, and the fee is at the rate of £3 10s. for each month. Various deans are ready on application to put the officers in the way of studying the subject that may be most helpful to them.

SIR ARBUTHNOT LANE, the senior surgeon, and Sir W. Hale White, the senior physician, have just retired from the active staff of Guy's Hospital, and have been appointed to the consulting staff. The age rule, under which both would have already retired, has been in abeyance during the war, owing to the acceptance by the hospital authorities in each case of an offer of extended services on the active staff.

Medical Notes in Parliament.

THE serious business of the new Parliament opened on Tuesday with the King's speech, which was of unusual length. The first paragraphs affirmed that the terms of the armistice have been perseveringly enforced, and that by the occupation of the bridge-heads across the Rhine the road into Germany was laid open should she attempt to renew the war. In order to reap the full fruits of victory, and to safeguard the peace of the world, it would be necessary to maintain an adequate army in the field, and proposals necessary to secure the forces required are to be submitted. After a reference to the Peace Conference, and to the visit of the President of the United States to this country, the King paid a tribute to the inspiring sacrifice and invaluable service rendered by the peoples of the Dominions and of India during the war.

After an ominous intimation to the Commons that they would be asked to make further provision for meeting the permanent charges resulting from the war, and the new expenditure required for purposes of reconstruction, the speech went on:

The aspirations for a better social order which have been quickened in the hearts of my people by the experience of the

war must be encouraged by prompt and comprehensive action. Before the war poverty, unemployment, inadequate housing, and many remediable ills existed in our land, and these ills were aggravated by disunion. But since the outbreak of war every party and every class have worked and fought together for a great ideal. In the pursuit of this common aim they have shown a spirit of unity and self-sacrifice which has exalted the nation, and has enabled it to play its full part in the winning of victory. The ravages of war and the wastage of war have not yet, however, been repaired. If we are to repair these losses and to build a better Britain we must continue to manifest the same spirit. We must stop at no sacrifice of interest or prejudice to stamp out unmerited poverty, to diminish unemployment and mitigate its sufferings, to provide decent homes, to improve the nation's health, and to raise the standard of well-being throughout the community. We shall not achieve this end by undue tenderness towards acknowledged abuses, and it must necessarily be retarded by violence, or even by disturbance. We shall succeed only by patient and untiring resolution in carrying through the legislation and the administrative action which are required. It is that resolute action which I now ask you to support.

You will be asked to approve a bill for the creation of a new Ministry to deal with public health, with a view to the establishment throughout the land of a scientific and enlightened health organization to combat disease and to conserve the vigour of the race; also a bill to establish a Ministry of Ways and Communications, with a view to increasing and developing the industrial and agricultural resources of the country by improved means of transport.

You will be asked to consider measures for effecting a speedy increase on a large scale in the housing accommodation of the country, for the fulfilment of the pledges given to trade unions, for the prevention of unfair competition by the sale of imported goods below their selling price in their country of origin, and for increasing industrial and agricultural output, without which a considerable and permanent betterment in the national condition cannot be effected. Proposals will also be laid before you for encouraging settlement on the land, particularly by those who have been in the fighting forces of the Crown, for providing suitable men with the necessary agricultural training and for enabling them to stock and equip their holdings, and for the reclamation of land and the promotion of a comprehensive scheme of afforestation.

Finally, I commend to your earnest consideration the industrial problems of the time. That the gifts of leisure and prosperity may be more generally shared throughout the community is my ardent desire. It is your duty, while firmly maintaining security for property and person, to spare no effort in healing the causes of the existing unrest, and I earnestly appeal to you to do all that in you lies to revive and foster a happier and more harmonious spirit in our national industrial life.

At the beginning of business the President of the Local Government Board, Dr. Addison, introduced a bill to establish a Ministry of Health and Board of Health in England and Wales and in Scotland respectively to exercise powers in respect of health and local government.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON COMMANDER J. A. KEOGH, R.N.

Surgeon Commander John Ambrose Keogh, R.N., died at the Royal Naval Hospital, Chatham, on February 5th, aged 55. He was educated at Queen's College, Cork, and graduated as B.A. of the Royal University, Ireland, in 1885, and as M.B., M.Ch., and M.A.O. in 1886, after which he entered the navy as surgeon. He attained the rank of fleet surgeon on February 21st, 1906. At the beginning of the war he was stationed at the Bermuda Naval Hospital.

SURGEON LIEUTENANT W. P. COWPER, R.N.

Surgeon Lieutenant William Pearson Cowper, R.N. (temporary), died on February 1st of illness contracted during the battle of Jutland, nearly three years ago. He was the son of Mr. W. Cowper of Hendon, and was educated at Edinburgh, taking the Scottish triple qualification in 1903. After filling the posts of house-surgeon and house-physician at Hampstead General Hospital, of house-surgeon and anaesthetist at the Royal Westminster Ophthalmic Hospital, and of house-physician of the West End Hospital for Nervous Diseases, he went into practice in London. He took a temporary commission as surgeon in the navy soon after the war began.

ARMY.

Died on Service.

CAPTAIN R. AITKEN, R.A.M.C.(S.R.).

Captain Robert Aitken, R.A.M.C.(S.R.), was reported as having died on service in the casualty list published on February 5th. After graduating M.B. and Ch.B. in the University of Glasgow, he took a commission as lieutenant in the Special Reserve of the R.A.M.C. on August 9th, 1917, and was promoted captain a year later.

CAPTAIN A. G. S. LOGIE, R.A.M.C.(T.F.).

Captain Alexander Graham Spiers Logie, R.A.M.C.(T.F.), died of pneumonia at the 1st Northern General Hospital, Newcastle-on-Tyne, on February 1st, aged 53. He was educated at Edinburgh University, where he graduated M.B. and C.M. in 1887, and before the war was in practice at Raglan, Newport, Monmouth, where he was medical officer and public vaccinator of the Raglan District of Monmouth Union. He took a commission as captain in the R.A.M.C.(T.F.), in the South-Eastern Mounted Brigade Field Ambulance on October 19th, 1915, and was transferred to the Highland Mounted Brigade Field Ambulance on December 3rd, 1915. He was the fourth son of the late Rev. Dr. Logie, minister of Dirlerton, East Lothian.

Repatriated.

Captain N. K. Bal, I.M.S.

Captain R. M. Coalbank, R.A.M.C. (temporary).

Captain F. Dallimore, M.C., R.A.M.C. (temporary).

Captain N. A. A. Hughes, R.A.M.C. (temporary).

Captain L. Murphy, R.A.M.C.

Captain P. E. O'Donoghue, I.M.D.

Captain J. Startin, R.A.M.C.

Lieutenant G. V. W. Anderson, R.A.M.C.(S.R.).

Assistant Surgeon F. Aquino, I.M.D.

Assistant Surgeon E. Duckworth, I.M.D.

Assistant Surgeon H. N. Stewart, I.M.D.

Assistant Surgeon H. A. T. Wells, I.M.D.

HONOURS.

THE following is a continuation of the list published in our last issue of awards to medical officers in recognition of their "conspicuous gallantry and devotion to duty" in the field:

Military Cross.

Captain Hugh Wansey Bayly, R.A.M.C.(T.F.), attached 293rd (London) Brigade, R.F.A.

On September 16th, 1918, at Sandemont, when the village was heavily bombarded in spite of the fact that he himself was ill, he remained at his post dressing and attending to the wounded, and throughout a trying period he displayed admirable composure and disregard of danger.

Temporary Captain (acting Major) James Biggam, R.A.M.O., D.A.D.M.S., 3rd Cavalry Division.

On the night of October 3rd-4th, 1918, he carried important messages to advanced collecting posts at Joncourt, the road being under heavy machine-gun fire and bombing from aircraft. On the night of October 9th-10th, he carried out an exhaustive reconnaissance of roads and villages under heavy shell fire. His untiring energy was worthy of great praise.

Lieutenant George Edmondson Birkett, R.A.M.C.(S.R.), attached 1st Battalion, Gloucester Regiment.

Throughout September 15th and 16th, 1918, during operations south of Maissemy, he worked under heavy shell and machine-gun fire and brought in several wounded men. The enemy shot down many stretcher-bearers and stretcher parties on the 16th, but this officer worked indefatigably and continued to search for and bring in wounded until he was wounded in the spine by a sniper on the 16th. By his personal courage and energy he undoubtedly saved many valuable lives.

Temporary Captain Daniel Michael Boohan, R.A.M.C. (Salonica).

During the attack on the "P" Ridge on September 18th, 1918, having established an aid post and dressed a very large number of casualties, he moved forward with stretcher-bearers in front of the line and brought in wounded from the most exposed positions under trench-mortar and machine-gun fire. He worked continuously from dawn to dark, regardless of personal danger.

Captain (now Major) John Alfred Briggs, 10th Field Ambulance, C.A.M.C.

During the fighting east of Arras, August 26th-28th, 1918, this officer worked continuously. On many occasions he led his stretcher-bearers forward close up to the front line under heavy shell and machine-gun fire, to dress and evacuate wounded. Although blown up and bruised by a shell he refused to leave, and remained on duty. He set a fine example of gallantry and devotion to duty.

Captain (acting Major) Hector Mackay Calder, D.S.O., R.A.M.C.(T.F.), D.A.D.M.S., 47th Division.

For conspicuous courage during operations between August 22nd and September 8th, 1918, in the region of Happy Valley, north of Bruy, and at Moislains. He did most valuable work evacuating wounded under most strenuous conditions, and during the many periods of heavy shelling his untiring zeal was a powerful stimulus to all ranks.

Temporary Captain Graham Wilson Christie, R.A.M.C., attached 12th Battalion, East Surrey Regiment.

During operations on October 1st and 2nd, 1918, near Gheluwe, he dressed the casualties of the advanced guard, under heavy shelling and machine-gun fire. During thirty-six hours he evacuated over 200 wounded from different units, working continuously without rest. His skill and quickness undoubtedly saved lives.

Captain Lewis Piers Churchill, No. 8 Field Ambulance, C.A.M.C.

During the fighting east of Arras, August 26th to 28th, 1918, he was continuously on duty under heavy shell fire, and had absolutely no relief during the whole period. He kept in touch with all his regimental aid posts, and was responsible for the rapid evacuation of his wounded from the forward line. His zeal and devotion to duty were admirable.

Temporary Captain Ailwyn Herbert Clarke, R.A.M.C., attached 7th Dragoon Guards.

On October 10th, 1918, when about two miles north-west of Le Cateau, he several times proceeded under heavy shelling to the sunken road south-east of Rambourlieux Farm to attend to wounded. He succeeded in dressing all the wounded under heavy fire, and got them carried away to safety.

Captain Herbert Augustus Cochrane, C.A.M.C., attached 13th Battalion Canadian Infantry, Quebec Regiment.

On September 2nd, 1918, when the battalion attacked the Drocourt-Queant line, although wounded two days previously, he remained at duty, and established a dressing station well forward before zero hour. Shortly after the start of the attack he dressed several cases under heavy barrage and continued forward, dressing many wounded in the open under machine-gun fire. He worked all day, continually exposing himself, and his gallant conduct undoubtedly saved a great deal of suffering.

Captain Frederick Brecken Day, C.A.M.C., attached 54th Canadian Infantry.

On September 2nd, 1918, near Arras, for marked gallantry and devotion to duty. During the course of the battle he made many trips under heavy machine-gun fire to dress wounded, and afterwards dressed wounded for hours in his aid post, not only those of his own battalion but also of at least five other battalions and many wounded of the enemy. It was without doubt due to his exertions that the wounded were cleared so quickly and many lives were saved thereby.

Temporary Lieutenant Christopher Dean, R.A.M.C., attached 1st Battalion, West Yorks Regiment.

At Holnon, during the operations of September 17th and 19th, 1918, although suffering from a sprained ankle, he was untiring in his efforts to collect and attend wounded. He was constantly exposed to shell fire, but took no notice for himself, though he made his stretcher-bearers take cover.

Temporary Captain Frederick Robert Dougan, 36th Field Ambulance, R.A.M.C.

On August 26th, 1918, near Mametz, when this officer was clearing an infantry brigade, the Sussex Regiment was held up in a valley, the only exit from which was in full view of the enemy. Throughout the day this officer repeatedly brought up squads of bearers and superintended the removal of the wounded under continued heavy fire. Had it not been for his personal courage the wounded of the battalion could not have been cleared for many hours. On another occasion he personally led a single squad under heavy fire in order to bring in a wounded non-commissioned officer of his own bearer division.

Temporary Captain John Melville Elliot, M.B., R.A.M.C. (Salonica.)

Under heavy fire when in charge of stretcher-bearers on September 18th-19th, 1918, he took squads backwards and forwards from advanced dressing station to regimental aid post near Sugar Loaf through heavy barrages. He also assisted in dressing wounded for forty-eight hours unceasingly in a constantly-shelled camp. It was mainly due to his initiative and disregard of personal danger that touch was kept with regimental medical officers under very trying circumstances.

Temporary Captain Alexander Keith Forbes, R.A.M.C., attached 1st Battalion Coldstream Guards.

East of the Canal du Nord, on September 27th, 1918, soon after zero, he established the regimental aid post in the canal, having to cross a stretch of ground swept by machine-gun fire. From this well-chosen forward post he was able to dress all the wounded of his own and other units, undoubtedly saving many lives. He went out many times into the shell-swept area and brought in wounded.

Captain Norman McLeod Halkett, C.A.M.C., attached 38th Battalion Canadian Infantry, East Ontario Regiment.

During operations against the Drocourt-Queant line near Dury between September 1st and 3rd, 1918, near Vis-en-Artois, the area in which the regimental aid post was located was persistently searched by enemy artillery, causing many casualties. He attended to the wounded in the open in spite of heavy shelling. Later, the regimental aid post was established in an open trench, and he again carried on under severe shell fire with untiring energy and utter disregard for his own personal safety.

Captain John Claude Moseley Harper, 7th Field Ambulance, A.A.M.C., attached 28th Battalion, A.I.F.

During the operations on the Somme River and East of Mont St. Quentin on August 29th and September 2nd, 1918, he displayed the greatest gallantry and coolness in attending the wounded, although he was under heavy shell and machine-gun fire the whole time. His untiring energy and splendid example, and his personal supervision of the evacuation of the wounded yielded excellent results, in spite of most trying conditions.

Temporary Lieutenant Benjamin Hitchenson, R.A.M.C., attached 2nd Battalion, Seaforth Highlanders.

During the operations east of Arras on August 30th, 1918, he displayed conspicuous gallantry and devotion to duty, working in the open under heavy machine-gun and artillery fire attending to the wounded with an unselfish disregard of danger that was a splendid example to all.

Captain Frederic Hobart James, A.A.M.C., attached 56th Battalion Australian Infantry.

During the attack on Peronne on September 1st-3rd, 1918, this officer was conspicuous for his gallantry and devotion to duty, working unceasingly under heavy fire and practically without sleep during the whole period, attending to a large number of wounded. His energy and untiring self-sacrifice were worthy of the highest praise.

Temporary Captain Henry Michael Joseph, R.A.M.C., attached 9th Battalion, Essex Regiment.

During operations August 8th-10th, 1918, near Morancourt, this medical officer displayed great courage and energy in dealing with the wounded. On August 10th, 1918, he moved forward immediately behind the fighting troops and saved many lives by timely action. When the objective was gained, and battle patrols went out, the enemy's machine-gun fire was especially heavy; he nevertheless went forward and dealt with cases, carrying one badly wounded man to a place of safety on his back under fire.

(To be continued.)

England and Wales.

PROFESSOR BOSTOCK HILL.

DR. A. BOSTOCK HILL has retired from the posts of medical officer of health and public analyst for the county of Warwick, after forty-two years' service in the latter appointment. The Warwickshire County Council, in accepting with regret his resignation, has placed on record its appreciation of the extremely able manner in which he has discharged all his duties, and has appointed him consulting county medical officer of health. Alderman Evans, in the course of a tribute to Dr. Hill's work as county analyst, said that not one of the vast number of analyses he had made had ever been called in question. Dr. Bostock Hill, who is professor of hygiene in the University of Birmingham, and a valued member of the Ministry of Health Committee of the British Medical Association, founded the "Warwickshire system" of public health organization. Sixteen years ago he instituted the appointment of lady health visitors, and obtained official recognition of these appointments throughout the county. His father, Dr. Alfred Hill, who is now in his 93rd year, was for many years M.O.H. for Birmingham, and his brother, Dr. Eustace Hill, is M.O.H. for the county of Durham, and professor of hygiene in the University of Durham.

THE MIDWIVES ACT IN LONDON.

The Midwives Act Committee of the London County Council has reported that the average yearly number of cases in which midwives in London had called in doctors to their assistance was approximately 4,000; at an average rate of payment in each case of 30s. the cost to the Council would be £6,000 a year. It was pointed out that the power given to recover the fee from the patient or the person maintaining her, save when there is inability to pay owing to poverty, raised novel considerations, because the liability for payment is incurred not by the patient, but by the midwife in the course of a duty imposed upon her by law. It is not thought that the total amount recoverable under this head will be more than 25 per cent. of the expenditure incurred by the Council. The estimated cost of carrying out the powers and duties of the Council under the Act is £6,500 for the year 1919-20.

Ireland.

ROYAL VICTORIA HOSPITAL, BELFAST.

At the meeting of the board of management of the hospital on February 5th, Major T. Houston, O.B.E., M.D., intimated that the St. John Ambulance Brigade intended to present to the hospital a large amount of equipment for the pathological laboratory and of general hospital necessities for the hospital. These were from the hospital in France where Major Houston had been working. Some of the equipment is now practically unobtainable, and all is of great value at ruling prices. The heartiest thanks of the board were given to the brigade for its timely and valuable gift. Major Houston has charge of the new laboratories in the King Edward VII Memorial block of the hospital, and will know how to make the best use of the material.

Sir William Whitla, M.P., senior physician to the hospital, has tendered his resignation as physician, finding

that as M.P. for the Queen's University of Belfast, he would have to stay much of his time in London. About the middle of the war Sir William had been requested by the board of management, on the recommendation of the medical staff, to continue his services during the war, but he felt that this duty did not now lie upon him, and he desired to devote all his time and energies to his parliamentary duties. The resignation was accepted and his name was placed on the list of consulting physicians.

SALARIES OF POOR LAW MEDICAL OFFICERS.

Drs. McGowan, Thompson, Donnelly, Hegarty, and McIvor have intimated to the Magherafelt Poor Law guardians that they had forwarded the decision of the board at a recent meeting to the Central Committee, which was unable to accept it as a fair or reasonable settlement of their claim, and had instructed them to cease work. This course the medical officers were reluctant to adopt, more especially as at present there was so much illness throughout the union; they had therefore decided to make a final appeal to the guardians to grant them a graded scale as had been done in other unions. The medical officers stated that should the board decline that appeal it was obvious they could not any longer, under existing circumstances, be responsible for the proper discharge of the work, at a rate which would not only give them no remuneration for their labour, but was inadequate to pay their travelling expenses. They would, however, do the best they could for the sick poor in their several districts, and after February 10th, 1919, would attend their dispensaries on the first dispensary day in each week, and renew visiting tickets for attendance at the patients' homes on Tuesday, Wednesday, and Thursday in each week. The communication was marked "read."

Dr. Stephenson, Local Government Board's medical inspector, attended the last meeting of the Limavady board of guardians for the purpose of urging them to come to some settlement with the dispensary medical officers regarding their future salaries. In August last the salaries of the doctors were increased from £110 to £135 a year, but this increase they declined to accept as sufficient. Later, a resolution was adopted to the effect that each dispensary medical officer in the union be given an initial salary of £135 a year from January 1st, with increments of £10 a year after each five years of approved service until a maximum of £175 is reached. The medical officers declined to accept this offer also, and Dr. Lane stated that by direction of the Central Committee they had asked the guardians to fix an initial salary of £200 a year, increasing to a maximum of £300 by increments of £20 a year each fifth year, the scale to be retrospective in regard to existing officers. The amount paid yearly to all the medical officers was £500. Of this £25 15s. came out of the local rate and the remainder from imperial funds. The valuation of the union was £70,000, so that the amount of their salaries chargeable to the local rate was less than one-eleventh of a penny in the £. Dr. Stephenson having asked the guardians to reconsider the matter and meet the doctors, it was decided that the guardians should first reconsider the question themselves and then invite the doctors or their representatives to meet them in order to come to some decision if possible.

Correspondence.

ENDURANCE IN AORTIC INSUFFICIENCY.

SIR,—A patient of mine has suffered with well marked aortic insufficiency for fifteen years to my knowledge, and probably for much longer. Nine years ago, when 70 years of age, he cycled from Bournemouth to Wincanton, a distance of about forty miles, arriving in time for breakfast, spent the day seeing his friends, and cycled back in the evening. He is now in his eightieth year, but last summer he cycled down to Weymouth (thirty miles) against a strong head wind. While staying at Weymouth he spent his time bicycling in that lilly district and bathed in the sea, on one occasion diving to the bottom at a depth of over 20 feet. A few years ago he wanted some good-sized trees in his garden cut down. He hired a man for the job, but did most of the work himself, climbing the trees for the purpose. He cuts his lawn, clips his hedges,

and is fond of rolling a fairly steep path with a rather heavy roller. I have often pointed out to him the unorthodoxy of his proceedings, but he likes to have his own way, and has certainly been happier than if he had been condemned to an invalid life. He is a big, powerfully built man of about 14 stone, and I cannot say that I have ever found any marked ill effects resulting from his activities.—I am, etc.,

Bournemouth, Feb. 4th.

CHARLES D. MUSPRATT.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—I have read with interest an article by Colonel Andrew Fullerton, A.M.S., in your issue of February 1st, on the state of the ureters and their orifices in cases of gunshot wounds of the spine, and would be grateful for space in which to make one or two comments.

In the first place I must protest against Colonel Fullerton ascribing to Dr. Fearnside the description of the sequence of events that takes place in the bladder after gunshot wounds of the spine. This sequence I described fully in a lecture before the Hunterian Society and published (*Lancet*, February 3rd, 1917) more than a year before the review of literature by Dr. Fearnside appeared in *Brain*. A reprint of this lecture was forwarded to Colonel Fullerton on publication, and even a superficial glance at Dr. Fearnside's article would show that he is reviewing the literature and incidentally my lecture. In this sequence of events there is retention of urine followed after a varying period by periodic reflex micturition.

Colonel Fullerton sets out to prove that the valve action of the lower end of the ureter is normal in the paraplegic bladder, and he does this to his satisfaction by inspection of the ureteric orifice and of the efflux coloured with indigo-carmin.

The cases in proof are six in number, all of them cystoscoped within the first few days of the spinal injury. One would hardly expect at this early stage to see very striking cystoscopic changes at the ureteric orifice, although at a later time the majority of the fatal cases show dilatation of the ureters and of the renal pelvis.

But even in Colonel Fullerton's report of his cases the ureteric orifices are not normal. Four out of the six cases (66 per cent.) show changes at the ureteric orifice. Case iv "ureteric orifices perhaps slightly patulous"; Case v "ureteric orifices appeared patulous," and so on. This does not seem a very good proof of the competence of the uretero-vesical orifice. The observations on the efflux coloured with indigo-carmin are not more convincing. In Cases ii, iv, and v (50 per cent.) the efflux was definitely abnormal, and in Case i the chromocystoscopy failed from delay of the excretion of the dye.

The important practical point in all these paraplegic cases is not, however, whether the ureteric orifice is normal or patulous, but how the ascending pyelonephritis, which is eventually fatal in practically all these cases, can be avoided. In February, 1917, I recommended, in order to prevent the combination of catheter infection with recurrent bladder distension, that the catheter should be entirely discarded in these cases and that cystotomy should be done at the earliest possible time.

In my view, and it has been strengthened since by isolated cases so treated, this would prevent the fatal ascending pyelonephritis. This was, however, without effect on Colonel Fullerton and his colleagues in France, and the stream of paraplegics, dying from catheter infection, continued unabated. Lately Major Besley of the American army, basing his recommendation on the sequence of functional changes described in my original lecture, recommended that there should be no local interference at all, and that passive overflow be allowed to continue until the period of active incontinence was established. To this has been added massage of the bladder and of the prostate. This treatment in the hands of American surgeons has apparently been followed by good results—namely, the absence of urinary infection.

I have as yet seen only a few of the later results of this method, which I understand had begun to be practised in the British army, for up to the time the armistice was declared cases were still coming under my care at the King George Hospital, treated by catheter. I trust that the later cases sent home may prove that this method

is efficacious, and that the patient may escape urinary infection, even though it may be at the expense of some renal dilatation.—I am, etc.,

London, W., Feb. 12th.

J. W. THOMSON WALKER.

THE FUTURE OF THE MEDICAL PROFESSION.

SIR.—I am disappointed in not finding any support in the JOURNAL to the article in the SUPPLEMENT of January 18th, 1919, p. 6, on "The future of the medical profession" in relation to State medical service.

Dr. Cooper, as we veterans know, was a leader of the brigade of "Old Contemptibles" who fought for payment for work done. Although he only puts forward two advantages for this system, these, I think, cannot be disputed, and then mentions the only valid objection—that some medical men might make unnecessary visits—but against this it can be asserted that now many insured patients demand unnecessary visits, and this objection he meets by the suggestion of a small charge for the coupons.

I have had little personal experience of the working of the National Insurance Act, as I retired from general practice when it became imminent, and now am doing public health work. I saw it was not equitable and the old objection against contract work perpetuated; there being no provision for consideration on the part of the beneficiary. Therefore it could bring no satisfaction to the profession, as is now shown week by week in the medical press. The dissatisfaction cannot be due to the amount of remuneration, for it is twice the old club rate, with no medicine to supply without extra payment.

The conditions of service are demoralizing, as they encourage malingering, waste, and imposition in the insured classes; and it is to the interest of the panel doctor to be accessory. It is inadequate, inasmuch as the sick pay does little more than pay the house rent.

It is also inconsistent, for the treatment of travellers and temporary residents, consultations, drugs, and appliances are now paid for according to services and material supplied. In spite of the unusual exhibition of financial caution by the Chancellor of the Exchequer during the inception of the National Insurance Act, when he stated the amount required for the payment of services rendered would be so uncertain that it could not be estimated for budget purposes.

Yet I understand that the present scheme has continually exceeded the estimates; that, however, is a small matter, being rendered immune by the gigantic war expenditure.

But national insurance against sickness and invalidity was necessary and beneficent, as was making it compulsory and contributory; but the excellent contributory principle is unfortunately limited to small weekly payments, there being no incentive to the preservation of health, which is largely a matter of personal care and habits. Surely the National Insurance Act needs amendment, when so many departments of medicine are being specialized in the public services, such as tuberculosis, venereal and all other serious infectious diseases, the treatment of mental deficiencies, and the whole period of childhood and motherhood is being provided for by the Maternity and Child Welfare Act. The new Education Act contemplates providing medical supervision and treatment for all school children up to a self-supporting age.

Taking all these things together—and I am not chiefly concerned about the interests of the medical profession—an amendment of the Act is urgently needed, and the principle advocated is payment according to services rendered.—I am, etc.,

Poole, Jan. 28th.

WILLIAM GOSSE.

MEDICAL RESETTLEMENT.

SIR.—Mr. Bishop Harman omitted one salient point when defending the Central Medical War Committee's scheme for demobilization. Men "on service" may be divided into three classes: (a) Those (mainly *à la suite* T.F.) who have never left their own homes, and who have carried on their practices or specialities in addition to their military work; (b) those who have been on home service, but away from their own homes; (c) those who have been on service abroad.

Class (a) have enjoyed the comforts of home life, have

been able to assist in the training of their children (four and a half years' absence of the father from home is a very serious handicap to the child), have kept their own work going, and have earned more money, and probably made themselves more or less "secure" in the various schemes on foot (venereal clinics, for example).

Class (b) are less fortunate. They have probably been able to get leave to visit their homes during any sudden stress (financial crises or family illnesses), and probably in any case once every three to six months.

Class (c) are the unfortunates. They may have had all the risks of active service; they certainly have not been able to get leave oftener than once every four or five months (in many cases not at all in eighteen to twenty-four months), and they have probably been unable to get leave for any sudden domestic crisis (I was myself refused leave for the very serious illness of my wife—rightly, from the military point of view).

If the Committee considers it just to give the same number of points to each of these three classes (other things being equal), I do not—and I am only one of thousands who think alike.

I know, of course, that it is impossible to scheme to please every one, but I should have thought it a very simple matter to add a certain number of points for every six months' service abroad and to subtract, say, six points from those who have served at home in their own areas.

Why should it be necessary to subtract points from the whole-team? Has he not suffered financially and lost a good deal of seniority and perhaps been out of touch with his speciality, or again handicapped by wounds or illness?

I am a whole-timer, and I have to keep my home on little more than one-third of the money I should have if I were back in civil employ. I put this forward to the Central Medical War Committee, and I have been awarded one point. Much as I regret to say it, I think the committee has given very little consideration to the active service member of the profession as compared with that given to the home service member.—I am, etc.,

February 5th.

G.

MEDICAL DEMOBILIZATION.

SIR.—In each battalion an officer is detailed to give sympathetic, thorough, and intelligent information to each officer or man who asks questions on demobilization. As that means is not available for R.A.M.C. officers, may I ask Mr. N. Bishop Harman, who answers very clearly several criticisms in the BRITISH MEDICAL JOURNAL of February 2nd, if he can give any information on the following:

(i) There are dozens of us in middle life who sold our practices and thereafter took a commission. How should they fill up Question 10 in Form M.N.S. (M) 16 ["Have you a medical practice or medical post in civil life to return to?"], and will they get the *plus* marks credited to a man who has a single-handed general practice?

(ii) Will all the men who answer "No" to Question 3 ["Do you desire early demobilization?"] be kept back till those who answer "Yes" are demobilized?

(iii) Can he, or any one else, give us any idea of the number of R.A.M.C. officers required for the army of occupation? The combatants know how many officers and men are required, with age limit, and other conditions; and, as we would like an idea as to when we may expect to be released, it would be appreciated if some one in authority can say how many R.A.M.C. officers (in addition to the regular R.A.M.C. officers) are required for the 900,000 army of occupation, and what age limit, etc., there is to be, and, on the basis of that number, he might be able to indicate to us that all men above a certain age (unless they desired to remain on) could expect to be relieved by an approximate date. That would banish the uncertainty that exists with so many of us.—I am, etc.,

February 6th.

G.P.

. We understand that the answer to (i) is that such medical officers will get the three points allowed to men who have no practice to return to, but not the *plus* marks credited to those who have a single-handed practice. The answer to (ii) is "Yes." We doubt whether any answer can be given to (iii) until the military situation is clearer. The distribution and medical requirements of the army of occupation must depend on circumstances.

HOSPITAL EXPERIENCE FOR JUNIOR R.A.M.C. OFFICERS.

SIR,—It was with the greatest interest and satisfaction that I read your article in the *BRITISH MEDICAL JOURNAL* of February 1st, entitled "Hospital Residents." It is to be hoped that the suggestions contained therein will be brought to the notice of the responsible authorities. Such a system of seconding younger medical officers for work in civil hospitals at home would be of the very greatest assistance to those who, like myself, have served more than four years, and whose clinical experience during that period has been limited to a month or two in a base hospital.

By the arbitrary division of medical officers into those born before or after November, 1888, length of service has been largely discounted for the latter class, and age becomes the primary factor in determining priority of release. Unless therefore some scheme such as that already existing for Australian medical officers can also very soon be arranged for the younger British medical officers, it appears that they must be left in "professional stagnation" for many months to come. Since those under thirty years of age are not to be released, should not every effort be made to enable them during their fifth year of service to relearn that which they have been forgetting during the previous four years?—I am, etc.,

B.E.F., Feb. 7th.

K. J. Y.

LESSONS FROM THE WAR IN HOSPITAL CONSTRUCTION.

SIR,—Like probably most other members of the profession I have read with great pleasure the notice of the clinical meeting of the Association to be held in April. One is thankful to think that at last we are beginning to return to our scientific work at home.

But in your note in the issue of February 8th I saw no notice of one subject that I hoped would have been included. We all know the remarkable work that has been done by the numerous military hospitals at home and abroad, and I feel sure that we should all be interested to learn something more of their building, their equipment, their staffing, and the organization of their scientific work. If it has not already been arranged, would it not be possible to have a lecture and demonstration, illustrated if need be by plans and models? It would be especially useful if the lecturer or demonstrator would have in view the turning to use in civil hospitals of the experience gained in those military hospitals, both as regards their structure and the organization of their scientific work. Not only must there be much to be learned by large and small civil hospitals, but there is a possibility of making use of material that cannot much longer be required.—I am, etc.,

Bradford-on-Avon, Feb. 8th.

CHAS. E. S. FLEMING.

THE TREATMENT OF WOUND SHOCK.

SIR,—In the leading article of the current issue on this subject mention is made of a lying claim to priority by the Germans on behalf of one Kestner, otherwise unknown, implying that the credit belongs to Bayliss, without mentioning that an Italian, Pugliese, made the suggestion (it may have been no more) to use gum arabic dissolved in Ringer's solution for haemorrhage, in 1912, and to that extent has a claim to priority over Bayliss. The original is inaccessible to me, but the German abstract states:

The author recommends, in cases of considerable haemorrhage, in which the blood pressure is low, the pulse rapid and very weak, the intravenous injection of Ringer's solution to which very small quantities of gum arabic have been added.

The Italians already feel that they have several priority grievances against us; let us not add another.—I am, etc.,

Oxford, Feb. 8th.

A. S. LEYTON.

AN International Committee for the restoration of the University of Louvain has been formed. National Committees have been set up in the twenty-four nations which have intimated their approval of the project.

THE Civil Governor of Madrid has issued an order making vaccination and revaccination compulsory owing to the present severe visitation of small-pox.

Obituary.

RICHARD A. REEVE, M.D., LL.D.,

Emeritus Professor of Ophthalmology in the University of Toronto, and Past-President of the British Medical Association.

THE announcement of the death of Dr. Richard A. Reeve, who was President of the British Medical Association at the annual meeting at Toronto in 1906, has been received with deep regret. He was connected with medicine in Toronto throughout the whole of his working life; he held the degrees of B.A. and LL.D. Toronto and M.D. Queen's, and was a Fellow of the American College of Surgeons.

When, in 1872, he was appointed to the Toronto General Hospital he was the first specialist to join the staff. In ophthalmology, otology, rhinology, and laryngology, all of which subjects were at first embraced within his course, he showed himself a careful and conscientious practitioner, possessed of an unusual degree of dexterity and manipulative skill. He never allowed his outlook to be contracted, and his special work was always enhanced by his general proficiency in the whole science and art of medicine.

Dr. Reeve had been professor of ophthalmology in the Toronto School of Medicine, which was affiliated with the the university and virtually her teaching faculty, for some twenty years before the actual amalgamation took place; he then accepted the chair of ophthalmology and otology. He became dean of the faculty in 1896 and held that office when in 1903 the union with the medical faculty of Trinity College was effected. During his period of office also the new medical building and laboratories were erected.

We are indebted to Colonel R. D. Rudolf, C.B.E., C.A.M.C., for the following tribute to his life and character:

The news of the death of Dr. R. A. Reeve of Toronto will have been read everywhere with profound regret. Dr. Reeve seemed so youthful and almost boyish that it was always hard to realize that he had several years ago passed the normal span of life.

He was well known on both sides of the Atlantic, and was a familiar figure at all medical assemblies, where his happy fresh manner always helped to make these meetings a success. Dr. Reeve was a non-smoker and a total abstainer, and besides his constant attendance at purely professional meetings he would regularly be present at all the social parts of such assemblies, often breathing an atmosphere of tobacco smoke, which he loathed, and yet happy and smiling and full of quaint humour, thoroughly enjoying and largely contributing to the general good fellowship.

But while Dr. Reeve was so generally liked and respected, it is to the faculty and graduates in medicine of the University of Toronto that his death comes as a special blow. He was the dean of the faculty for nearly twenty years, and a more hard-working and conscientious dean probably never existed. He was punctilious in his attendance upon all the numerous committee and other meetings at which a dean is supposed to be present, and his happy manner and absolutely fair rulings always made his presence there invaluable. Every member of the faculty will recall many occasions when the atmosphere of the meeting would be surcharged with electricity over some acute question, such as the admission of women to the medical classes or the addition of an extra year to the curriculum, and our dean with his consummate tact would steer the discussion so that it ended amicably. And yet with all his suavity Dr. Reeve could well hold his own, and those at the meeting would usually find that they had reached the conclusion that the dean had meant them to reach. Dr. Reeve resigned the deanship several years ago, but he continued to attend the meetings regularly, and his unique experience was greatly valued.

The greatest visible monument that remains of our late dean is the magnificent Convocation Hall of the university. He was the prime mover in this project and spent endless time and energy in raising the necessary funds for it. But though his university always came first in his thoughts, Dr. Reeve was keenly interested in every question that affected the welfare of the Canadian medical man, and the much good work that he accomplished in raising the standing of his profession throughout the country will live as a memorial of him.

Dr. Reeve was one of the most outstanding ophthalmologists on the American Continent, and, besides holding (until lately) the Chair in Ophthalmology in the University of Toronto, he was a member of all the special societies devoted to that subject. He wrote little, but generations of students will remember his dexterous operating, and bear the impress of his sound teaching. He had an enormous practice, but his hospital patients were as much to him as those who could well pay, and so great was his kindness of heart that often he would take nothing or only a nominal fee when he felt that a greater one could not be well afforded. I do not know at all, but doubt if he amassed much wealth, so great (sometimes almost too great) was his generosity in giving and his sensitiveness in asking for money. He was one of those men who work hard because they love their work and because they want to help their fellow men, and who almost resent the financial aspect of their services. One never heard a word spoken against "Dickie Reeve," as his old pupils loved to call him, and probably it would be right to say that in his death we have lost the most popular and beloved man in the Canadian medical profession.

Nearly two years ago Dr. Reeve suffered a terrible blow in the loss of his wife. They had no children, and were devoted to each other; all the time that he could spare from his work Dr. Reeve spent with her, and he was constantly planning and taking her upon trips in the hopes of improving her slowly failing health.

Dr. Reeve died suddenly, in the midst of his work. He will ere this have been laid to rest; but the memory of his keen, kindly face, and of his honest, upright character, will long remain fresh in the hearts of all those who knew him.

His life was gentle; and the elements
So mix'd in him, that Nature might stand up
And say to all the world, "This was a man."
Julius Caesar, Act V, Sc. v.

WILLIAM BARNETT WARRINGTON, M.D.LOND., F.R.C.P.,
Assistant Physician, Royal Infirmary, Liverpool.

It is with great regret we have to record the untimely death of Dr. Warrington, which took place on February 2nd. He had been attacked by influenza on the previous Wednesday, pneumonia supervened, and in three days he passed away, the end coming rather suddenly.

William Barnett Warrington was born in Liverpool 49 years ago, the son of the late John T. Warrington, J.P. He was educated at Owens College, Manchester, and graduated M.B., Ch.B.Vict. in 1891. In 1893 he obtained the M.B.Lond. with honours in medicine and obstetrics, and graduated M.D. in the following year. He then studied at Leipzig University the subject of which he was destined to become so brilliant an exponent, and acquired a thorough knowledge of German. In 1905 Dr. Warrington became member of the Royal College of Physicians and ten years later was elected a Fellow. When in 1896 he began practice as a physician he was already recognized as an authority on nervous diseases. In the physiological laboratory under Professor Sherrington Dr. Warrington conducted researches on the minute anatomy of nerve cells, which he published in the *Journal of Physiology*. He successively held the posts of assistant-physician to Stanley Hospital, to the Hospital for Consumption and Diseases of the Chest, and physician to the David Lewis Northern Hospital. The last post he relinquished in order to become assistant-physician to the Royal Infirmary. The Medical Faculty of the University had recognized his outstanding merit in appointing him lecturer on neuro-pathology. He was a member of the Liverpool Medical Institution, and in 1913 was a vice-president.

At the outbreak of war Dr. Warrington, as a captain R.A.M.C.(T.F.), soon found scope for indefatigable work on the various nerve lesions and their results among the wounded. It was in these clinical observations Dr. Warrington was most deeply interested, and it is to be hoped his observations will be published in due course as a memorial of his assiduity and critical powers. His outstanding merit as a physician was recognized by his being chosen as one of the examiners in medicine at the University of London.

As a physician Dr. Warrington was in the front rank in all that related to nervous disease. He possessed in an eminent degree the contemplative trend of mind. The

more intricate the problem the more attractive it was to him. He pondered deeply over his cases, and by his sound knowledge and clinical acumen often shed light on what was previously obscure and uncertain. By nature modest and impressed by the enormous gaps in neurological knowledge, Dr. Warrington was ever insistent on this point in the numerous papers he has published, and whenever he spoke at the Medical Institution. He took wide views, and it could never be said that in his study of disease his outlook was cramped. He recognized to the full that we live and move and have our being by our nerves.

The funeral, which was military, took place at the Lady Chapel. Besides his numerous professional brethren, representatives of the University Royal Infirmary, and other bodies with which he had been connected were present to honour the memory of one whose loss is so keenly felt by all classes of the community. Dr. Warrington leaves a widow, a daughter, and two sons still at school.

The Services.

RETENTION OF RANK BY OFFICERS ON THE TERMINATION OF THEIR COMMISSIONS.

MEDICAL practitioners who have held temporary commissions in the R.A.M.C. will observe that under Army Order 376 of 1918 an officer whose service has been satisfactory throughout shall, on the termination of his commission or on relegation to unemployment, be granted "permission to retain the rank" he has held. This retention of rank will take the place of the honorary rank hitherto granted, and will take effect retrospectively to the beginning of the present war. An officer will be given permission to retain rank equivalent to the substantive rank held at the time of the termination of his commission. In this connexion temporary rank in the New Army is the equivalent of substantive rank.

It is understood that in general an officer will be given permission to retain or be granted rank equivalent to the highest acting or temporary rank he may have held, provided he has held that rank for an aggregate minimum period of six months.

Medico-Legal.

A MEDICAL MAN'S FEE.

At the Swindon County Court, on January 15th, before Judge Gwynne James, Dr. H. B. Dismorr, of Wroughton, Wilts, brought an action against E. Bunce to recover the sum of four guineas in respect of professional attendance on defendant's wife. The sum of two guineas had been tendered in settlement of the account. Mr. Crewe Wood, who appeared for the plaintiff, said that Dr. Dismorr was not engaged to attend the defendant's wife at the birth of a child, but it was found later that operation was necessary, and he was hurriedly sent for. He found the woman in a critical state, performed the operation, and attended her on five or six subsequent occasions, until she completely recovered. The case was, we are informed, one of adherent placenta, with severe post-partum hæmorrhage. After evidence had been given by Dr. Dismorr, Mr. Fridham, who appeared for the defendant, asked him what he would have charged had he been booked beforehand. His Honour said this was beside the point; the only question was whether in the special circumstances the fee charged was reasonable. Dr. T. C. Wilson of Swindon, giving evidence, supported the view that plaintiff's fee was very reasonable, and agreed that such cases as the one in question were very rare. For the defence, Dr. Whitley, M.O.H. for Swindon, expressed the opinion that the charge was not reasonable; if the midwife had had difficulty in securing medical attention she could have performed the operation herself. After interrogating this witness as to the operation performed and the seriousness of the case, His Honour, in giving judgement, said he had only to determine whether or not plaintiff charged a reasonable fee. The usual practice was for a doctor to be engaged, and the fee in such circumstances would be less than if there was a special call, because the doctor might have little or nothing to do; but in this case there was no retainer, and the plaintiff was specially called in to a lady who was seriously ill, and undoubtedly he saved her life. He attended altogether on six different occasions, and he charged four guineas. He (the judge) must assume that plaintiff was speaking the truth, and that it was a critical case. That being so, there must be judgement for plaintiff for the amount claimed.

We consider that Dr. Dismorr is to be congratulated on having his professional status and fees upheld in the county court. We understand that the defendant's attitude towards the case was supported by the County Nursing Association on the ground that two guineas was a sufficient fee for any emergency midwifery case, that being the fee payable by local authorities for an operation case under the Midwives Act, 1913.

The judge, however, taking as we think a proper view of the situation as a whole, decided that Dr. Dismorr, not having been engaged beforehand, had a right to charge a higher fee. The medical officer of health, in replying to questions put by the judge, seemed to regard the fee as unreasonable on the ground that no anaesthetic was used and that the medical man was not in the house for more than half an hour. Upon this the judge asked the pertinent question: "Does it not depend a great deal on the seriousness of the operation?"

Universities and Colleges.

LONDON INTERCOLLEGIATE SCHOLARSHIPS BOARD.

SIXTEEN medical entrance scholarships and exhibitions of an aggregate value of about £1,550, tenable in the Faculty of Medical Sciences of University College and King's College, and in the medical schools of Westminster Hospital, King's College Hospital, University College Hospital, the London (Royal Free Hospital) School of Medicine for Women, and the London Hospital, will be offered for competition on July 15th, 1919. Particulars and entry forms may be obtained from the Secretary of the London Intercollegiate Scholarships Board, Mr. S. C. Tanner, M.A., Medical School, King's College Hospital, Denmark Hill, London, S.E.5.

Medical News.

It is announced that Colonel Sir Ronald Ross has been appointed consultant in malaria cases to the Ministry of Pensions. He will advise on these cases in addition to his duties as consultant in malaria to the War Office.

The subject for the Astley Cooper Prize 1916-19 at Guy's Hospital was gunshot wounds of the lungs and pleura. The prize has not been awarded. The essays will remain in the museum of Guy's Hospital unless the authors claim them by letter addressed to Mr. C. H. Fagge, F.R.C.S., honorary secretary of the Astley Cooper Prize Trustees.

At the next quarterly meeting of the Medico-Psychological Association, to be held at 11, Chandos Street, London, W., on Thursday, February 20th, at 2.45 p.m., Lieut.-Colonel E. P. Cathcart, R.A.M.C., professor of physiology in the London Hospital Medical School, will read a paper on psychic secretion.

Mrs. CONNETH RHONDDA has organized a women's watching council to consider measures for strengthening the position of women in regard to the forthcoming Ministry of Health. The members of the council include Lady Barrett, M.D., Mrs. Chalmers Watson, M.D., Dr. Helen Campbell, Dr. Adeline Roberts, and Miss Bunting.

THE Local Government Board has made an order rendering certain additional diseases compulsorily notifiable in England and Wales. A medical practitioner is required to notify each case of pneumonia occurring in his practice when the disease is primary or the result of influenza. A medical practitioner must also notify cases of malaria, dysentery, and trench fever unless he knows that they have been notified in the same district within six months.

At the annual meeting of the American Medical Association, held in June, 1918 a petition was presented to the board of trustees asking that the association should publish a journal to be devoted to nervous and mental diseases on the lines of the *Archives of Internal Medicine* and the *American Journal of Diseases of Children*. At its meeting held in October the board authorized the publication.

THE Royal Society of Medicine has opened its house and library in Wimpole Street on Wednesday evenings after 8.30 to the medical officers of the British army medical services, home and Dominion, and also to those of the American and the Allied forces, for the purpose of meeting the Fellows, primarily for social intercourse. As a stimulus to discussion a very brief and informal talk has been arranged for each evening. On February 19th Dr. Norman Moore, President of the Royal College of Physicians, is to speak on English morbid anatomists, and on the following Wednesday (February 26th) Sir William Osler will give a bio-bibliographical discourse on Sir Thomas Browne and his *Religio Medici*. Addresses have been arranged for March 12th on disease and diagnosis by Dr. Henry Head, F.R.S., and on March 19th on Larrey and war surgery by Mr. W. G. Spencer.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. **EDITOR** of the *BRITISH MEDICAL JOURNAL*, *Aitiology*, *Westrand*, London; telephone, 2631, Gerrard.
 2. **FINANCIAL SECRETARY AND BUSINESS MANAGER** (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2630, Gerrard.
 3. **MEDICAL SECRETARY**, *Medisecra*, *Westrand*, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.
- The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Leamington, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

THE GRAVITY OF GONORRHOEA.

DR. G. D. K. WALDRON (Temporary Captain R.A.M.C.) writes: In the discussions both in the lay press and in the medical journals on the control of venereal disease predominance has almost always been given to syphilis, whilst gonorrhoea, with its distressing complications and sequelae both in man and woman, has been relegated to a secondary position. Although syphilis has been looked upon as a much graver malady than gonorrhoea, most authorities on venereal disease admit that gonorrhoea unless treated by the expert is as difficult or even more difficult of cure than syphilis. Moreover, whereas persons suffering from syphilis can be rendered non-infectious quite quickly, the same cannot be said of those suffering from gonorrhoea. Any practitioner can quickly pick up the modern treatment of syphilis by several visits to the nearest venereal treatment centre, but it is impossible for him to learn to treat gonorrhoea effectually in the same time and manner mainly for the following reasons: (1) There is little or no teaching at medical schools; (2) most works on venereal disease, whilst dealing exhaustively with syphilis, do not so deal with gonorrhoea; (3) the obsolete methods laid down in many quite up-to-date textbooks of surgery must be discarded as incomplete and useless; (4) an intimate knowledge of the histology, anatomy, and clinical pathology of the urethra and its adnexa is essential; (5) long practical experience is necessary for the intelligent performance of the needful manipulations, and much skill and knowledge are essential for the exact and intelligent use of the operating urethroscope, an instrument of the first importance in the treatment of gonorrhoea.

My plea is this: That it be further impressed on the general public that gonorrhoea as well as syphilis is a very grave malady, and extremely difficult to really cure. That governing bodies in appointing medical officers to take charge of venereal clinics should be reasonably sure that the officers in charge of gonorrhoea sections have the knowledge and experience necessary for the undertaking of the treatment of gonorrhoea intelligently and well. And, finally, that venereal clinics shall be supplied with the drugs and instruments essential for the proper treatment of gonorrhoea.

THE JAPANESE FLY-TRAP.

DR. E. K. WILLIAMS (Billesdon, Leicester) writes with reference to the Japanese fly-trap (*BRITISH MEDICAL JOURNAL*, January 5th, 1918, and February 8th, 1919): I brought several home with me from India in 1916. They can be bought from Japan Imports, Ltd., Bank Street, Bombay, India. They cost 8 Rs. apiece.

CAPTAIN R. GRANVILLE WADDY, R.A.M.C.(S.R.), writes on the same subject: While in Egypt I made a note of the maker, and give the details as quoted upon the trap: "Automatic Fly-trap, manufactured by Owari Tokai, Kabushiki-Kaisha, Nagoya, Japan. Sole agent: Takata and Co., Tokio, Shanghai, and Osaka." Where the fly pest is, there should be the automatic trap.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

The Hunterian Oration

ON

BRITISH MILITARY SURGERY IN THE TIME OF HUNTER AND IN THE GREAT WAR.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF
ENGLAND ON FEBRUARY 14TH, THE ANNIVERSARY
OF HUNTER'S BIRTH.

BY

SIR ANTHONY BOWLBY, K.C.M.G., K.C.V.O., C.B.,

MAJOR-GENERAL A.M.S.; CONSULTING SURGEON, BRITISH ARMIES IN
FRANCE; SURGEON IN ORDINARY TO H.M. THE KING.

IN the year 1792 John Hunter finished the last of his works, and dedicated it "To the King."

"May it please your Majesty,

"In the year 1761 I had the honour of being appointed by your Majesty a surgeon on the staff in the expedition against Belleisle.

"In the year 1790 your Majesty honoured me with one of the most important appointments in the Medical Department of the Army, in fulfilling the duties of which every exertion shall be called forth to render me deserving of the trust reposed in me and not unworthy of your Majesty's patronage.

"The first of these appointments gave me extensive opportunities of attending to gunshot wounds, of seeing the errors and defects in that branch of military surgery and of studying to remove them. It drew my attention to inflammation in general, and enabled me to make observations which have formed the basis of the present Treatise. That office which I now hold has afforded me the means of extending my pursuits and of laying this work before the public."

This dedication is dated "Leicester Square, May 20th, 1792," although Guthrie states that "the work was not published until 1794"—that is, the year after Hunter's death; but in spite of the fact that more than thirty years had passed since the period of Hunter's active service before he published his *Treatise*, yet his interest in what he had seen at Belleisle remained so keen, and his description of individual cases is so vivid, that it might easily be supposed he was describing events of very recent occurrence. The whole *Treatise* is quite short, and occupies only fifty-six pages in the octavo edition of 1823.

In the *Roll of Commissioned Officers in the Medical Service of the British Army*, by the late Colonel William Johnston, C.B., published in 1917, Hunter's record reads as follows:

John Hunter, surgical staff, Great Britain, October 30th, 1760. Half pay 1764. Full pay, assistant surgeon-general January 4th, 1786. Surgeon-general and inspector of regimental hospitals March 17th, 1790. Died October, 1793. Belleisle 1761. Portugal 1762.

An interesting fact which is not commonly known is supplied in this brief statement, for it appears that Hunter had acted as "assistant surgeon-general" for four years before his appointment as surgeon-general.

At the time when Hunter went to Belleisle, just two hundred years had passed since Ambroise Paré had published his collected works, and it is not too much to say that military surgery had not advanced materially since his death in 1590. This lack of development was certainly not due to lack of opportunity, for the two hundred years had been years of war, and firearms had quite replaced the arrows and bolts which in Paré's day were still frequent causes of injury, in spite of the then recently invented culverins and arquebuses.

A hundred years later than Paré, the great English surgeon Wiseman had written the most important treatise published since the time of the French master, and in the same year that saw the attack on Belleisle, Ranby, who had attended King George II in his Flanders campaign, published a little book on gunshot wounds. In France the successor of Paré was Le Drau, who in 1740 produced a considerable work on gunshot wounds based largely on Paré, and it would appear that the authors I have here enumerated were the only guides to whom Hunter could have turned for help and counsel when he set out to the wars. It is, however, noteworthy that he does not refer by name in his *Treatise* to any surgical author at all, and that on the other hand he notes: "Little has been written on the subject. . . and what has been written is so superficial that it deserves but little attention." It was indeed left for the following century to provide at its very

commencement the men whose work, expanding and extending that of Hunter, laid the foundations of the military surgery of the nineteenth century, and the names of Larrey in France and Guthrie in England will for ever be associated in this connexion.

HUNTER'S WAR EXPERIENCES.

It is of interest to glance for a moment at the wars of John Hunter's lifetime. Marlborough's campaigns had ended in 1711, before Hunter's birth, after his successful but fruitless attack at Arleux on the French line of trenches which lay across France from Namur to the sea at Montreuil; but Hunter was a youth of 17 years when, in the campaign of 1745, the battle of Fontenoy was fought. From that time until shortly before the attack on Belleisle there was a lull in the fighting, and again, after 1763, there ensued a long period of peace, as far as England was concerned, except for the wars in America and India. It thus happened that the opportunity for further work in military surgery was lacking, and Hunter's careful notes of his cases made in 1761 remained without the additions which further wars would no doubt have provided.

His experience of military surgery in the field was thus limited to the Belleisle and Portuguese expeditions, and a brief description of these little known naval and military operations in which Hunter served will not, I think, be out of place. To Mr. A. D. Cary, the librarian of the War Office, I am much indebted for some of the following details.

BELLEISLE.

The first of these expeditionary forces consisted of about ten thousand troops under the command of General Hodgson, and was escorted by a powerful squadron of eight ships of the line and several frigates under Admiral Keppel. Its object was the capture of the island.

Belleisle is off the coast of Brittany, and is about twelve miles in its greatest length and about five miles in its greatest width. It is surrounded by precipitous cliffs, and forms a natural fortress. The chief town was on the northern edge of the island, and was protected by a citadel, garrisoned by about 4,000 men under the command of the Chevalier de Saint Croix. According to the French historian, this garrison was very insufficient, and

Saint Croix, in order to deceive the British as to its numbers, mounted fifty volunteers on farm horses of the island, his efforts being admirably seconded by the female population. The women asked permission to help in this deception, and formed a squadron clothed in red capes. Those who had no horses mounted cows. (Waddington's *La Guerre de Sept Ans*.)

The first attack took place on April 8th, and after an initial success resulted in the repulse of the British with a loss of about 450 killed, wounded, and prisoners. Of these there were rescued 75 British wounded, and there were also captured 54 wounded Frenchmen. All these appear to have been taken for treatment to the ships. A second attack on April 22nd was successful in occupying the island and driving the defenders into the citadel, where they withstood a siege for nearly two months, and finally surrendered on June 7th.

The French estimate of their own losses was 200 killed and 450 wounded, while Fortescue states that "the losses of the British throughout the whole of the operations were about 700 killed and wounded," and he adds: "Thus was Belleisle secured as a place of refreshment for the fleet." It was restored to France on the conclusion of peace in 1763.

PORTUGUESE EXPEDITION.

After the capture of Belleisle, Hunter remained as one of its garrison for nearly a year, for it was not until the summer of 1762 that the opportunity came for some of the troops to embark on an expedition to Portugal, and there is no doubt that he accompanied this force. The explanation of this event is thus described by Fortescue:

The Spaniards on the pretext of Portuguese friendship with England, in April, 1762, invaded Portugal, overran that country as far as the Douro from the North, and threw another force against Almeida from the East. The injured kingdom appealed to England for help, and in May orders were sent to Belleisle for the departure of four regiments of infantry together with a detachment of the Sixteenth Light Dragoons to Portugal. Two more regiments were added from Ireland, bringing the total up to about 7,000 men. (Fortescue's *History of the British Army*, vol. ii, p. 546.)

The force stood on the defensive to cover Lisbon and the line of the Tagus, but on August 27th Brigadier-General

Burgoyne, with 400 troops and the grenadier company of the Buffs, surprised and annihilated a regiment of Spanish infantry and took Valencia, with very few casualties. On October 4th another attack again took the enemy by surprise and resulted in the capture of six guns and other booty, with great loss to the Spaniards, but at the cost of only one man killed and eight wounded to the British. The results of this expedition are thus summed up in the *Historical Records of the Third Foot (the Buffs)*:

This advantage being obtained at a critical moment was attended with important consequences: the enemy was disheartened; the season for military operations was far advanced, heavy rains fell, the roads were destroyed, and the Spaniards fell back to their own frontiers. Thus Portugal was saved by British valour and British skill.

HUNTER AS AN ARMY SURGEON.

Such, in brief, were the two expeditions in which Hunter saw active service, and it would appear that in Portugal there were very few casualties.

It is probable that in the Belleisle expedition the wounded numbered about 500, although by no means all of them could have been under Hunter's care. It is, however, likely that some of the patients were kept on the island until they had recovered, and so were under treatment for a long time. It is also evident that a certain number of the French wounded were left to the care of the British surgeons, for it was provided by Article XI of the capitulation that "the officers' and soldiers who are in hospital in the town and citadel shall be treated in the same manner as the garrison, and after their recovery shall be furnished with vessels to carry them to France."

The actual position occupied by Hunter during his stay on the island has hitherto been somewhat uncertain. I have, however, been fortunate enough to be supplied by Professor F. Wood-Jones with a letter which shows that Hunter was not merely one of a surgical staff, but was in charge of the hospital, for, in addition to his appointment as "Staff Surgeon," he is described as the "Deputy Purveyor," and in that capacity he was supplied by the Government with money to be spent on the hospitals by himself. The letter, dated April 12th, 1762, was written only a short time before the forces at Belleisle were embarked for Portugal. It is as follows:

Belleisle.
12 April, 1762.

Sir,

The Hospital here being in want of money as appears by a letter sent to me this day by Mr. John Hunter the Deputy Purveyor thereof, a copy of which is hereunto annexed, I have in compliance therewith issued my warrant to you of the same date as this letter for the sum of Two Hundred Pounds payable to the said Mr. John Hunter for the use of the said Hospitals, without deduction, but upon account, and do hereby direct and desire (as the Lords of the Treasury have not issued any money to you for the contingencies of this garrison) that you will pay the same out of the money which you have in your hands for the subsistence of the Troops here.

I am, Sir,

Your most humble servant,

H. A. LAMBART.

To Charles Bembridge, Esq.,
Deputy Paymaster General to
Forces at Belleisle.

An examination I have made of the *Journals of the House of Commons* has disclosed payments as follows:

Dec. 27th, 1761. To John Hunter, Esq., for the use of the Hospitals, £100 os. 0d.

March 10th, 1762. To John Hunter, Esq., for the use of the Hospitals, £100 os. 0d.

Apr. 12, 1762. To John Hunter, Esq., for the use of the Hospitals, £200 os. 0d.

It would thus seem that Hunter was both staff surgeon and the chief administrator of the British hospital at Belleisle. Small though the number of wounded was in those days compared with the tens of thousands of the present day, it is evident that at Belleisle it was sufficiently large to provide Hunter with food for much thought and study. He had no other duty except to care for his soldier patients, no other problems to solve save those of gunshot wounds, and we can picture him on the sea-girt cliffs pondering over the questions which presented themselves to his busy brain, and shaping the newly born thoughts of inflammation suggested by his first experience of war.

It seems to me very possible that we owe more to that period of contemplation on the remote island of Belleisle than has ever yet been guessed, and, as we find Hunter

himself saying of his experience of war thirty years later. "It drew my attention to inflammation in general," we shall not be far wrong if we conclude that the germs of much of his most important later work were brought to life in the quietude which followed the siege and capture of the citadel.

THE MILITARY MEDICAL SERVICES IN THE EIGHTEENTH CENTURY.

At the time of Hunter's appointment as surgeon-general in 1790 the army had but one physician-general and one surgeon-general, who were selected from the ranks of eminent civilian practitioners of the day, and it was the duty of the first to supply physicians to the army, and of the second to examine all candidates for appointments as surgeons. The surgeon-general also recommended surgeons and "surgeons' mates" for appointments to hospitals and regiments.

In peace these duties were not arduous, for the standing army was small; but when in 1793 we were obliged to raise ever-increasing armies for the war in Flanders, it became impossible to provide the necessary surgical staffs. Hunter must have had many anxious hours at a time when his health was failing, for his own death occurred within six months of the declaration of war. I will therefore ask you to consider the condition of the medical services in the eighteenth century, and the difficulties which were inherent in supplying the troops with efficient medical officers.

STATUS OF ARMY SURGEONS.

The Army Medical Service, both before and during Hunter's lifetime, left very much to be desired, and the pay and status were such that they offered no inducement to men of skill or learning.

John Woodall, writing in 1639 in his book *The Surgeon's Mate*, says:

And for the surgeons in his Land service he (the King) alloweth to the Surgeon-Major of the whole camp five shillings a day. Also his Majestie alloweth to each Surgeon two shillings and sixpence a day, which is three pounds and fifteen shillings a month, and to each Mate three pounds a month. . . . And further His Highness hath referred to the ancient Masters and Governors of our Society (i.e., the company of Barber-surgeons) the pressing of all Surgeons and Surgeons' Mates or servants to Surgeons and Barbers.

It is therefore evident that, as the pay was not a sufficient inducement, surgeons were "pressed" or forced, as seamen were forced by press-gangs, to join the service when war called for surgical help.

More than a hundred years later, and consequently after Hunter's experience at Belleisle, the inducements to serve were still not improved, for in 1787, only three years before Hunter's appointment as Surgeon-General, Robert Hamilton wrote:

Each regiment is allowed a Surgeon, as he is termed, and a Surgeon's Mate. Their business is to attend to the diseases of the men at all times whenever it is judged necessary. For this service the surgeon is allowed four shillings a day; the mate three and sixpence. But out of this are levied from them considerable duties; from the surgeon a shilling, and from the mate sixpence a day. This makes their subsistence equal, so that each is limited to a guinea a week, and on this they must subsist as well as they can.

The pay of John Hunter as staff surgeon is uncertain but was probably ten shillings a day, for I find in the *History of the Standing Army, 1660-1700*, by Colonel Walton, that a "Master Surgeon-Staff" had 10s. a day at that period, and the pay probably remained at the same figure in 1761. He was also paid 10s. a day as the deputy purveyor. There is no doubt that Hunter joined the army for the Belleisle expedition chiefly in order to obtain a change of duties and surroundings after illness and overwork in London, and when the war came to an end he returned to his studious life, and started practice in Golden Square at the age of 35.

It is evident that one of the chief causes of inefficiency in the Army Medical Service in the eighteenth century was the custom of employing ignorant and often uneducated men as "surgeons' mates." The mate was the assistant of the surgeon and was usually unqualified, except that he might have been a surgeon's apprentice in civil practice. Some few, it is true, were well educated men who had attended lectures on anatomy, surgery, and medicine, but all of them were only "warrant officers."

and did not hold commissions. So long as there was no war to make demands for an increase of the staff of surgeons, the evil was not very great, but in 1793, on the outbreak of war with France,

an increase of the hospital establishments of the army became necessary, and, the pay of "hospital" mates being higher, many "regimental mates" transferred to the hospitals as "hospital mates." An increase in the number of surgeons led to the promotion of many regimental mates, and many also purchased commissions. (Colonel Johnstone.)

The result of this was, first, that many of the men who now held commissions as surgeons were very ignorant fellows; and second, that the places of the promoted mates were filled by men of low class, most of whom had no surgical knowledge at all, but were yet in control of the treatment of hundreds of men. For example, we read that on one occasion

five hundred invalids were embarked from Arnheim in barges under the care of a single surgeon's mate without sufficient provisions, and without even straw to lie on. (Fortescue, *British Campaigns in Flanders*.)

EFFECTS OF MALADMINISTRATION ON THE HEALTH OF THE ARMY.

But not only was the pay and status of the surgeons bad, the administration of all the army was on a thoroughly unsound footing, for after Marlborough's time its efficiency, or the reverse, depended on the Minister in power in England for the time being. Military history shows that in the campaigns of 1793 and 1794, just when Hunter's work was published, mismanagement and incapacity in the Government had reduced the whole army to a state of inefficiency and chaos. Thus, Fortescue writes:

The men were imperfectly disciplined, there were no efficient company officers to look after them; no efficient colonels to look after the company officers; no generals to look after the colonels. . . . No effort was made to clothe recruits, who received a linen jacket and trousers, and many were sent on active service in this dress, without waistcoat, drawers, or stockings. (P. 372.)

So bad, indeed, was the supply of army clothing that greatcoats were supplied to some regiments by public subscription.

The medical service was such as might be expected when the army as a whole was in this condition, and the state of affairs in July, 1794, is described as follows:

But the very worst department of all was that of the hospitals wherein the abuses were so terrible that men hardly liked to speak of them. . . . Some kind of a medical staff was improvised out of drunken apothecaries, broken-down practitioners, and rogues of every description who were provided under some cheap contract; the charges of respectable members of the profession being deemed exorbitant. . . . "The dreadful mismanagement of the hospitals is beyond description," wrote General Craik. (Fortescue.)

It will be noticed that this explanation of the rotten state of the medical service was the unwillingness to spend the money necessary for efficiency, and it requires but little study to realize that gross maladministration and peculation of public money were at the root of most of the troubles in all departments of the army.

Hunter had been appointed in 1790 to be "Inspector-General of Hospitals and Surgeon-General in the Army," but he had died on October 16th, 1793, before the breakdown I have mentioned above. As far as I can ascertain, however, his authority did not in any case extend overseas, and, even had it done so, it is quite certain that he would have been powerless to check abuses which originated in maladministration of ministers in England, and which resulted ultimately in the armies being so starved of supplies of food and clothing that by November, 1794, there were eleven thousand sick out of a total force of infantry of twenty-one thousand. It is not too much to say that the collapse and defeat of the British forces in Flanders at that time were brought about more by the want of ordinary care for our troops than by anything else. Even the best medical service is powerless when no provision is made for the ordinary necessities of life, especially if the combatant officers are as ignorant and inefficient as were very many at that time.

A MODERN CONTRAST.

In the present war the splendid health of our armies has not been due solely to the work of the medical service during the war, good though that has been. It has also been due to the instruction of the combatant officers before the war in the value of good hygiene and of the proper

care of the men in camps and billets. This, in its turn, has been supported by the abundance and excellence of the supplies of food and clothing which have everywhere followed our troops throughout the campaign in a never-failing stream; while the supervision and supply of drinking water, the precautions taken to destroy flies and to burn refuse, to inspect and cleanse billets, etc., have all contributed to save life and to avoid sickness. The result is that the invaliding rate from preventable disease in the fourth and fifth years of the present war has been no more than the same rate in times of peace, and, while the war in Flanders at the end of Hunter's life failed largely because of the immense loss to the forces caused by the sickness of the whole army, it is not too much to say that in the present war much of the efficiency and fighting power of the British troops has resulted from the good health and the consequent high spirits of all ranks.

The records of many sieges have proved that sick and half-starved men may hold on to a defensive position and fight well to the last, but it is only robust, vigorous, and thoroughly healthy troops who are capable of enduring the immense strain of pressing home for many weeks in rapidly succeeding battles such a strenuous and victorious offensive as that initiated by the British army on the ever-memorable day of August 8th, 1918, and consummated in the armistice of November 11th.

HUNTER'S WRITINGS ON MILITARY SURGERY.

It is very difficult to appreciate properly the value of Hunter's writings on gunshot wounds at the time of their publication, but their interest for surgeons can be better estimated if it is remembered that no one had previously written much about these injuries for many years, and that Hunter's great reputation and his position as Surgeon-General compelled the attention of every one connected with the medical service.

Superstition and ignorance had united to create the belief that there was something about a gunshot wound which rendered it quite unlike any other, and, to use Hunter's own words, "they have been considered apart from other wounds and are now become almost a distinct branch of surgery." He then proceeds to point out that they are essentially "contused wounds"; although they have certain peculiarities due to the passage of foreign bodies into the tissues, and that they should be treated on ordinary common-sense principles.

Hunter was the first clearly to appreciate and teach that in the gunshot wounds of his time "a part of the solids surrounding a wound is deadened . . . and is afterwards thrown off as a slough which prevents such wounds healing by the first intention." He pointed out how the separation of a slough might open a part of a large artery or a portion of intestine. He realized that "the greater the velocity of the bullet the cleaner it wounds the (soft) parts." He noticed that "when the velocity is small the direction of the wound produced by the ball will, in common, not be so straight, therefore its direction not so readily ascertained, arising from the easy turn of the ball."

He taught the much needed lesson of not interfering with any wound unless a definite object was to be gained. He wrote "we must see plainly something to be done for the relief of the patient by this opening (of the wound) which cannot be procured without it," and he was able by his influence and reputation to alter the practice of the routine opening up of every bullet wound regardless of any indication for doing so, which was a universal custom before he challenged it.

His descriptions of peritonitis following intestinal injury, and of infection of a haemothorax caused by a wound of the lung, are masterpieces of observation and perception, and his opinion that a haemothorax might be advantageously treated by emptying the blood from the pleura, coincides with the practice of the present day.

PRIMARY AND SECONDARY AMPUTATIONS.

It is evident that Hunter felt, as all surgeons have felt, the difficulty of deciding the best time for the removal of a hopelessly smashed limb, and it seems also clear that his experience of "primary" amputations, with the primitive methods of that day, had been bad. The consequence was that he advocated delay, more especially when the lower

extremity was concerned, but it is not clear what period of delay he had in his mind, for he does not indicate at all how many days he would wait. Here is his view:

In general, surgeons have not endeavoured to delay it (amputation) till the patient has been housed and put in the way of cure; and therefore it has been a common practice to operate on the field of battle; nothing can be more improper than this practice, for the following reasons: In such a situation it is almost impossible for a surgeon in many instances to make himself sufficiently master of the case, so as to perform so capital an operation with propriety; and it admits of dispute whether, at any time and at any place, amputation should be performed before the first inflammation is over.

Again:

The only thing that can be said in favour of amputation on the field of battle is that the patient may be moved with more ease without a limb than with a shattered one . . . but it may be observed that there will be little occasion to amputate an upper extremity in the field, because there will be less danger in moving such a patient than if the injury had happened to the lower.

There is no doubt that modern surgeons would not agree that obviously necessary amputations should be delayed for several days, and would advocate their performance as soon as the condition of the patient permitted it. But we must remember that in the year 1760 methods of averting hæmorrhage were very primitive, and that severe loss of blood from an operation which followed soon after the primary hæmorrhage due to the injury might well prove fatal, when delay might have lessened the risk.

In 1815 Guthrie published his book on *Gumshot Wounds of the Extremities Requiring the Different Operations of Amputation*, and in it he strongly defended primary amputations, and opposed with excellent reason the advice given by Hunter. In this he was certainly in the right, and largely because his opinions were founded on a very extensive experience. Guthrie, at the time I allude to, was very young in years, for he was only aged 16 when he joined the army in 1801 as assistant surgeon. But the time he had spent in the Peninsular war had been a time of constant fighting, and his talents and skill had quickly earned for him a most responsible position in which he had opportunity for much operative surgery.

I therefore desire to direct attention to the results he quotes in support of his own views and in opposition to the advice of Hunter.

Guthrie's Statistics (Toulouse).

	Total.	Died.	Cured.	Per-centage of deaths
Primary operations on field of battle:				
Upper extremities	7	1	6	19
Lower extremities	40	8	32	
Total primary amputations . . .	47	9	38	
Secondary operations in general hospitals:				
Upper extremities	15	3	12	41
Lower extremities	35	18	18	
Total secondary amputations . . .	51	21	30	

Guthrie supplies the comment—"The medical duties, both in the field on the day of action and in the hospitals afterwards until the final evacuation of Toulouse, were more immediately under my observation and control"—so that it is clear that the figures given above represent the final results.

But I do not quote these figures merely for the purpose of showing that the practice of primary amputation was to be preferred to that of secondary, but to draw attention also to the fact that these results of primary amputation must be considered very good, and to ask how it was that these patients did so well. No doubt one very important reason was that at the end of the Peninsular war surgeons had become very expert in the act of removing a limb, for the amputation rate was exceedingly high, and in the battle of Toulouse itself no fewer than 98 patients lost a limb out of a total of 1,407 wounded, or about one in every fifteen. It must also be remembered that in many patients the injury which justified amputation in those days was not necessarily so severe as to induce a serious condition of shock, for many amputations were done, not so much because of the serious condition of the limb at the moment, as on account of the complications which could, by experience, be foretold. Thus, it was well known that in few

patients with fracture of the femur could life or a useful limb be saved, and all wounds of the knee-joint complicated by any fracture were also treated by amputation. These are conditions for which in the present war we should very rarely advise removal of the limb, unless there were serious complications.

But although Hunter's advice to wait for amputation until "the first inflammation is over" was not accepted by his successors, it must be noted that we do not ourselves advocate operation "on the battlefield," nor should we in these days be satisfied as easily as Guthrie, who says "the military surgeon should never be taught to expect any convenience: his field-pannier for a seat for the patient and a dry piece of ground to spread his dressings and instruments upon are all that are required."

We should further note that Hunter himself advocates removal of a limb at once "if the parts are very much torn so that the limb only hangs by a small connexion," and also that "it may be necessary to perform the operation to get at blood vessels which may be bleeding too freely."

PRIMARY AMPUTATIONS AT THE PRESENT DAY.

In the first place, many surgeons besides myself have always advised that a completely shattered limb should be removed as soon as the patient can be brought into a field ambulance, unless his condition is such as to prohibit any operative treatment at all. There is no doubt in the minds of careful observers that the keeping of such a limb, even for a short time, is most prejudicial to the patient, probably to some extent because of the absorption of toxins from the smashed muscles; as soon as he is rid of it his condition improves. In proportion as shock is severe and the limb is nearly severed, it is not, however, advisable to do at once a formal amputation above the seat of injury, especially if the lower extremity be the one concerned, and it is enough at the moment to sever the remaining tissues with knife or scissors, to tie bleeding vessels, apply a dressing, and then to leave the patient to improve before more is done. This severance of the remaining tissues of the limb requires no anaesthetic, save a small dose of morphine and the tight application of a tourniquet, which causes so much numbness that no pain is felt from the procedure I have advocated. It is especially inadvisable to give chloroform or ether if the conditions require the early evacuation of the patient, or if a formal operation under an anaesthetic is to be shortly performed. A second administration of these anaesthetics after an interval of only a few hours has proved most harmful in such patients, and should certainly be avoided.

In other cases, where the limb is not completely shattered but yet requires removal, it is generally best to splint it carefully, and send the patient to a casualty clearing station, where he can be put to rest in a warm place and be carefully tended till he has recovered from the effects of the journey, has taken plenty of fluid, and has slept. After that, there is generally no object in further delay, but in many cases it is necessary, in order to get the patient into an "operable" condition, to administer fluid of some kind either by the rectum or by intravenous injection. For the latter purpose we have used with good results a 6 per cent. solution of gum arabic, or, if the loss of blood has been excessive, a pint or more of blood has been transfused, and by these means many lives have been saved.

I have already mentioned the inadvisability of two administrations of ether or chloroform, but when a patient is suffering from severe shock or hæmorrhage even a single anaesthetization by either of these is very definitely dangerous, and may be quite enough to turn the scale in the wrong direction and prevent recovery. I believe that in such cases as we are considering it is safer to give no anaesthetic than to give chloroform, and ether is not much better. Far the best method of anaesthesia is the administration of gas and oxygen, and amputations may often be performed when the patient is under the influence of this anaesthetic which could not be done at all without it. I am indeed inclined to believe that the success of Guthrie and his contemporaries in primary amputations would have been diminished if chloroform could have been given, and I am quite convinced that it should never be employed in such patients.

During the present war we have gradually, but steadily' so improved our methods of treatment of men with severe shock caused by smashed limbs that we are now able to save patients by amputation of an extremity who would previously have died without operation being possible. We are also able to save very many limbs which would four years ago have been lost, and whereas in our longest established general hospitals about one patient in every hundred wounded men lost a limb in 1914-15, in the same hospitals during the past year amputations have been performed in only about one patient out of every 200.

GAS GANGRENE.

It is a curious fact that Hunter has practically nothing to say of the complications of gunshot wounds, and it is evident that those he saw left but little impression on him. In the present war the frequency of "gas gangrene" has greatly impressed all surgeons, for in civil practice it was practically unknown, and its frequency came as a rude shock to the aseptically trained operator. But if it be asked, "Did gas gangrene occur as a common complication in Hunter's time, and has it been of frequent occurrence in other wars?" I believe that the reply should be in the negative. My own belief is that in no previous wars has gas gangrene ever played so predominant a part as it did in France and Belgium in the early part of this war.

It must be admitted by all that acute gas gangrene is so striking and terrible a malady that it could not possibly have been overlooked if it were at all frequent. Yet I find no description of it in Hunter's work or in those of any of the early writers on war surgery, and although the latter wrote chapters on the subject of gangrene or "mortification" it is evident that they refer to that which is due to vascular lesions or else to an extensive smashing of a limb followed by sepsis. It is certain that the so-called "hospital gangrene," so fully described by Larrey as "*Pourriture des Hôpitaux*," was not gas gangrene, but a spreading septic ulceration which characteristically did not occur soon after injury, but rather in suppurating wounds, and was of the same nature as the "sloughing phagedaena" which not so many years ago was rife in wards for venereal diseases. Larrey's contemporary in the French army, Baron Percy, and Guthrie in the British army, give no description of a disease occurring in the Peninsular war resembling the gas gangrene of the present day. There is no mention of its occurrence and still less of its prevalence in the Crimean war; and Professor W. W. Keen, who himself served in the American war, writes to-day: "Personally I never saw a single case in the civil war."

Various French writers described cases of gas gangrene in the Franco-German war of 1870, but, although there is no doubt of its occurrence at that time, there is no evidence that it was generally prevalent.

Coming to still more recent times, gas gangrene never occurred in the South African campaign, and was of quite rare occurrence in the Russo-Japanese war. Finally, I have personally inquired of many surgeons who took part in the Balkan war of 1913, and there is no doubt in their minds that it was very seldom seen.

In the present war gas gangrene has been practically unknown in Mesopotamia, Egypt, or Palestine, and I am informed that it did not occur in the early days of fighting at Gallipoli, although it was occasionally seen later on. At the Salonica front it has been of comparatively rare occurrence, and it has not been prevalent on the Italian front.

It is well known that at the beginning of the war in France and Belgium the medical services of all the combatants were quite inadequate to deal thoroughly with the immense numbers of wounded. Most of the latter at the time of the retreat from Mons and in the fighting on the Aisne had to be evacuated to base hospitals before any surgical treatment could be carried out. There were practically no hospital trains in those days, and the railway services were so crowded with supplies for the armies that traffic of all kinds was exceedingly slow. The result was that the wounded, placed when opportunity offered in the luggage vans of empty returning supply trains, were frequently several days in reaching their destination after being wounded, and great numbers

of them were suffering from extensive gas gangrene on arrival, or had succumbed to it *en route*.

During the ensuing first battle of Ypres and the succeeding winter it was still an exceedingly frequent complication. It diminished very much during the next summer, when there was also much less fighting, until the battle of Loos in September; during that battle it was much increased. In 1916 it was less evident until the heavy casualties of the battle of the Somme filled the hospitals with wounded, many of whom developed gangrene; during the fighting at Arras and Vimy in the cold and stormy spring of 1917 there were still very many cases, in spite of good surgical work at the front. From that time, now nearly two years ago, gas gangrene rapidly diminished, and during 1918 it was comparatively little in evidence, at any rate in its worst forms, as will be gathered from the following samples of figures from the base hospitals during heavy fighting.

Gas Gangrene in 1917 and 1918.

- A. Of 5,270 consecutive patients from the Messines battle (in June, 1917) there were only 22 cases of gas gangrene.
- B. Of 3,690 consecutive wounded at the beginning of the Passchendaele fight (in August, 1917) there were only 16 cases of gas gangrene.
- C. Of 3,200 at a later stage of the same fight 7 cases.
- D. Of 2,900 patients in July, 1918, there were 11 cases of gas gangrene.
- E. Of 10,000 wounded in August, 1918, there were 27 cases.

It will therefore be seen that out of a total of about 25,000 patients at base hospitals in 1918 only 84 patients had serious or "massive" gas gangrene; this is an incidence of about one case in three hundred wounded men, and many of these had multiple wounds or badly smashed limbs.

If the question is now asked as to the causes that account for the great diminution of this grave affection in 1917-18 it must first of all be noted that:

(a) The ascertained cause of gas gangrene is the presence of certain well-recognized anaerobic organisms which are present in highly dunged and cultivated soil, and are absent from that of the South African veld or the sun-dried sand of Egypt and Palestine, while they are present in small numbers and are apparently less virulent on uncultivated land in Eastern Europe.

(b) The organisms concerned have little power over healthy tissues, but they are resistant to the strongest antiseptics and grow freely in damaged muscle, especially if into the latter be thrust some foreign body rich with the organisms, such as a piece of muddy clothing. Some of the very worst cases are those where the "missile" is composed only of the mud itself driven with immense force by a shell or bomb exploding in muddy ground, and frequently causing a great number of small wounds, in some of which the mud may be driven right through the deep fascia or actually into the muscle sheath.

(c) Lowered vitality of the patient, due to exposure to wet and cold, to exhaustion from want of food, or to over-exertion, is a predisposing cause, as is also to a very serious extent the deprivation of blood supply, owing to injury of a large vessel. It is also clear that wet and cold weather and mud favour gas gangrene much more than heat and dust.

Such are the now well-recognized causes of gas gangrene and the conditions in which it may be expected to occur, and very much of the reduction now noticed is due to the abandonment of strong antiseptics, and to the timely excision and surgical cleansing of the wound and the removal of all foreign bodies. It may also be claimed that the thorough arrangements for the treatment of the chilled and exhausted man by warmth, rest, and intravenous injection have saved many lives by restoring the vitality and resisting powers of the patients.

But, when all this is allowed for, it is evident that there must have been other causes at work to account for the diminution of this danger to the wounded man, and these must be sought in a lessened virulence of the infecting agent itself which has occurred during the past four years and has in its turn resulted from altered conditions of the soil in which the organisms are bred. That this is true is supported by the following facts:

In the Somme battle of 1916, in spite of many thousand operations performed at the front, there were very numerous cases of bad gas gangrene both in the casualty clearing

stations and at the base hospitals, although they were much less frequent than in 1914. In the Somme fighting over the very same ground, during the retreat in March, 1918, when the casualty clearing stations had to be abandoned, operations could not be done at the front. Patients had consequently to be sent to the base in trains of all kinds as well as in ambulance trains, and were often not thoroughly treated by surgical operation till after a delay of one or two days. Yet there were far fewer cases of gas gangrene in 1918 than in 1916, and in 20,000 patients at one base between March 23rd and 29th during the worst time of the retreat the incidence was only 1 per cent.

But, whereas in the earlier years of the war much of the land was covered with rich crops and had recently been very freely manured, at the present time in the battle areas the face of the earth is absolutely changed. A great stretch of country comprising many hundreds of square miles has been practically destroyed, as far as its development by mankind is concerned. What was once a prosperous countryside with highly cultivated arable land is now little more than a desert, pitted with shell holes, scarred by innumerable trenches and gunpits, the chalk subsoil scattered over the surface of the ground, the skeletons of smashed and shredded trees alone marking the sites of destroyed villages, and all appearance of cultivation wiped out. The whole land has gone back to "prairie conditions," and looks like an extensive and barren moor, although in summer time it is partly redeemed by the luxuriant growth of wild flowers. In such a country which has been exposed to sun, wind and rain for three or four years, uncultivated, unmanured, uncropped, deserted by man and animals, it is probable that the anaerobic organisms have diminished both in numbers and virulence. But, be the causes what they may, it was an immense relief to the surgeon in 1917-18 to find that this, the greatest surgical epidemic of wound infection which has ever been recorded, was neither so prevalent nor so dangerous as formerly, and that the wounded man was no longer so greatly exposed, even though his wound itself was slight and involved no vital part, to grave risk of life or limb.

TRANSPORT AND HOSPITALS AT THE FRONT.

I now propose to turn to the arrangements for transporting and treating wounded men. The history of the early hospitals in the British army has been carefully investigated by the late Colonel William Johnstone, and from his researches it appears that in Hunter's day the patients at the front were treated in "Regimental Hospitals" or else in "Garrison Hospitals," "Marching" Hospitals or "Flying" Hospitals were established by William III, and first saw active service in his campaign in Ireland. In addition to medical personnel they had "nurses, cars for the transport of the sick, drivers, and men servants." Unfortunately these precursors of our present Field Ambulances came to an end with the completion of Marlborough's campaigns in 1711, and were not revived until the nineteenth century, so that they did not exist in Hunter's time. Ranby wrote in 1781 as follows:

I would wish to be indulged in a scheme which might, I think, be put into execution with all the facility imaginable. It is this: when the Army is forming for an engagement, let the surgeons with their respective mates of the three or four regiments that are posted next to each other collect themselves into a body, and take their station in the rear according to the command of the general. Here let the wounded be put under their immediate care and management. By this means they will be enabled mutually to assist each other, and to perform their duty both with care, exactness, and dispatch.

It is thus evident both that the need of some arrangement for mutual aid was felt, and also that it did not exist in Hunter's time. In those days the wounded soldiers were taken to the base in country wagons or in the regimental forage carts, and it was left to Larrey to create, in 1792, the first ambulance cars, which were reserved for the sole use of the sick and wounded, and which were named by him *Ambulances Volantes*. He figures and describes them as "a kind of carriage hung on springs, uniting great strength and solidity." They were of two kinds—the light with two wheels and the heavy with four wheels. Each ambulance "cadre" or "division" was provided with twelve light and four heavy cars, and comprised a personnel of 340 officers and men. Larrey

states that after the battle of Eylau in 1807 the wounded were successfully transported by the ambulances volantes to chateaux "at a distance of not less than fifty-five leagues." This "division" may fairly be claimed as the first efficient field ambulance in the history of war.

Since this period horse ambulances of various types have been employed as part of the transport of our own field ambulances, but it was not until the present war that "Motor Ambulances" were added to the transport of the Field Ambulances and that "Motor Ambulance Convoys" were provided to supplement the latter.

I think it is hardly realized how much in present warfare the whole system of the treatment of the wounded is based upon and pivots on the "motor ambulance." In Hunter's time the range of the musket was two or three hundred yards, and that of a cannon less than a mile: beyond this distance surgeons could work in safety. It was consequently not at all difficult to carry the wounded to some place where a barn, or shed, or a stone wall offered sufficient protection—for there were no shells.

At the present day there is no such thing as absolute safety anywhere near a battle front, for, apart from bombs and guns of exceptional range, immense numbers of shells are fired to a distance of from six to eight miles. The consequence is that, while surgeons supply skilled help, at much risk, at the Regimental Aid Post or the Advanced Dressing Station, within a very short distance from the line, the patients have to be removed quickly to considerable distances, and the Casualty Clearing Stations have to be placed some eight miles or more in the rear. The consequence is that horsed vehicles could not possibly make a sufficient number of journeys to bring in the wounded from heavy fighting within a reasonable time, and, in addition, the numbers of the wounded are so great that there has been nothing in any previous war to compare with the task of the ambulances of the present day. It must therefore be understood that all wounded men have now to be taken a considerable distance before reaching a place where they can be both immediately treated by the surgeons and also retained and cared for after operation.

It is during this long motor car journey from the battle front that the patient runs risks of those further injuries which it is the object of the surgeon to minimize as much as possible. One of these risks is exposure to cold, and this is a most serious danger to men suffering from shock or haemorrhage. To avoid this, hot-water bottles are freely used, stretchers are covered with one folded blanket and the patient is warmly wrapped in others. The car is also usually provided with a pipe heated by a supply of hot air from the exhaust pipe of the engine. The other most important risk is that of injury to the soft tissues by the fragments of broken bones which are jolted by the movements of the car. The extent of this will largely depend on the roughness of the road and its pitting by shells, but to a still greater extent it will depend on the care with which suitable splints have been applied. It is the custom in the British army to splint all fractures as far forward as possible, and in any case at the Field Ambulance, with the result that, with the apparatus now provided, fractures are so immobilized that the minimum of risk is incurred, and the minimum of pain caused, by the journey. It is not too much to say that very many patients who, without a good splint would arrive in a state of collapse and die, or else would lose their limbs, now get down to the Casualty Clearing Station with discomfort rather than with suffering.

It has been remarked that the modern offensive methods which characterize this war are largely dependent on the invention and development of the petrol engine, and that the tractors of great guns, the war in the air, and the war under the sea are all dependent on this device. It is at least some satisfaction to know that it is to the same device that tens of thousands of wounded men owe not only a more comfortable transport than the soldiers of previous wars, but also the saving of lives and limbs in numbers beyond measure.

THE CASUALTY CLEARING STATIONS.

In Hunter's day the only hospitals near the front seem to have been those called "Regimental," and they were apparently established in any buildings which seemed suitable for the purpose. I have not found any records of

their equipment, the number of their personnel, or their accommodation. It is probable that they were very primitive.

In our own army at the present day the demand for hospitals at the front has resulted in a new unit which has been created by the conditions peculiar to this war. I allude to the Casualty Clearing Stations, and these have their counterparts in the armies of all the other European combatants.

This unit had not been in use before the present war. At the commencement of hostilities it consisted of a staff of six medical officers with a commanding officer and quartermaster and 80 orderlies; some of the latter were well-trained nurses. It provided accommodation for 200 patients on stretchers, but was not supplied with beds. Its surgical equipment consisted merely of sufficient instruments and appliances for the performance of a few urgent operations, and it was provided with one operating table and a few very primitive wooden splints. Its function, as the name implies, was "to clear" the Field Ambulances and to pass on by train the sick and wounded for further treatment at the base hospitals. Each unit was intended to be attached to a Division, and was supplied with horsed transport.

Since those days the long line of trenches and the comparative immobility until recently of the armies have provided the opportunity for very great developments, with the results that the Casualty Clearing Stations of the present day are very efficient and well-equipped advanced hospitals, with theatres for six or more tables, and suitable in every way for the performance of any operation. They have expanded to provide, according to circumstances, for from 600 to 1,200 patients, of whom 200 have beds and the remainder stretchers.

A great deal might be said of the work of the Casualty Clearing Stations which would be out of place here, but it may be pointed out that an advanced hospital of this type is an absolute necessity in the warfare of the present day. Very little experience was required to show that it was quite impossible to carry out the pre-war idea of doing all the surgery (with few exceptions) at the General Hospitals at the base. Men with such injuries as wounds of the chest and abdomen, severe fractures and wounds of large vessels could not be safely conveyed long distances by train, while patients suffering from dangerous shock or the effects of profuse hæmorrhage demanded immediate treatment as near the front as possible. But, over and above all this, the necessity which arose for early operation in order to prevent the development and spread of gas gangrene or dangerous sepsis in even slight wounds alone justified the expansion of the Casualty Clearing Stations.

VALUE OF FRONT LINE SURGERY TO AN ARMY.

It will thus be seen that the object in view in their development was to secure efficient treatment as early as possible. The ideal of surgical treatment would be the supply of enough surgeons and enough hospitals, close to the front, to allow of all operations being always performed there with the least possible delay. This ideal has indeed often been realized in the present war, when, during quiet periods, the wounded were comparatively few, but it has proved impossible to supply enough surgeons and enough accommodation to realize the ideal when the casualties of a great battle number many thousands a day and when the duration of the battle is measured not by days but by weeks or months. Yet, although it has not been always possible to do that which is ideal, the custom of reinforcing busy hospitals with "teams" of extra surgeons, anaesthetists, and assistants has enabled an immense amount of work to be done. Apart from operations on the abdomen, the chest, and the head, the vast bulk of this work is of a nature which appeals to surgeons and to patients alike, for it is "conservative surgery" in the best sense of the term. In the first place it consists largely in the thorough surgical cleansing of wounds so as to save limbs and lives, and in the second place it supplies the necessary foundation for the early closure of the wounds by suture. In this way large flesh wounds are prevented from suppurating, and compound fractures are made simple fractures, and the patient is saved from a long illness and its debilitating effects. Such treatment diminishes stay in hospital, frees

hospital beds, lessens the labour of nurses and surgeons, and, best of all from the point of view of the army, it enables many patients to recover quickly and to return to their regiments. I would claim that, apart altogether from considerations of humanity, good front line surgery very fully compensates an army for the demands it makes on supply and transport. It more than pays its way both by returning sound combatants to the ranks and also by saving the country the expense of innumerable pensions on behalf of men whose lives or limbs have been saved.

Long before this war the combatant branches of the army fully realized the importance of the prevention and cure of illness and their effects on the maintenance of armies in the field, but it is only during the present war that the value of good and prompt surgery has been fully appreciated, and that the necessary facilities have been supplied whenever the military situation has permitted. Similar facilities will henceforth be expected in all future wars.

THE THIRD BATTLE OF YPRES.

It is well known to the medical profession that an immense amount of this front line surgery has been successfully undertaken, and it is also well known to and deeply appreciated by the combatants of all ranks, whose confidence and faith in the Army Medical Service is by far the best possible tribute that could be paid to it. I will not attempt to supply any statistics, but some idea of the magnitude of the surgical work at the front will be gathered if I state that during the three and a half months of the third battle of Ypres, in 1917, 61,500 operations were performed under anaesthetics in the Casualty Clearing Stations of two armies.

It will easily be realized that much forethought and preparation are required to produce these results, for they require not only arduous work by day and night for perhaps twelve hours out of twenty-four—a tax on the strongest when continued for weeks on end—but also the harmonious working from the front to the rear of stretcher-bearers, regimental medical officers, field ambulances, ambulance convoys, and ambulance trains, any one of which is liable to interruption by accident or by the act of the enemy.

The staffing of the Casualty Clearing Stations for the third battle of Ypres especially deserves to be recorded, for on this occasion many of the most leading and representative surgeons from the United States, from Canada, Australia, New Zealand, and South Africa were included in the reinforcing surgical "teams," or else were on the staffs of the Casualty Clearing Stations of the armies concerned.

Thus, for the first time in history, the surgical skill and talent of all the various sections of the Anglo-Saxon race were brought together on a battlefield, and with the happiest possible results to the wounded men. On this occasion, because of the absence of heavy fighting in other armies, more surgeons were available than at any other period, and no Clearing Station had less than twenty-four surgeons and twenty-four nurses. It was therefore possible to keep eight operating tables in action in every unit, and there is no doubt that almost every wounded man whose condition made it advisable was passed through the operating theatre before being sent by ambulance train to the base.

The war of movement which characterized the closing stages of the campaign called for the development of new methods for meeting the situation thus created. Of the details of these a great deal might be written which would be too lengthy for the present occasion, but this much may be said: The Clearing Stations were sufficiently reduced in the bulk of their equipment to enable them to be rapidly moved forward, and they were frequently able to take in and treat many hundreds of men within twenty-four hours of their arrival on a new site, while at no time during the whole campaign was there more work done in resuscitating the badly wounded, and in the intravenous administration of blood or of alternative fluids to men who had suffered from severe hæmorrhage.

CONCLUSION.

Let me now recall to your attention a phrase of Hunter's which I read to you at the beginning of this address. "It (the appointment to the Belleisle expedition) drew my attention to inflammation in general, and enabled

me to make observations which have formed the basis of the present Treatise." The war was to him not merely a sphere for the exercise of his surgical skill, but also an opportunity for observing and studying conditions of which he had hitherto had no experience. What has this war been to the surgeons of the present day? It may truly be said that very many of them, and in all parts of the world, have entered into this work imbued with the spirit of our great master. To them also it has not only afforded immense opportunities of helping their fellow countrymen, but has also provided problems for study and for solution. The spirit has been one of progress and of development, and of unwillingness to rest content with conditions that might be bettered or with methods which proved unsuitable. It is not too much to claim that each year of war has seen better surgical measures devised and consequently better results obtained. The sufferings of the wounded have been lessened, the dangers they run have been diminished, and lives and useful limbs have been saved in constantly increasing numbers. Surgeons have not been content merely to guess at possible answers to the never-ending questions suggested by the complications of war. They have devised new methods to meet new conditions and have put them to the test of experience; and when they have failed they have tried and tried again until they have compelled success.

In this great tragedy of war the Royal College of Surgeons of England has played no unimportant part. Hundreds of its Fellows and thousands of its Members have willingly pressed forward for service. Some of them, like our President, have occupied with credit and honour the most prominent and important positions, and others of them, often less prominent no doubt, have not only given their services, but have also given their lives. The position I have had the honour to hold in the Army Medical Service has afforded me very abundant opportunities of appraising the performances of others, and I am full of admiration both for the skill and ability of our surgeons and for the splendid work done by the Royal Army Medical Corps in rescuing the wounded in conditions of unprecedented difficulty and danger, and in organizing the hospitals for the subsequent treatment and restoration to health of the British soldier.

CAPACITY FOR WORK IN AMPUTATIONS OF THE LOWER EXTREMITY.

BY

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The accompanying diagram is intended to demonstrate in a graphic manner how capacity for work varies in amputations in the lower limb. Textbooks on operative surgery afford little information on this important aspect of a subject which is now an economic as well as an operative problem.

"Capacity for Work."

The term "capacity for work" ought to mean not merely the ability to do a certain class of work, but rather the ability to keep on doing it from day to day. A man's value in the general labour market depends as much on his being able to "keep time" as on the actual amount of work which he can do. In regard to discharged soldiers, this question is put to the medical officer: "By how much is the man's earning capacity lessened by his amputation?" The answer to this question does not depend alone on the length of the natural as compared with the artificial limb, for whilst some low amputations are bad, giving a low capacity for work, other comparatively high amputations are good, allowing the man to become a very efficient and steady worker.

Before considering the special features upon which capacity for work depends, let the functions required of an amputation of the leg with its prosthesis be for a moment considered.

1. *Support*.—This demands an investigation of how the weight of the body is transmitted to the ground through

the natural and the artificial limb. The best form of support is that obtained through a direct end-bearing stump. Indirect or lateral bearings at some time or other cause fraying and ulceration of the skin, and require much more care on the part of the patient if broken time is to be avoided.

2. *Stability*.—This varies directly with the length of the natural limb, and with the length of the segment in which the amputation has been performed. With short stumps the grasp of the socket may not be sufficient, and must be improved by a splice in the form of a laced socket, or in thigh stumps a pelvic band. In some cases stability has to be attained by stiffening of the joints of the artificial limb at the hip or knee, but this interferes with the gait.

3. *Progression*.—This depends on the use of natural rather than artificial joints, good muscular power in the lever which activates the artificial limb, a long lever, and painless bearings. In short stumps we find progression accompanied by fatigue. This could be diminished by decreasing the weight of the artificial limb. The excuse of limb makers that the natural limb weighs much more than the artificial one is really irrelevant, for the muscular power of acting muscles is greatly diminished by disuse, by interference with their insertions, and only a few muscles are effective at all.

4. *Appearance*.—Appearance is of no importance as far as function is concerned. Compared with a limb giving comfortable support, efficient stability, good progression, and lightness, appearance counts for nothing. The French have long since recognized this by supplying a peg leg with a broad base for special workers like farm hands who have to be on foot all day.

Estimation of Capacity for Work.

Having laid down these general principles, what further considerations influence "capacity for work"? They are:

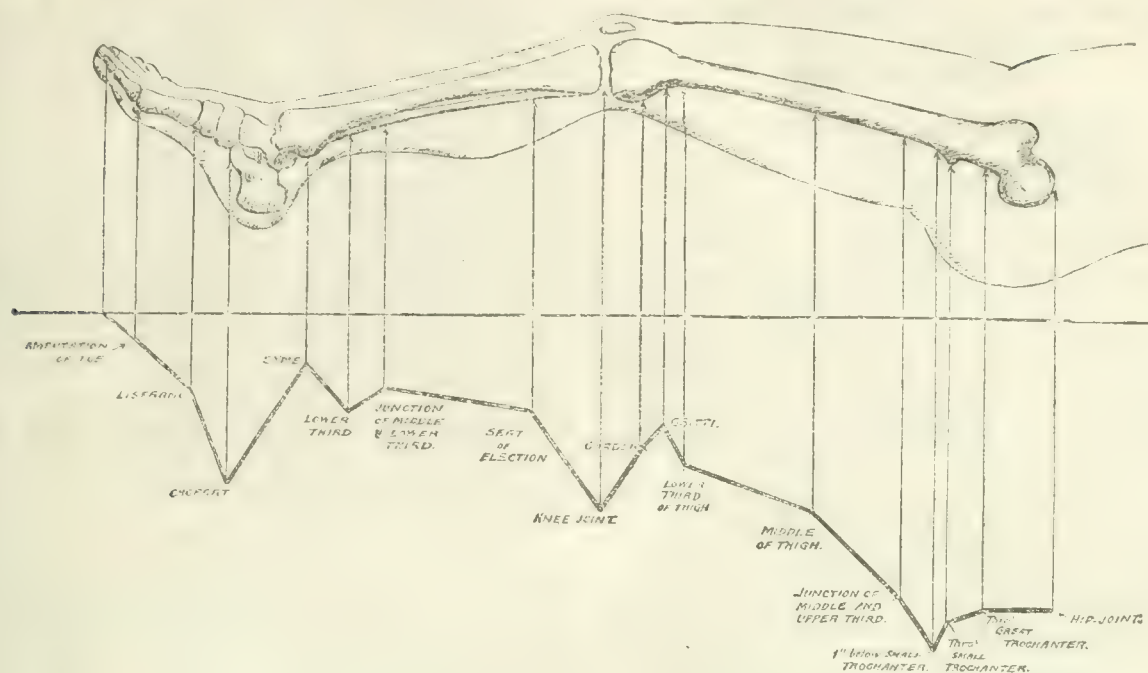
1. The length of the natural as compared with the artificial limb.
2. The specific value of the ideal amputation at the particular level.
3. The type of prosthesis most suitable for the particular stump. Prostheses for some amputations are constantly requiring repairs whilst others last for years.
4. The special conditions which prevail in the case under review—that is, how far the particular amputation falls below the ideal amputation at the same level.

All these points ought to be considered in estimating the capacity for work of a man who has had an amputation in the lower limb. The fourth point will be governed by the disposition of the flaps, position of the scar, the presence or absence of pain, adhesions between bone and skin, condition of joints, and by whether the surgeon has succeeded in obtaining an end-bearing stump. These points will demand consideration in every individual case, and therefore cannot be reckoned with in attempting to map out a curve of "capacity for work" in amputations of the leg in general.

I have tried to represent in a graphic manner the fact that capacity for work does not vary in a regular manner as we pass up the limb, though it will be seen by reference to the graph, and conceded on general principles, that the longer the natural as compared with the artificial limb the greater the capacity for work. The secondary irregularities on the curve are due, therefore, to variations included under heads 2 and 3—namely, the value of the ideal amputation, and the type of artificial limb or appliance supplied for amputations at the given level.

Following the graph from left to right it will be seen that amputation of the great toe is, in my experience, followed by some slight fall in capacity for work, though amputation of the other toes may be performed with impunity, the operation not being followed by diminution in the man's capacity for "keeping time."

With a Lisfranc amputation there is a further drop in the capacity curve, which, however, falls much more with the Chopart operation. The French orthopaedists, especially Trèves, have shown that of all the amputations in front of the ankle the Chopart is the worst. Trèves points out that every centimetre that can be saved in amputations on the foot increases the value of the anterior *point d'appui*, and therefore increases the efficiency.



Graphic representation of capacity for work in amputations of the leg.

An amputation in front of the scaphoid is an improvement on the Chopart; one through the shaft of the metatarsals is better than a Lisfranc, and so on till we reach the toes.

To explain why the capacity curve falls so low in a Chopart amputation we take the two heads already mentioned, and we find (1) that even the ideal amputation interferes radically with the mechanics of the foot by removing completely the anterior pillar of the arch; the scar, at first placed anteriorly, or even above, the ends of the bones, will work its way downwards; the bones themselves are gradually drawn upwards by the tendo Achillis, and this gives rise to an increasing potential equinus, nearly always associated with some varus; and (2) the prosthesis for Chopart's amputation requires very frequent alteration and repair owing to changes in shape of the stump and to the very nature of the prosthesis itself.

With Syme's amputation we find the curve rising abruptly, indicating that the ideal performance of this amputation leaves a stump which is, from the point of view of function, as nearly as possible perfect. It gives (a) a complete and permanent end-bearing; (b) there is a long lever affording perfect stability; and (c) the preservation of the natural knee gives almost, if not indeed quite, perfect gait. The only criticism to be offered is that the artificial ankle, owing to the presence of the side bars, is rather bulky and *disgraceful*.

Proceeding upwards to the lower third of the leg we find the curve dropping. According to Huggins, an amputation should never be done at this level, because of the atrophic condition of the skin which tends to ulcerate, so precluding the possibility of a good end-bearing. The absence of an end-bearing entails a lateral bearing at the level of the tibial tuberosities with the disadvantages of irritation, blistering, and often sepsis of the skin. The presence of the fibula causes a bunion, often painful, and pressure on the external popliteal nerve, as it winds round the neck of the fibula, will demand at some time or other surgical intervention.

In the middle third of the leg the graph is gradually falling as we shorten the lever till we come to the "seat of election" problematically so called. This point must be regarded as the extreme "limit of shortness" in below-the-knee amputations. The curve above this point rapidly drops, reaching its lowest point in the Stephen Smith disarticulation through the knee-joint. This is decidedly bad as a definitive operation, because (a) a complete end-bearing is never possible; (b) the skin over the condyles is stretched, thin, and very prone to ulcerate, even apart from pressure; and (c) the fitting of an artificial limb is

handicapped by the very shape of the stump, consisting as it does of a large bulb on the end of an attenuated shank.

In the lower half of the thigh there is a gradual fall in capacity for work, dependent on the shortening of the lever formed by the stump. But with a perfect Stokes-Gritti operation there are advantages over the slightly longer Carden amputation, in that it gives a complete and permanent end-bearing, and the presence of a layer of compact bone, rather than a sawn surface, prevents any risk of adhesions between the bone and the skin over it. Above the mid-thigh there is, in addition to shortness, the disturbing factor of the pelvic band, which frequently gets out of order and calls for repairs. Therefore we find a rapidly diminishing capacity for work above this point till the "limit of shortness" in thigh stumps activated by the stump in an ordinary bucket is reached. Huggins lays it down that this point must be not less than three inches below the lesser trochanter. In amputations between this point and the lesser trochanter no satisfactory fitting can be supplied, and they are, therefore, the worst of all amputations, and should never be performed as definitive operations. At the level of the small trochanter it again becomes possible to fit an artificial limb through the intervention of a hip platform. The thigh bone, being flexed by the psoas, does not interfere with the fitting, though an amputation carried through the great trochanter or the femoral neck, or a disarticulation through the hip-joint itself, gives a slightly better result.

My thanks are due to Lieut.-Colonel A. B. Mitchell, O.C. the Special Surgical Military Hospital, Belfast, for advice and assistance freely given at all times; to Captain R. J. McConnell, my house-surgeon, for his helpful criticism, and to Mr. R. W. H. Blackwood for the great pains he took to make the drawing a clear representation of the subject.

A SPANISH medical mission headed by Professor Martinez Vargas, dean of the faculty of Barcelona, and comprising a number of professors, hospital physicians and surgeons, and heads of laboratories, recently visited the Hôtel-Dieu, Cochin, Saint Louis and Buffon hospitals in Paris, the military medical school at Val-de-Grâce, the Colonial hospital at Nogent, the Spanish hospital at Neuilly, the Canadian hospitals at Saint Cloud and Joinville, the physiotherapeutic services at the Grand Palais, various laboratories, the Pasteur Institute and hospital, the Edith Cavell school, and the general workshops of the health service. The mission was received by the Société de Médecine, at a meeting presided over by the Minister of Health and attended by representatives of all the medical societies of Paris and the profession of France, and the Allied and neutral countries.

NOTE ON THE USE OF IONIZATION IN THE TREATMENT OF CERTAIN TYPES OF FACIAL SCARS.

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As a therapeutic measure in the treatment of facial scarring with its unpleasant consequences, ionization has hitherto received scant attention. The only reference in current literature which we have been able to find on the subject is a book by Hollande¹ in which the author claims good results by the ionization of these scars with potassium iodide as his electrolyte.

We propose in this paper to demonstrate the results that we have obtained by ionic treatment of facial cicatrices consequent upon war injuries to the facial tissues, and especially where damage has been done to the masticatory muscles.

Perhaps the commonest disability arising from this type of injury is the condition of "false" trismus, manifested by deficient mandibular movement and inability to open the mouth properly. Hitherto such conditions have been treated by intermittent intra-oral gagging, and by massage of the scar area, with transient good results but a strong liability to recurrence. We have already noted elsewhere² that this clinical condition is due commonly to one of three causes:

1. Fracture of the ascending ramus of the mandible, with actual damage to contiguous tissues.
2. In the absence of fracture, injuries of such a nature as to involve some fibres of the masseter, temporal, or pterygoid muscles, the scar tissue limiting movement.
3. Reflex spasm of all the masticatory muscles consequent upon organic injury of remoter parts.

In the more marked cases, as will be seen from the list recorded below, the degree of separation possible between the upper and lower incisor teeth may be as small as three millimetres.

We have found that the treatment of the scars by ionization results in a progressive decrease in their densities and an increased flexibility, both subjective and objective, with marked permanent improvement in ability to open the mouth and masticate. This has definitely occurred even when ionization has been unaccompanied by the use of intra-oral gagging or facial massage. Adherence of the scar to osseous tissue offers greater resistance, and the treatment has to be prolonged in these cases, often for a period of three months or more.

Method of Ionization.

We have used the alternating current from the city mains, which is run through a motor transformer so as to give a constant current of 100 volts E.M.F. This is conveyed to the patient through a distributing board, fitted with a wire resistance rheostat for the purpose of varying the strength of the current, and with a milliammeter for registering the amount of current used. The electrodes consist of small zinc plates about two inches square, between which and the skin we place from sixteen to twenty-four layers of folded lint. These coverings are about half an inch larger all round than the metallic electrodes, in order to prevent possible burns by contact of the metal with the skin. The pad of the negative or active electrode is soaked in the therapeutic agent (in our cases NaCl, KI, or sodium salicylate) in 1 or 2 per cent. solution in hot distilled water. The pad of the positive pole is soaked in hot water to which a trace of sodium chloride has been added to ensure easy passage of the current. The negative electrode is placed over the cicatricial area, whilst the positive electrode is placed under the chin (most often) or over the deltoid or on the nape of the neck. These are made secure by bandages which also ensure efficient contact with the skin area to be treated.

The current is turned on very slowly, and we start with a current of 2 to 3 milliamperes, gradually working up, according to the patient's tolerance, to 15 or 20 milliamperes. The maximum current which each patient can support comfortably varies, and is usually not reached until the third or fourth treatment.

By this gradual method we have been able to obviate the unpleasant after-effects of headache, vertigo, and nystagmus, which are liable to occur from the passage of an electric current so near to the semicircular canals and their endolymph system. The duration of each treatment is from thirty to fifty minutes, daily when the condition of the skin permits and on alternate days when the skin is sensitive. It is useless to attempt ionization when oral sepsis is present, or, at any rate, until it is under control; also it should not be used while metallic foreign bodies exist in the tissues, otherwise burns are liable to occur, with the formation of slowly healing ulcers.

In the event of an abraded surface happening to be in the area under treatment, it is sealed with a drop of collodion which is allowed to dry before proceeding. If a small indolent sinus persists, it is plugged with gauze soaked in the electrolyte used and usually heals early in the treatment.

At the end of each treatment the current is always gradually reduced before withdrawal to avoid unpleasant subjective shock to the patient. It should be remembered that the ionic effect is directly proportional to the intensity of the current and the time of application, so that as large a current as can be comfortably borne should be used, and the treatment should be of a long rather than short duration.

Mode of Action.

Ionization with sodium chloride as an electrolyte has given us the best results; ionization with iodides is more apt to cause irritation of the skin, but is useful, as is ionization with sodium salicylate, in the alleviation of painful conditions. As far as softening the scar is concerned, the latter two drugs are less effective, in our opinion, than sodium chloride (chlorine ions).

It is said that the liberation by secondary reaction at the cathode of the hydroxyl ion, which like the hydrogen ion is one of high velocity, may contribute to the resultant effects, and we can confirm that the results obtained with the negative pole as the active electrode are greater than those obtained with the positive. There seems to be no doubt, however, that a considerable portion of the resultant good effects, is due to the condition of induced hyperaemia which persists for an hour or two after the cessation of treatment. It would seem highly improbable that the ions penetrating the tissues, or formed in the tissues by the passage of the current, retain their ionic or active state locally for more than a fraction of time, but that they immediately enter the general circulation in combination as inert substances. It has been stated that ions are introduced into the endocellular plasma and not into the general circulation, but we fail to see why such a permeable membrane as the cell wall should act as a confining barrier to the highly active ion, or why the cell plasma, which is isotonic with the surrounding exocellular plasma, should exercise any chemiotactic effect upon the ion. Hence any benefit due to introduction of ions or to ionic dissociation in the tissues, must be limited to the time of passage of the current and to the period of active bombardment during the actual treatment.

The following list summarizes the nature of 24 cases with the results of treatment. Chlorine ions were used where there is no statement to the contrary. Supplementary treatment is indicated where any was employed.

1. Pte. O'C. Dense scar, masseter; limitation of opening. Fourteen treatments; current up to 20 milliamperes. *Result:* Scar very soft and pliable; complete restoration of ability to open mouth.

2. Sgt.-Maj. E. Small dense scar, right masseter; limitation of opening. Twenty-five treatments; current up to 26 milliamperes. *Result:* Scar much softer; mouth opening increased from 7 to 15 millimetres.

3. Cpl. P. Two dense scars (adherent to underlying bone) in right masseter region; limitation of opening 3 millimetres. Fifteen treatments; current up to 20 milliamperes; gag used. *Result:* Improvement; scar softer; mouth opening increased 3 to 7 millimetres.

4. Pte. S. Dense radiating scar of left cheek. Eighteen treatments; current up to 22 milliamperes; iodine ions. *Result:* Scar decreased considerably in size and density.

5. Pte. W. Extensive radiating scar, right cheek and right submaxillary region; limitation of opening. Fifteen treatments; current up to 22 milliamperes. *Result*: Scar decreased in density (scar adherent to bone).

6. Lee-Cpl. P. Long dense scar in right temporal region; limitation of opening. Fifteen treatments; current up to 24 milliamperes. *Result*: Scar considerably softer; opening increased from 5 to 20 millimetres.

7. Driver W. Dense scar, left temporal region; limitation of opening. Twenty-five treatments; current up to 20 milliamperes; gag used. *Result*: Improvement very slight.

8. 2nd Lieutenant J. Small dense scar, left masseter and left internal pterygoid region (adherent to bone). Fifteen treatments; current up to 10 milliamperes. *Result*: Scar softer; ability to open mouth increased 10 to 25 millimetres.

9. Sgt. C. Dense radiating scars from angle of mouth to angle of mandible on same side; limitation of opening. Twelve treatments; current up to 14 milliamperes; iodine ions. Massage employed. *Result*: Mouth opening increased from 4 to 12 millimetres; scar softened and loosened considerably.

10. Pte. H. Small depressed scar, left temporal region; painful; limitation of opening. Fourteen treatments; current up to 15 milliamperes; iodine ions. *Result*: Pain decreased; otherwise improvement slight.

11. Pte. M. Dense depressed scar, right masseter region; limitation of opening. Twelve treatments; current up to 20 milliamperes. *Result*: Scar considerably softer, but development of an abscess interferes with continuation of treatment.

12. Pte. F. Dense scar, right masseter region; limitation of opening. Eighteen treatments; current up to 20 milliamperes; gag used. *Result*: Mouth opening increased from 3 to 10 millimetres; scar much more flexible.

13. Pte. K. Extensive cicatrization in left angle of mandible region; painful. Twenty-four treatments; current up to 20 milliamperes; salicyl ions. *Result*: Scar considerably softer and more pliable; total absence of pain.

14. Pte. J. Extensive dense depressed scar, right masseter region; limitation of opening. Twenty treatments; current up to 20 milliamperes. *Result*: Improvement slight.

15. Pte. P. Large depressed scar, right masseter region; limitation of opening. Twelve treatments; current up to 24 milliamperes. *Result*: Mouth opening improved; scar less dense.

16. Pte. L. Dense scar, left masseter region (adherent to bone); limitation of opening. Eight treatments; current up to 9 milliamperes. *Result*: Scar softer; mouth opening increased from 5 to 10 millimetres.

17. Cpl. W. Depressed scar, left masseter region; limitation of opening. Sixteen treatments; current 9 to 14 milliamperes; gag used. *Result*: Mouth opening 3 to 8 millimetres; improving slowly.

18. Sgt. O'H. Long depressed scar, left temporal region; limitation of opening. Twelve treatments; current 7 to 11 milliamperes; gag used. *Result*: Considerable improvement; mouth opening increased 5 to 10 millimetres.

19. Pte. W. Injury pterygoid region; passage of bullet from supraorbital region to lower border of mandible of same side; limitation of opening; complete closure. Eighteen treatments; current up to 20 milliamperes; iodine ions; gag used. *Result*: Mouth opening increased from almost complete closure to 2 centimetres.

20. Lee-Cpl. R. Dense depressed scar, right temporal region; limitation of opening. Fifteen treatments; current up to 10 milliamperes; iodine ions; gag and massage employed. *Result*: Improvement slight.

21. Pte. B. Small scar, right angle of mandible; limitation of opening. Fifteen treatments; current up to 10 milliamperes. *Result*: Mouth opening increased from 4 to 9 millimetres.

22. Pte. T. Dense scar, right temporal region. Six treatments; current up to 6 milliamperes. *Result*: Improvement so far very slight.

23. Pte. W. Small depressed scar, masseter region; limitation of opening. Ten treatments; current up to 10 milliamperes; massage employed. *Result*: Improvement marked; mouth opening increased 8 to 14 millimetres.

24. 2nd Lieutenant M. Long dense depressed scar, left temporo-mandibular region; limitation of opening; incomplete facial palsy. Eighteen treatments; current up to 20 milliamperes; massage employed. *Result*: Marked improvement; mouth opening increased from 2 to 12 millimetres.

From the above notes we may conclude that ionization in the treatment of facial cicatrices is of undoubted value. The circulation through the scar tends to become re-established; there is loss of stiffness and adherence, permitting the play of underlying muscles and reduction of the limiting effect of the scar upon the masticatory muscles. It is a therapeutic measure which we think may be with advantage combined with the mechanical procedures of intermittent intra-oral gagging and massage. We find the results best when the gag is applied for

an hour immediately before treatment. In cold weather it is a good thing to thoroughly warm the area to be treated with hot water, or by the use of radiant heat by means of a small cup reflector for fifteen minutes before commencing ionization.

In cases also where the edges of the flaps, after facial plastic operations, are rolled and thickened, causing retraction of surrounding normal tissue, we have found ionization of use in increasing the softness and flexibility, and so in diminishing the deformative effects of such scars.

In conclusion, we should like to thank Lieut.-Colonel Littlewood, C.M.G., the administrator of this hospital, for the encouragement and facilities he has afforded us; Captain J. le F. Burrow, R.A.M.C.(T.), officer in charge of the Neurological Department, for much help and criticism, and Captain W. Maxwell Munby, R.A.M.C.(T.), and Captain J. E. Mawer, R.A.M.C.(attd.), for their courtesy in sending us additional cases.

REFERENCES.

- ¹ HoHande: *La Restauration Maxillo-Faciale*, Paris, February, 1918.
- ² *British Journal of Surgery*, No. 21, 1918.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SHELL WOUND OF THE HEAD WITH LARGE
FRAGMENT LODGED IN CEREBRUM:
AFTER-HISTORY OF PATIENT.

As a rule the medical officer serving with the forces abroad is unable to follow cases of gunshot wound of the head and to hear what eventually happens to them, though probably those who are on pension boards see a number of old cases. It would be interesting to determine what proportion of these cases recover and how many later on develop cerebral abscess or mental symptoms, and when these dangers may be considered past. In the following case—of which I regret that, owing to the great pressure of work, I was unable to keep better notes—I had the opportunity of observing the condition nearly three years after the wound.

Pte. F. was admitted to my ward in a base hospital towards the end of September, 1915. He was quite unconscious, with flaccid paralysis of all limbs and symptoms of cerebral compression. There was a wound 4½ in. above and ½ in. anterior to the left external auditory meatus. A skiagram showed a large shell fragment lying in the right cerebral hemisphere. I trephined without delay (he had been wounded two or three days previously) at the site of the wound, enlarging the trephine hole with nibbling forceps. A large intracranial clot was evacuated and a few fragments of bone were removed from the superficial part of the track in the cerebral tissue. No attempt was made to remove the shell fragment.

The patient made an uneventful recovery, except for the fact that a few days after the operation he developed a small cerebral hernia, which soon subsided. He was then evacuated to England.

After-History.—About six months after receiving his wound he had his first fit. For a time he had a fit about every fortnight, and then about every six weeks. Eleven months ago he married, and had no fit till six months later. This fit was succeeded by an interval of three months without a fit, after which he had two fits on the same day. When seen in August, 1918, he had had no fit for two months. He had been working as a labourer for ten months, and for the last six months had been in a china warehouse earning 35s. a week. His wife stated that mentally he was quite normal. He stated that he gets practically no warning that a fit is coming on, and his chief anxiety is that he may get one while crossing a road in traffic. The fit involves the whole of the right side, including the face, arm, and leg, the head being turned strongly to the right. The twitching lasts about a minute, after which he remains unconscious for about another minute. For half an hour after he feels dazed.

When he was examined in August, 1918 (nearly three years after the receipt of the wound), no abnormality in reflexes, etc., was found. He did not suffer from headache. All the cranial nerves appear to function well.

A skiagram taken for me by Dr. R. T. Cooke showed a large oblong foreign body. Dr. Cooke calculated that the shell fragment is 3½ in. deep (from left side), and that it is lying slightly to the right of the middle line.

Personally I do not consider any further operation advisable, as I think it might well leave him in a worse condition than he is in at present.

E. N. RUSSELL, M.B., B.Sc. Cantab.

CONDITION OF MUSCLES IN DISABILITY OF THE KNEE.

In certain cases of unilateral knee-joint disability there is hypertrophy of the calf with atrophy of the thigh on the affected side.

In a typical case, in which the left patella had been injured by gunshot but recovery took place with normal range of flexion, the left thigh was $1\frac{1}{4}$ in. smaller, while the calf was $\frac{1}{2}$ in. larger, than the right.

This association may be found in cases of trouble inside or outside the knee-joint or affecting the extensor muscles, but, I believe, only in cases of moderate disability where the patient walks with slight or no limp, and the action of the lower extremity as a whole is maintained and increased action at the ankle and foot compensates the knee defect.

In a series presenting increasing knee-joint disability there may be shown less and less hypertrophy of the calf; a case with great disability will probably present moderate atrophy of the calf with great atrophy of the thigh.

I would be glad to know where in the literature I may find further information on this interesting point, as it appears to have definite value in estimating disability.

Liverpool.

H. GRATTAN JOHNSTON, M.D., F.R.C.S.E.

PNEUMOCOCCAL PERITONITIS IN AN ADULT.

J. M., aged 53, was admitted to hospital on December 24th, 1918. He stated that for about two weeks he had had a little abdominal pain and slight cough, but he remained at his work until the evening of December 23rd, when the pain suddenly became more severe.

On admission the temperature was 99.6° , the pulse 100, respirations 30; the lower part of the abdomen was very tender and rigid, and there was hyperalgesia rather worse on the right side, but a little lower down than is usual in appendicitis.

As appendicitis seemed the most likely cause for the symptoms, I opened the abdomen by the usual gridiron incision. On cutting the peritoneum a quantity of pus appeared; this was diffused through the whole cavity and no primary focus could be discovered. It resembled the pus frequently found in empyema—a thin fluid with masses of fibrinous material in it. The coils of intestine showed a few loose adhesions. The appendix was removed, but, except for the fact that the surface took part in the general peritonitis, the organ was healthy. The pus was mopped up and the cavity drained. The pneumococcus was found in smears and cultures from the pus.

The temperature rose to 100.6° on the day after the operation, but fell to normal on the following day, and the patient was discharged cured on January 20th.

HENRY H. MACWILLIAM, M.B., D.P.H.

Walton Infirmary, Liverpool.

Reports of Societies.

SITE OF MALIGNANT STRICTURE OF THE OESOPHAGUS.

At a clinical meeting of the West London Medico-Chirurgical Society held at the West London Hospital on February 7th, with the President, Lieut.-Colonel E. M. WILSON, C.B., C.M.G., in the chair, Dr. REGINALD MORTON showed a series of radiograms illustrating a short paper which he read on the most common site of malignant stricture of the oesophagus. The author stated that during the previous nine years he had examined in the West London Hospital many cases where this condition was supposed to be present, a proportion of which gave a negative result. Ignoring the latter, there remained sixty-six cases of definite obstruction practically all of a malignant character—less than half a dozen where the spasmodic element was the sole or predominating feature. He suggested that by x-ray methods the most common site of malignant stricture of the oesophagus would soon be decided. To determine this, radiologists should agree on some uniform division of the tube for purposes of description, and these divisions must have relation to familiar landmarks seen in that locality during x-ray

examination. The division that he had adopted was chosen solely because of its convenience. The upper part lay above the sterno-clavicular joint; the next corresponded to the aortic arch and extended from the sterno-clavicular joint to as far below the arch as the joint was above it; the third portion included that part of the tube where it pierced the diaphragm; and the last one was the region immediately at and including the cardiac orifice. They might be described as (1) the upper, (2) the aortic, (3) the diaphragmatic, and (4) the cardiac portions. Applying this division to the series of sixty-six cases, eliminating one that was purely spasmodic as subsequent events proved, stricture occurred with equal frequency in the first and third portions, and also with almost equal frequency in the second and fourth portions. The disparity between the first pair and the second pair—"the odds and the evens"—was very striking, the latter being nearly four times that of the former. This contrast could be well shown in a tabular summary, thus:

1. Upper (suprasternal) ...	...	...	7
2. Aortic ...	...	...	25
3. Diaphragmatic ...	...	...	7
4. Cardiac ...	...	...	26
Total ...	...	...	65

ERYTHRAEMIA.

At a meeting of the London Association of Medical Women held on February 4th at the rooms of the Medical Society of London, with the President, Lady BARRETT, in the chair, Dr. FRASER showed a case of erythraemia.

The patient, a married woman of 60, had for many years noticed some blueness of the face and hands during cold weather, with occasional epistaxis, but it was only after the death of her son in France eighteen months ago, which distressed her greatly, that she noticed swelling of the abdomen and other symptoms—for example, frontal headache, a feeling of fullness in the head, pain in the upper abdomen, and some loss of flesh. When admitted to the South London Hospital for Women in February, 1918, there was congestion and cyanosis of the skin of the face, ears, and neck; the mucous membrane of the mouth and tongue was purplish in colour, and the conjunctivae were injected; there was discoloration of the forearms and hands, and some dilatation of the veins of the legs. The arteries were thickened, the blood pressure measured 128 mm. of mercury; the heart was normal. A blood examination showed: Red blood cells 9,510,000, and white blood cells 30,000 per c.mm.; haemoglobin 130 per cent.; colour index 0.7. Differential count gave: Polymorphonuclear cells 85.8, lymphocytes 8.5, hyaline cells 1.4, and eosinophil cells 1.5 per cent.; no abnormal cells were seen.

The liver was enlarged, the edge being palpable three inches below the costal margin in the mid-clavicular line; the spleen formed a hard, somewhat nodular mass in the left hypochondrium, extending to the level of the umbilicus. The urine contained a trace of albumin, the specific gravity was 1013 to 1018, the urea excretion was fairly good, and there was no evidence of organic kidney disease.

The case was treated with calomel and saline aperients and a somewhat restricted diet. X-ray treatment was applied to the spleen. Venesection was not done. The subjective symptoms had now to a great extent disappeared, the liver was smaller, and the spleen, though not much changed in size, felt less hard; the abdominal pain was relieved by a belt, and the patient was living an ordinary life with little discomfort. The last blood count showed 8,000,000 red blood cells, 13,000 white cells.

Dr. Fraser then briefly discussed the etiology and pathology of the disease.

Dr. INNES PEARSE referred to the mental improvement sometimes seen in these cases after the performance of venesection, and mentioned a case of death closely following on x-ray treatment of such a spleen.

THE DANGER OF METAL ARTICLES WORN BY RADIOLOGISTS.

In the course of a discussion at the Röntgen Society on February 4th, on the subject of protection in diagnostic work in view of the effects of scattered and secondary x rays, Dr. F. HERNAMAN-JOHNSON said that metal articles worn about the body, such as watches, rings, sock suspenders, or even coins in the pocket, might be a source of danger while working on x rays if the protection arrangements of the tube and couch were imperfect. Otherwise, given adequate protection of the apparatus, the only part for which the radiologist need feel concern, or which he need protect by body armour, was the hand used in examination. Dr. J. METCALFE gave some details from his own

experience. He said that he had been accustomed to wear a silver watch on his wrist under his lead-rubber glove, while doing x-ray work, and an ulcer had developed, corresponding in size and position to the watch. It proved to be an x-ray burn; it was curious that the leather strap of the watch which came between the metal and the skin was not sufficient to protect the skin from burning. He had also had trouble from burns developing on both legs under nickel suspenders attached to the socks. He thought it probable that if metals of higher atomic weight were used trouble would not arise. Dr. N. S. FINZI expressed doubt as to whether the burn on the wrist could be due to secondary radiation, because he believed the secondary rays from silver would be completely absorbed by less than the 2 or 3 mm. of leather between the watch and the skin, but Dr. HERNAMAN-JOHNSON said that by photographic experiment he had proved that the secondary x rays produced from silver had an effective therapeutic range of 1½ cm. in the body (or in water), and experiments carried out by the ionic methods showed that the range was even greater; he did not believe that the leather would wholly absorb them.

Reviews.

CRIME AND CRIMINALS.

DR. MERCIER has embodied in his new book, *Crime and Criminals*, the results of his lifelong study of the subject. His early writings on this and cognate subjects—psychology, conduct, responsibility, and insanity—which to his mind are all bound up together, have been illuminating, and have shed new light upon aspects of the human mind and of its operation in the individual in his personal and social relationships. For this new book Dr. Mercier has been awarded the Swiney Prize—a distinction now twice obtained by him for works on criminal jurisprudence—in itself a high tribute to his ability to deal with the subject on which he now writes.

In a short introduction by Sir Bryan Donkin, who is well acquainted with the criminal by practical experience during many years, the book is commended as "an outstanding and lasting contribution to the study of criminal jurisprudence, and as differing widely from the numerous and unsatisfactory writings on crime and criminals."

Theologians, sociologists, anthropologists, psychologists, and anthropometricians have each in turn used theories and statistics in the study of the causation of crime, have claimed the criminal for their own, and laid down laws for his reformation, deterrence, segregation, or extinction. Dr. Mercier will have none of these. He sweeps aside their theories and their statistics, and, surveying the field of crime and criminality from the pedestal of common sense, declares crime to be merely a matter of conduct, reduces its votary to the category of an ordinary human being, and ascribes all his lapses, occasional or habitual, from the path of rectitude to deviation from the standard laid down by all civilized communities. The foundations of this standard are set on the basis of custom, religion, and social-protective law.

Dr. Mercier uses the term "crime" in a comprehensive sense and not in the more narrow sense of some writers on "criminology," who would limit its application to the more serious and indelible class of offence, and he includes in the term "criminal" all offenders against the law.

His first postulate is that "crime is merely a form of conduct, and therefore is subject to the usual laws regulating conduct, is marked by the characters of conduct, and is analysable into the elements into which all conduct can be analysed." He then proceeds to argue that crime, as well as all other varieties of conduct, is a form of action, and that all action—criminal and non-criminal—is due to the influence of two factors, the one inherent in the constitution of the individual, and the other dependent upon external circumstances and surroundings—the first factor internal or temperamental, the second external or environmental. In discussing these two factors Dr. Mercier, with his customary close, cogent, and incisive reasoning, sets out to show that all action by the individual is

prompted by instinct and guided by reason, and that the internal factor is alike in no two persons, and is modified in strength and degree by hereditary predisposition and intellectual capacity, by powers of self-restraint, and by formed habits. The external factor in the production of crime is opportunity or temptation.

From these two factors of conduct Dr. Mercier evolves his theory of crime. Certain laws to regulate conduct having been laid down by society, the offender against these laws becomes a criminal. His crime may be a petty offence against some municipal by-law, or it may be theft, forgery, or murder. All men are potential criminals, and if one man in certain circumstances commits a crime and another does not there must be something in the nature or experience of the two persons to account for their difference in conduct. In Dr. Mercier's opinion, this difference is quantitative not qualitative. All men have certain internal qualities of mind. Their mentality is composed of the primary compartments of Desire, Intellect, Feeling, Will, and Memory, and it is to the predominance of one or more of these qualities of mind in different individuals that deviations from, or continuance in, the path of rectitude results. In those with better balanced minds, Desire—which with its antithesis, Aversion, is the root cause of criminal actions—is kept within bounds by the other faculties, and self-control and self-denial counterbalance and render ineffective the instinctive promptings to offend when temptation and opportunity offer. In those with less well-balanced minds selfishness and self-indulgence are the predominating factors. They cannot or will not control the desires, emotions, and passions, and, given favourable opportunity, an offence results. "Each man has his breaking point. This breaking strain varies in different people, and in the same person is different for different temptations, but every one has his breaking strain in some direction or other, and if in this direction he is tempted beyond his strength he will fall." "There but for the grace of God goes Richard Baxter." "But for the absence of sufficient temptation every man is a criminal." This, shortly, is Dr. Mercier's explanation of the cause and origin of criminal conduct.

In applying his deductive reasoning to the individual offender Dr. Mercier divides criminals into two classes, his test being their temperamental tendency to succumb to temptation, according, first, to the ease with which they succumb, and secondly, to the kind of temptation to which they are most fallible.

He whose breaking point is low, and who consequently will easily succumb to temptation, will frequently succumb and become an habitual criminal. He whose breaking point is relatively high, or whose low breaking point is in a region not much exposed to temptation, will seldom succumb, and if he becomes a criminal at all, will be only an occasional criminal.

This is an entirely common-sense view, and affords a valid explanation of so-called criminal tendencies and the "criminal diathesis." If Dr. Mercier's reasoning be sound—and it will not be easy to prove it erroneous—it sweeps aside the doctrinaire teaching of the various schools of criminology, whether they ascribe the genesis of the criminal to purely hereditary causes, to defective mind or body, to antisocial proclivities, to improper early environment, or to Divine wrath.

That certain of these factors do take a part in the formation of the criminal Dr. Mercier admits, but that the individual's mode of life depends entirely on any one of these he denies. Temptation is held to be a very potent factor in the commission of crime of any kind, and previous writers on the subject, it is contended, have not attached sufficient importance to this factor. Dr. Mercier recognizes two classes of the habitual criminal—the ordinary oft-convicted criminal who leads a life of crime but is to be considered fully responsible, and the moral imbecile, who at an early age deviates into crime, who is mentally defective, and has not the will power to organize his life in a normal manner or to settle down to steady honest work. For him there is no hope of reform. Institutional life is best for him, and this, it is to be expected, will soon be arranged under the Mental Deficiency Act.

For the confirmed ordinary criminals—men who do not try to avoid crime, whose breaking point is low in the presence of temptation and opportunity, and whose selfishness and aversion from honest labour lead them on the line of least resistance, gamblers on the chance of escaping

Crime and Criminals. Being the Jurisprudence of Crime—Medical, Biological, and Psychological. By Charles Mercier, M.D., F.R.C.P., F.R.C.S. London: University of London Press, Limited, 1918. (Demy 8vo, pp. xvii + 291. 10s. 6d. net.)

punishment and lured by the desire for easy gain—for these hope of reformation is small: preventive detention for a period of years is the only means of ridding society of their presence, and of giving them a fair chance of reformation. If they can be caught young there is greater hope, as in many such instances want of moral training and bad associations and companionships contribute to their character and conduct. To meet their cases detention in a Borstal institution for a period has been found effective. In many instances they have made good.

It is to the successful working of these three institutions—mental deficiency institutions, preventive detention prisons, and Borstal institutions—that we must look in the future for a decrease in crime. All of these owe their initiation to the policy of the chairman of the Prison Commission and his board, among whom the past and present medical members have been prominent.

Into other sections of Dr. Mercier's most interesting and instructive volume space will not permit us to enter. His classification of crime is new, based as it is on international, state, private, and family or racial crimes. The three chapters devoted to this subject are deeply interesting, and will well repay perusal. The book is epoch-making in many respects, and can be read with both pleasure and profit. It is an intellectual treat as well as a closely reasoned scientific treatise, and both from a literary and an educational point of view it is a work of very high order.

NOTES ON BOOKS.

WE doubt whether there exists in any country an annual so compact and comprehensive as *Whitaker's Almanack*.² The new edition for 1919 appears later than usual, but through this delay the editor has been able to bring some of the information down to a late date. There are few things more difficult than to recall the facts of recent history, and even in a matter of such overwhelming interest as the war it is not easy to set in order at short notice the sequence of events. Therefore we may give praise to the diary of the war, which occupies some twenty pages of this volume. As is the custom, a certain number of special articles on topics of the day are inserted. There is an innovation in the shape of two maps, one showing the racial divisions of Europe and the other the roads, rivers, and cities of Mesopotamia. The volume has again increased in size, and for this reason and because of the increased cost of production the price has been raised, a result which appears to distress its editor as it certainly will its purchasers.

*The New Hazell Annual and Almanack for 1919*³ has been edited by Mr. T. A. INGRAM, M.A., LL.D., and is published as one of the Oxford University Press publications. It is compiled on lines similar to its rival, but has certain characters of its own. In the first place the print as a rule is larger, there are fuller data with regard to secondary education, and very many useful particulars with regard to pensions, and a series of maps, including one showing "how the Germans were pushed" during the operations recorded by Field-Marshal Haig in his historical dispatch of last December.

² London: 12, Warwick Lane, E.C. (6s. net.)

³ London: Henry Frowde, and Hodder and Stoughton, 1919. Thirty-fourth year of issue. (Crown 8vo, pp. 996 + liv. 6s.)

EXTENSION OF INSTITUTIONAL MEDICAL SERVICES.

WE have received from Dr. J. Middleton Martin, county medical officer of health for Gloucestershire, a memorandum on institutional services, written for the information of the various bodies in the county concerned with these matters. Dr. Martin begins with the proposition, with which few will disagree, that the facilities for institutional treatment are most inadequately distributed and do not effectively provide for the needs of the community. This shortage has become more acute at the present time for various reasons, such as the difficulty in providing special treatment for disabled ex-service men and for persons suffering from venereal disease. One way of overcoming the difficulty would be the development of a series of special services for each purpose somewhat on the lines of a tuberculosis scheme. Against this is the fact that separate schemes with separate staffs in the same area would not be economical.

Dr. Martin has excluded the consideration of domiciliary treatment from his memorandum. Assuming that some extensions of institutional treatment, including that for out-patients, are likely to take place at once, and that further extensions will probably come in the near future, Dr. Martin contrasts the alternative two lines of development. Many will agree with him in opposing the creation of a new organization in water-tight compartments for the treatment of specified ailments, or of special groups of patients. Dealing with the argument that *ad hoc* institutions are necessary in order that specialists might attend them, he agrees that specialists will form an essential part of the plan which he favours—that is, the development of existing institutions—but holds that their place would be in the special institutions, since the great bulk of cases do not require specialist treatment. Here the experience of the tuberculosis dispensaries is valuable. A large part of the work of a tuberculosis officer has proved to be general consultant work in a wide variety of cases presenting symptoms which might be due to tuberculosis, but which are often due to other conditions. In any case, therefore, a medical man attending at *ad hoc* clinics must necessarily have had a wide training.

Thus, as an alternative to the building up of a system competing with existing arrangements, Dr. Martin advocates an extension of the present facilities for institutional treatment, so that they may provide adequately for the whole of the areas they are supposed to serve, and the scheme he suggests is briefly as follows: In the first place out-stations should be opened in connexion with each hospital in all populous parts—in fact, a series of "forward" out-patient departments for each hospital. These out-stations would be attended by a whole-time medical practitioner of consultant standing, who would examine all the patients in consultation with the medical attendant, give such treatment as is practicable in an out-patient department, and arrange for the admission of cases needing in-patient treatment. Instead of a whole-time consultant it has been suggested that the out-stations might be run by the hospital visiting staff with the co-operation of local practitioners. Intermediate treatment would also be given at the out-stations by trained masseuses, orderlies and nurses, under medical direction. One great advantage of such out-stations would be the opportunity for real consultation between the medical attendant and the consultant in cases in which this is impossible under present conditions. In the next place Dr. Martin would link up existing general and special hospitals and cottage hospitals to form a coherent system with facilities for interchange of patients when necessary. The additional beds needed could, he suggests, be found partly in existing Poor Law infirmaries, and partly by the establishment of a few special and small general hospitals.

The object of the scheme is thus to provide, with the minimum of outlay and the maximum of efficiency, co-ordinated facilities for the treatment of special cases—for example, tuberculosis, venereal disease, and conditions needing massage and other simple subsidiary surgical treatment—which could otherwise be made generally available only by the opening of a special centre for each purpose in each place, with separate staffs. The advantages that would follow the abolition of all *ad hoc* centres, and the development of a system of out-stations in connexion with each general hospital for the treatment of all conditions under a whole-time travelling consultant, are set out by Dr. Martin as follows:

1. It would be economical.
2. Existing hospitals are already the recognized centres of the best treatment given to the public.
3. General practitioners would be able to consult effectively with the hospital staff, and medical services of the community would be greatly improved from the increased facilities for the treatment of all conditions.
4. Such a scheme would not only provide for all immediate requirements for the care of ex-service men, and the treatment of tuberculosis, venereal diseases, and defects of school children, but would also fit in well with the probable developments of the future.

A resolution by the local War Pensions Committee in favour of the principle has been approved by the Gloucestershire County Council, which has generally adopted it also for a scheme of treatment of school children. The scheme has been submitted to the Govern-

ment departments concerned, and much may be learnt from a practical trial. The experiment would be watched with keen interest by all concerned in the provision of an adequate medical service, and a county is a convenient area for its application.

THE HUNTERIAN FESTIVAL.

THE Hunterian Festival of the Royal College of Surgeons of England was, for the first time since the war began, celebrated with full honours on Hunter's birthday (February 14th). Sir Anthony Bowlby delivered the Hunterian oration (published at p. 205) in the afternoon, and in the evening the President and Council entertained to dinner in the library a large company, including many men distinguished in public life and in the medical profession.

After the usual loyal toasts, and after the memory of John Hunter had been honoured in silence, Sir GEORGE MAKINS, G.C.M.G., in giving the toast of "The Visitors," recalled how we had been heartened at the beginning by the forwardness of the Dominions to stand with us in this as in the South African war, and how later we had been cheered by the tangible evidence of America's co-operation afforded by the arrival in this country, at a time of great need, of American medical officers, the first of the American army actually to serve in Europe. He dwelt on the fine response of the civil profession at home to the call for officers for the medical services of the navy and army, and expressed the hope that the same spirit would be shown in the work of reconstruction. In coupling the toast with the name of Sir Arthur Stanley, Chairman of the Joint War Committee (Red Cross and St. John), and Treasurer of St. Thomas's Hospital, he deprecated any changes which would do away with the individuality of voluntary hospitals. In reply, Sir ARTHUR STANLEY spoke of the success of medical work in the field and the courage of medical officers, and Lord SANDHURST, Treasurer of St. Bartholomew's Hospital, paid a tribute to the way in which the staffs of hospitals at home had worked without stint to supply the place of members serving abroad.

General Sir WILLIAM ROBERTSON, G.C.B., who gave the toast of "The Hunterian Orator," began by saying that he doubted whether the public realized what had been achieved by the medical profession in this war. It was, he said, the one section of the community the Government allowed to do its own work in the war in its own way—a statement much applauded by the audience. How well the work was done, he said, was a matter of history. At the beginning the Army Medical Service had about 3,000 officers and about 25,000 men; those numbers had increased to 14,000 officers and 140,000 men, so that the R.A.M.C. had become larger than the old British Expeditionary Force of 1914. But the work had entailed large sacrifices. The pecuniary sacrifices were not yet at an end, for those who had served so long abroad would not easily re-establish themselves in practice; moreover, at least a thousand medical officers had given not only their work and their prospects, but their lives. The work of the R.A.M.C. had been wonderfully efficient, and Sir Anthony Bowlby, who had gone out to France within a month of the beginning, had a large share in that result; he had seen Sir Anthony Bowlby in those early days going his round in all weathers and circumstances, visiting the dressing posts and casualty clearing stations, serving, through his tact, by his skill, and above all by his humanity, as an essential link between the regular officers and the large number of temporary officers who had come in to make the medical machine efficient.

Sir ANTHONY BOWLBY said that there was no one from whom the medical service was more gratified to receive praise than Sir William Robertson. It must be remembered that the good health of the army was based upon and largely due to the splendid supplies of food and clothing, and for these Sir William Robertson was to be thanked, for he had been the Quartermaster-General at the War Office before the war, and it was as Quartermaster-General that he went to France with the original British Expeditionary Force in August, 1914. That force was one that held a very special place in the minds of the English people. The country was properly proud of the deeds of its navy and army, of the swooping advances in Mesopotamia and Palestine; of the thrust

on the Italian front which broke the foundations of the Austrian line on the Piave; of our splendid leader—Sir Douglas Haig—in France, and of the determination and gallantry of the troops in the great advance which began there on August 8th. But not only was there pride in the feeling towards the old Expeditionary Force of 1914, there were also feelings of gratitude and almost of affection. These men had stood fast at Mons, had turned so fiercely upon their pursuers at Le Cateau that all the heart was taken out of the German advance, had stood in the breach at Ypres and held fast the keys of the Channel Ports. Those deeds were done by the troops of the old "regular army," whose extraordinary skill with the rifle was only equalled by the stoutness of their hearts. But it should be remembered that with these regular troops were a few hundred civilian officers—the only civilian group with this force—the civilian medical officers who had joined as soon as ever war was declared. It was their great good fortune to share in the work of those eventful days, and the Royal College of Surgeons should never forget that its Members and Fellows played their part in the great events of that time. Wars were naturally associated with the making of enemies, but he preferred to remember only the making of friends. Many friendships were made between the civilians and the regulars in all ranks of the armies, and especially, as far as the medical profession was concerned, between the civilian medical officers and those of the army medical service. But the most important friendships of all were those between the Mother Country and the Colonies and United States. Men had come to know each other in camps and billets in a way which was only possible in war. They had learnt more of each other's ways of living, outlook on life, and ideals than could be learnt in a hundred years of peace. However much the army was indebted to the Dominions for fighting men, the medical services were at least equally indebted to them for their work in all medical units. Nothing had ever given him greater satisfaction than the arrangements he had been able to make, in conjunction with Sir Arthur Sloggett and the President, for the battle of Passchendaele. The very best of the Dominion surgeons and of the surgical talent of the United States met and worked there in the most complete harmony with the surgeons of Great Britain, and the thanks of the whole British army were due to them.

The toast of "The President" was given by the LORD MAYOR OF LONDON and acknowledged in a few words by Sir GEORGE MAKINS.

CONFERENCE ON TUBERCULOSIS.

A CONFERENCE of tuberculosis officers from all parts of the United Kingdom, called by the Tuberculosis Society, was held on February 15th, at the house of the Royal Society of Medicine, to consider a scheme for the national prevention and treatment of tuberculosis.

Dr. HALLIDAY SUTHERLAND, who presided, said that since 1914 the death-rate from pulmonary tuberculosis in England and Wales had risen 12 per cent. This proved that existing measures against the disease had failed. Schemes which had seemed admirable in theory had failed in practice, and even broad principles accepted by experts had not been enforced generally throughout the country. Under present conditions the failure of sanatoriums was almost inevitable; there were more patients than beds, and the average period of treatment was not sufficient for cure. The success or failure of the best planned schemes depended, he considered, upon the clinical tuberculosis officer; but the present salaries and prospects of tuberculosis officers were not likely to induce the best qualified men to devote their life to this work. A special tuberculosis service was needed, and the position of tuberculosis officers must be improved.

The conference then proceeded to consider the draft scheme for a tuberculosis service. In its final form—which will be submitted by a deputation to the Prime Minister or to the Minister responsible for the setting up of a Ministry of Health—the scheme advocates the creation of a special department of the Ministry of Health, in England, Scotland, Ireland, and Wales, for the prevention and treatment of tuberculosis. It proposes that the personnel of these departments should include Commissioners for each part of the United Kingdom, advised

by a committee in each country representing medicine, the public health service, local authorities, the Ministry of Pensions, trade unions, friendly societies, and other organizations interested in social welfare. The department of tuberculosis would undertake the following duties:

- (a) To be responsible for general administrative measures against tuberculosis in the countries concerned.
- (b) To be responsible for statistics relating to the disease, and to furnish an annual report as to the results of all forms of treatment.
- (c) To suggest, advise, direct, and if necessary finance, schemes of after-care and employment of tuberculous patients.
- (d) To direct, finance, and supervise an educational programme.
- (e) To direct and finance research work in relation to the disease; and
- (f) To study housing and conditions of work in relation to the incidence of tuberculosis, and to promote legislation dealing with this matter.

The scheme also provides for the appointment of deputy commissioners of tuberculosis, responsible for administrative areas, with tuberculosis officers acting as administrative and supervising clinical officers, and directly advising the local authorities regarding the prevention and treatment of tuberculosis in each district. A tuberculosis officer, it is urged, should have the help of assistants, nurses, and trained health visitors.

MEDICAL MEMBERS OF PARLIAMENT.

DINNER GIVEN BY THE MEDICAL PARLIAMENTARY COMMITTEE.

A DINNER to Dr. Addison, President of the Local Government Board, and to the medical Members of Parliament was given at the Café Royal, on February 12th, by the Medical Parliamentary Committee, Sir WATSON CHEYNE, M.P., presiding. Nine medical members of the new House of Commons were present. Before the toasts were submitted, Dr. ARTHUR LATHAM stated that the Medical Parliamentary Committee was a temporary body formed merely for the purpose of considering how the views of the medical profession on medico-political questions could be placed before the public.

Dr. SQUIRE SPRIGGE, in proposing "The Medical Members of Parliament," dwelt upon the responsibility and opportunity of a man who was at once a member of the medical profession and of the House of Commons. Medical members of Parliament did not go there to represent medicine in the exclusive professional sense; they were members of Parliament first and medical men afterwards.

Dr. ADDISON, in responding, agreed with this definition of the function of a medical member of Parliament, though, on a large view, the public and professional interests were identical. Medical men until lately had been curiously unware of the political significance either of their own profession or of current events. But it was now becoming clear that, whether they wished it or not, they would have to take a more public part in affairs. The reason why existing bodies did not satisfactorily represent the profession in this public sense was that those bodies had been designed and developed for quite other purposes. Now that the need had arisen, however, he was very hopeful that they would find their way to some working organization. He did not think the medical profession would ever hold one view, and for his own part he hoped it would not. The process would be one of compromise, adjustment, and finally agreement, but an agreement different from the policy of any of the parties who originally started negotiations. The Ministry of Health Bill proposed to set up advisory or consultative councils, and he was determined that these should be a reality. In the absence of one medical organization which could be recognized as speaking for all, it would be the business of his department to ask the different organizations to offer suggestions and advice. Good advice, not the representation of interests, was wanted. He had been asked whether it was possible to substitute "shall" for "may" in that part of the bill which dealt with the establishment of the medical advisory council. But the form of Acts of Parliament was not that of prescription; the form was that "His Majesty may," and as this particular matter related to Orders in Council, it could be taken that if Parliament put in "may" it meant that His Majesty "would." He hoped that all who came in to advise would take a wide view of their functions, and would regard prevention of disease as better than its treatment. Out of this scheme of advisory committees a sort of cabinet of consultation, representing

all the different sections, might gradually evolve to give form to the settled health policy for the nation.

Sir BERTRAND DAWSON, in proposing "The Unity of the Profession," said that lack of unity was a characteristic of the profession far back in its history. In *Shakespeare's England* it was stated that in the year 1576 two members were censured by the Court of Barber-Surgeons for using scoffing words and jests at one another; and again, in the year 1577, other members were called to account that they, contrary to order and the good and wholesome rules of the house, misused each other and fought in the fields together. Allowing for certain changes of manners, that might be regarded as an Elizabethan meeting of the profession at Wigmore Hall. On that very recent occasion they found not only two sets of earnest-minded people contending with one another, but a third party intervening in the spirit of the Irishman who inquired whether this was a private quarrel or whether anybody might join in. While the medical profession had not yet learnt the discipline of unity, a situation was developing in which professional unity was urgently needed. But a profession as yet untrained in collective action could not be moulded suddenly into a perfect political cohesion; the conversion must be gradual. Medical men were still in the habit of leaving their organizations for reasons which amazed the politician, who was accustomed every day of his life to the arts of compromise and the reconciliation of differences. A cabinet of politicians had an almost archiepiscopal aptitude for making a negative into a positive, but the profession had not so learned the lesson. He disliked to hear the accusation levelled against any body which was trying to help them in this emergency that its character was unrepresentative, although in the parliamentary sense that might be true. Organizations should not be tested in this case by their constitutional correctness, but by their capacity to do good work. He paid a tribute to the British Medical Association for its foresight in working on the Ministry of Health problem for over a year before the proposals matured, and for bringing into the scope of its conferences other bodies with which it had attained unanimity. He hoped that this work would be continued, and, as he understood, it was the desire of his friends and colleagues who were present that such other bodies should have increasing strength. He hoped that in time the Medical Parliamentary Committee would evolve from a rough and ready and half-crystallized organization into a more constitutional and methodical one. The advisory committees would act as a stimulus to cohesion. In them there would be a body of medical men, carefully chosen by the best method possible in the circumstances, and having the right of access to the Minister.

In a brief reply Mr. E. B. TURNER made a strong plea for team work, for union in the ranks, for willingness on the part of all the different organizations to work together in the spirit of give and take. The unity of the profession was what he had striven for during the eight years since he entered the jungle of medical politics. Colonel HURRY FENWICK, who also responded, expressed the belief that the advisory councils would go far to achieve the unity they desired. Sir JAMES GALLOWAY, who found what he regarded as an unjustifiable depression prevailing among the preceding speakers, instanced the Royal Society of Medicine as an example of fusion which might give encouragement even in the sphere of medical politics. An enlivening speech was delivered by Dr. E. H. STANCOMB, who, in proposing the Chairman's health, made play with the fact that Sir Watson Cheyne had gone from the silent Navy to the "disgraceful Sabbath-breaking of Wigmore Hall," but having got into medical politics he would have to remain in. Great tasks of peace awaited the profession, and medical men should not only give their services to the community, but should awaken in that community a sense of the corporate value of the medical profession.

Sir WATSON CHEYNE was disposed to think that the present unrest and suspicion in the profession was a passing phase due to reaction after the war. He had accepted the chairmanship of the Medical Parliamentary Committee because he found that while it had no political policy of its own to further, it represented all sorts of medical opinion, and was willing to collect and correlate the information of which he and his fellow members in Parliament stood so often in need.

The hospital of the University of Pennsylvania has resolved that women shall be eligible as internes. The faculty of the School of Medicine of the Western Reserve University has decided to admit women as students next year.

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REFRESHER COURSES.

IN a recent article on the overfull medical curriculum it was suggested that a review of the situation led to the conclusion that the curriculum must not only be shortened at the beginning by getting the preliminary sciences taught at the secondary schools, but that it must also be extended after graduation. The term "post-graduate instruction" is not elegant, and has come to be used in a double sense. Originally, and still most commonly, it signifies a scheme affording to those who have been engaged in practice for some years facilities for bringing their general knowledge and practice up to date, or for making themselves acquainted with the theory and practice of a special department. The term has recently been applied to the holding of resident hospital appointments immediately after graduation. It is the ambition of every young medical graduate worth his salt to hold a resident appointment in his own teaching hospital, or failing this in some other general hospital, but its realization is often beyond his reach because there are not enough appointments of this kind to go round. Dr. Addison, in introducing the Ministry of Health Bill last November, said that the Government considered it urgent to arrange that all the services relating to the care and treatment of the sick and infirm should cease to be administered as part of the Poor Law, and should become part of the general health service of the country. We make no doubt that he will be anxious to ensure that the change foreshadowed shall conduce to the improvement of medical education, and that resident appointments in what are now the large city Poor Law infirmaries will be thrown open to graduates from the schools. Other valuable opportunities in this stage are afforded by appointments, some resident, in the special hospitals, and in laboratories perhaps with the help of a research scholarship. If the teaching of the clinical subjects is to be organized on the system outlined in the memorandum of the Board of Education more and better opportunities for practical training on the scientific side will doubtless become open to the young graduate.

But this paulo-post-graduate training—already to a very considerable extent, but not completely, provided in this country—is not what is ordinarily understood by the term post-graduate instruction—namely, the refreshment of knowledge desired by one who has been in independent practice for some years. The distinction is important. The one man has modern instruction but little experience, the other considerable general experience but no modern instruction. The one must extend his training into new departments; the other seeks to make himself acquainted with new knowledge and method in the diagnosis, treatment, and prevention of diseases with which he has long been in practical contact. It is doubtful whether the paulo-post-graduate training needed by the young graduate and the refresher courses for the elder graduate can, with due regard to economy of the time of both sets of graduates, profitably be carried out in the same hospital and with the same staffs.

There are many opinions on the best way of providing what we have for convenience called refresher courses, but we suspect that the plan of a single graduate hospital school will not work in London or any other populous centre. The Royal Commission on University Education in London (1911) recommended that nothing should be done until "Medical Colleges of sufficient size and number to provide for all the university medical students in London had been established." Then, the Commission said, "there would be no objection to organizing a hospital of smaller size as a post-graduate school for the reception, partly of graduates from abroad and the colonies, and partly of students from the other university hospitals who desired to pursue their studies further."

There seem to be two fallacies here. The first is that only from the Dominions and abroad would graduates come to such a school: facilities are desired probably quite as much by graduates at home. The second is that what is wanted is a single hospital. What is wanted is a graduate school organization, and in that respect the emergency scheme of the Fellowship of Medicine seems to be on the right line. A graduate who has been some years in practice wants, as a rule, either to do laboratory work, or to give such time as he has to following some specialty or perhaps the practice and teaching of some individual by whose reputation he is attracted. The memorandum of the Board of Education seems to recognize the truth of this contention for the paulo-post-graduate without, however, stating quite as clearly as would have been desirable its application to the elder graduate.

THE EPIDEMIOLOGY OF PLAGUE.

AN interesting report entitled "Twenty years of plague in India, with special reference to the outbreak of 1917-18," has recently been presented to the Government of India by Major Norman White, C.I.E., I.M.S. In it the history of plague in the several provinces of British India since 1896 is reviewed, and attention specially directed to the relation between plague mortality and humidity, a relation which helps to account for the severe visitation of 1917-18. Major White concludes that, notwithstanding the untoward events of last year, the general trend is in favour of the view that plague is a declining force, probably, he thinks, owing to increasing immunity amongst the rodent population.

Although more general attention has been attracted by experimental work—such, for instance, as the brilliant demonstration by Dr. C. J. Martin and Mr. Bacot of the Lister Institute of the exact mechanism by which the flea infects its host with plague—many additions to our knowledge of the more prosaic but equally important subject of epidemiology have been made during the last ten years. The late Major Lamb was the first to undertake an adequately documented study of the distribution of epidemics and their recurrences in villages. He and Mr. Major Greenwood of the Lister Institute established a differentiation between villages of large size liable to recurrent attacks and smaller villages not so distinguished, and they also effected a regional classification. Subsequently Greenwood provided a statistical proof of the connexion between means of transit and the recurrence of epidemics (a connexion suggested by earlier work), and, from an elaborate analysis of the Punjab evidence, concluded that village plagues were fed by importation from towns; that the chance of infection varied as the size and, in villages of the same

size, as proximity to means of transit, a first requisite of epidemic prevalence being the realization of certain conditions of temperature and humidity; that the severity of the epidemic when engendered depended upon the date of importation and the size of the village, small villages being less likely to become infected, but, if infected, suffering more severely than large ones; and, lastly, that in addition to these general factors, local conditions constant for any one epidemic, but varying from epidemic to epidemic, raised or lowered the mortality rates of contiguous hamlets in a remarkable way. Evidence of greater immunity against plague in rats from severely plague-stricken areas was furnished in a report issued by the Advisory Committee in 1913. The factor of humidity was the object of special study by Majors Gloster and White in a report on the Agra and Oudh plague of 1911-12 which appeared in 1917, and they reached the conclusion that the association of unusual humidity during the winter months in certain districts with severe epidemics was so constant a phenomenon that one might well stand to the other in the relation of cause to effect.

In a paper read before the Epidemiological Section of the Royal Society of Medicine last year, Dr. Brownlee, of the Medical Research Committee, made further contributions to the subject. He showed that the November humidity in many parts of India is, unlike that of this country, highly correlated with the humidity of subsequent months, even with of March, and that the logarithm of the size of the epidemic was linearly related, to a first approximation, with the humidity. Brownlee also called attention to a point not remarked by his predecessors. He found evidence of true periodicity; this he illustrated by the case of Poona, where the period was about 61.5 weeks, with the result that in due course the date of recurrence falls into a season of the year when weather conditions (doubtless those involved in the humidity factor) make a serious epidemic impossible; in such circumstances another outbreak was to be expected when the period again coincided with favourable external conditions. Allied to this true periodicity was a pseudo-periodicity, the epidemic falling later and later in the year until, as before, the external conditions were unfavourable and, unless a throw-back occurred, the disease died out.

From this rapid summary it will be seen that workers attacking the subject from different angles have reached harmonious conclusions, some of which give grounds for optimism, while others should keep that optimism within limits. The concordant findings as to the relation between humidity and plague prevalence should restrain us from reflecting too gloomily upon the events of 1917-18—an exceptionally humid season. The statistics so far available for the last quarter of 1918 show a very remarkable decline even in Bombay and the Bombay presidency. It must be remembered, however, that a similar temporary fall has been noted before, and that there have been months during the last five years when the total plague mortality in Bombay was only 468, and the Central Provinces, Bengal, and Central India were, so far as was known, quite free. The evidence as to the relatively limited numbers of disseminating foci and the part played by means of transit, however, gives ground for hope that, as the standard of education rises and the purpose of sanitary measures becomes better appreciated, administrative action may be more effective. On the other hand, the possible influence of a periodic factor, perhaps representing a phase of the life-history of the organism, is a warning against drawing too confident conclusions

from a decline in mortality, such as is, we are glad to say, evident now. For all these reasons the very optimistic forecasts founded on Major White's report by some commentators in this country are too likely to be falsified. He is himself at pains to point out that the decrease in virulence, of which he finds evidence in most of the areas in India severely infected, can in no wise be attributed to increasing efficiency of antiplague measures. He does not make any very definite recommendations on which the Government can act beyond advising it to improve markets and grain stores in towns at present excessively infested by rats and to control movements of grain from and through plague-infected centres.

TAXATION OF WAR SERVICE GRATUITIES AND PENSIONS.

ON more than one occasion the Government of the day has had to meet hostile criticism of its proposals with regard to the taxation of the pay issued to officers of the army or navy. From the introduction of the first of the War Budgets to the present time it has been contended that to levy war taxation on men who have given up the emoluments of their civil calling to help their country in a more direct and perilous service was neither necessary nor just: and beginning with the comparatively small concession of a lower rate of taxation to the officer whose total income did not exceed £300, the Government proceeded to institute a new scale of rates of income tax for "service" emoluments which is now markedly below the corresponding "earned income" scale, and to a large measure thereby met—though with a lamentable lack of promptitude—the original unfairness of the uniform application of the increased rates of tax levied for war purposes.

But officers generally have been placed under another disability in the matter of taxation, equally unfair, though, since hitherto it has been of comparative infrequent occurrence, not equally appreciated by the general public or even by intelligent critics of national finance. The ruling of the Income Tax Commissioners that "gratuities" and pensions given for war service are liable to the income tax may have been legally correct, but was demonstrably unfair having regard to the nature of such payments and the reasons for which they are made. The increased importance of this question during the demobilization period has raised so much hostile and enlightened criticism that the method of the importunate widow has once more proved successful, and the Government has publicly stated that the Chancellor of the Exchequer will seek power in the next Finance Bill to regard gratuities made to officers on discharge as free of income tax as from the beginning of the war, and to regard wound and disability pensions as not being liable to taxation as from April 5th, 1918.

The question is, of course, a general one, but that the medical profession is noticeably affected by this change is clear from a parliamentary answer given on the same day as the announcement referred to above was made. In that answer it was stated that since the signing of the Armistice 1,446 doctors had returned to civil life, while another 1,235 had been noted for release, and would return as and when their services could be spared. But there is one phase of this question which especially concerns the medical profession: this is, whether the new rule will apply to the annual gratuities of temporary R.A.M.C. officers as well as to the gratuities paid to Territorial medical

officers on demobilization, who seem clearly to come within the somewhat general terms of the Government statement. We see no reason why these two classes of gratuity should not receive precisely similar treatment, and we trust that the Government will lose no time in making a clear statement on the point.

In dealing with the wound and disability pensions Mr. Baldwin, speaking on behalf of the Chancellor of the Exchequer, made it clear that the ground on which the objection to taxing the pensions had succeeded was that they were in the nature of compensation for injury received and analogous to awards under the Workmen's Compensation Act, which are not taxable, but he did not state the reason for the Government's conversion on the question of the gratuities. His colleague, the Secretary of War, however, in another parliamentary answer, appears to have supplied the omission, when he explained that "the gratuity to regular officers is less than that to temporary officers, because the latter have generally to re-equip themselves for a fresh start in civil life," thereby admitting that the gratuity is, in part if not entirely, paid not as a bonus or addition to income, but as a grant towards the cost of starting or restarting those professional activities on which the future income of the recipient depends. On this ground, and in accordance with the desire to comply with public sentiment to which Mr. Baldwin referred, there can, we suggest, be no doubt but that the relief from taxation should be extended to all gratuities whether paid annually or in a single sum; the time and manner of payment seem to be entirely irrelevant to the merits of the question.

Mr. Baldwin declined to state definitely the precise method by which and the time when the necessary readjustments of the income tax deductions would be made, but hinted that although legislative sanction could not be obtained for some months some attempt would be made to deal with the question departmentally. It may therefore be some time before individual officers will receive any notification of what adjustment will be made in their respective accounts, but we suggest that the Government should immediately consider the desirability of issuing as early as possible a detailed statement of their new proposals and the methods by which they will be carried out, either through the public press or to all individuals who are or may be affected.

THE CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION IN APRIL.

THE names of the large number of distinguished members of the profession who have given their support to the Clinical Meeting of the British Medical Association next April by joining the General Committee are printed in the SUPPLEMENT. The meetings of the three sections—Medicine, Surgery, and Preventive Medicine and Pathology—will be held on the mornings of Wednesday, April 9th, Thursday, April 10th, and Friday, April 11th, in the Imperial College of Science and Technology, which the Rector, Sir Alfred Keogh, has very readily placed at the disposal of the Association. The programme of the sections, which is still subject to revision, is also printed in the SUPPLEMENT. It will be seen that the subjects selected are all of immediate interest and raise civil medical problems upon which the experience gained during the war will throw valuable light. On the second day, for instance, there will be a joint discussion in the Sections of Medicine and Preventive Medicine and Pathology, on influenza, in which the epidemics in France and in England will be compared and the etiology and epidemiology of the disease discussed.

In the Section of Medicine there will be, on the first day, a discussion on war neuroses, introduced by Lieut.-Colonel F. W. Mott, and on the third day, on the newer methods in the prognosis of cardio-vascular infections, introduced by Dr. Thomas Lewis, F.R.S. There will also be a discussion on venereal diseases, introduced by Colonel L. W. Harrison, who will in addition give demonstrations at the Military Hospital for Venereal Diseases, Rochester Row. In the Section of Preventive Medicine and Pathology there will be discussions on the dysenteries, introduced by Lieut.-Colonel L. Dudgeon, C.M.G., and on malaria, introduced by Lieut.-Colonel S. P. James, I.M.S., one of the expert officers now employed by the Local Government Board to advise as to the prevention of the disease in this country. In the Section of Surgery the subject of gunshot wounds of the chest will be introduced by Colonel T. R. Elliott, F.R.S., on the medical side, and by Colonel G. E. Gask, C.M.G., on the surgical side. One of the special features of the meeting will be the number of demonstrations, and two of the subjects selected in this Section lend themselves particularly well to this method; the one is wound shock, the theory of which will be discussed by Professor Bayliss, F.R.S., and Dr. H. H. Dale, F.R.S., while demonstrations of methods actually used in France will be given. The other discussion, on reconstructive surgery, to be introduced by Major R. C. Elmslie, will be illustrated by a series of demonstrations at the Military (Orthopaedic) Hospital, Shepherd's Bush, and elsewhere. At the Royal College of Surgeons of England three special demonstrations of the War Collection will be given, the first by the President of the College, Sir George Makins, G.C.M.G., on injuries of arteries; the second, by Professor Arthur Keith, F.R.S., on fractures of the skull; and the third, by Mr. Culbert Wallace, C.B., C.M.G., on abdominal injuries. On the evening of Tuesday, April 8th, a *conversazione*, arranged by the Metropolitan Counties Branch, will be held in the Guildhall of the City of London, kindly lent for the occasion by the Lord Mayor. Those attending will be received by the President of the British Medical Association, Sir Clifford Allbutt, K.C.B., F.R.S. On the evening of Wednesday, April 9th, the Royal Society of Medicine will give an "at home" at which members will be received by the president of the society, Sir Humphry D. Rolleston, K.C.B. On Thursday there will be a dinner at the Connaught Rooms. The success of the meeting seems to be assured so far as interesting scientific work and agreeable social opportunities for making or renewing friendships are concerned. The only difficulty will be the matter of accommodation for visitors. Hotels in London are, and have been for some months, very full, and members proposing to attend the meeting are advised to make early arrangements. It is desirable to secure accommodation at once, and it may be necessary to pay a deposit at the time of ordering rooms. A certain amount of private hospitality will, it is anticipated, be offered.

UNIVERSITY HOSPITAL SCHOOLS FOR LONDON.

It seems probable that we are about to see changes in the machinery of medical education, especially in London, which it is believed will increase the scientific character of the teaching in clinical subjects. The Royal Commission on University Education in London recommended the creation of university medical schools, and suggested three such schools, each having at least three whole-time professors in the three main subjects—medicine, surgery, and obstetrics—with, in addition, when circumstances made it appropriate, chairs in special subjects, such as pediatrics, neurology, psychiatry, and so on. A whole-time professor would be at the head of a "hospital unit," would have the control of wards, and of an out-patient department; he would be provided with assistants nominated by him, to assist him in carrying on the research, and would have laboratory accommodation in close proximity

to the wards not only for the service of the wards but also for research. The assistants would also be engaged in teaching, and it was contemplated that members of the profession in active practice should be invited to co-operate. The scheme was to a large extent imitative, and was clearly influenced not only by the method of German universities, but also by the movement which eventually resulted in the appointment of whole-time professors in the Johns Hopkins Hospital, Baltimore. It was feared that if the imitation were too slavish, the essentially practical clinical training in English schools, which has made the English doctor a better man than the German, would be lost, but the Board of Education, which is now taking a definite interest in the matter, seems to be fully aware of this danger. That Board already, as is well known, makes grants to the majority of medical schools, and it is understood to be willing to increase these grants on condition that any scheme adopted shall provide for the appointment and adequate remuneration of professors of clinical medicine, surgery, and obstetrics, and, where advisable, of other subjects, who would devote the greater part of their time to teaching and research. While it would not be advisable wholly to debar such a professor from private practice—success in which is a valuable asset in teaching work—he should be prepared, so long as he continues to be the head of a clinical department, to be primarily a teacher, and only in a minor degree a practising consultant; that is to say, his first and predominant interest would be the university. The Board in its memorandum suggested that the professors should have the control of wards (50 to 100 beds) and an out-patient department, and ample laboratory accommodation for research in clinical pathology, including cardio-respiratory work, bacteriology, microscopy, and x-ray and electrical work. Another condition was that the professors should have an adequate staff of teachers and assistants of university status, properly paid and graded, consisting of men, some whole-time and some part-time engaged in practice, sufficient in number to permit of small clinics and the representation of the various branches of medicine or surgery, all of which cannot be taught by a single professor. Finally it was laid down that an appropriate arrangement must provide for the close and integral association of the laboratory method with the clinical method, and for the full exercise of the two great branches of clinical teaching which Great Britain has taught to the world—the hospital bedside teaching system and the clinical lecture-demonstration of university standard. We understand that proposals on these lines have been made by the Board, and that they are under the serious consideration of four of the chief medical schools in London. Similar proposals have been made to the provincial universities, where, however, the need for reorganization is perhaps less urgent.

FILTER-PASSING VIRUS.

In their preliminary report on the presence of a filter-passing virus in certain diseases, published in our columns on February 1st, Bradford, Bashford, and Wilson stated that they had made investigations resulting in the detection, isolation, and culture by the Noguchi method of an organism from cases of acute infective polyneuritis which produced the malady when inoculated into animals. They gave particulars showing that the same method had revealed the presence of a comparable virus in trench fever, influenza, and nephritis, and added that organisms differing from one another but belonging to the same group had been recovered by culture in mumps, measles, rose measles, and typhus. The full text of the paper by these authors on acute infective polyneuritis has now been published.¹ Sir John Rose Bradford gives a detailed description of the clinical

phenomena of acute febrile polyneuritis in man. There is often a history of an initial illness of a mild type, accompanied by headache and pain in the back, and a rise of temperature to 100° or 101° F. Then follows a period of latency of variable duration, up to a month or even six weeks. The fully declared or paralytic stage of the disease often develops suddenly; weakness in the legs is usually the first complaint, and a man may fall down on parade or even on the march, although still able to stand or even to walk with assistance. A characteristic feature is the marked degree in which the palsy affects the proximal segments of the limb. It is common to observe that the movements of the shoulder and hip are extremely weak or absent at a time when the patient can still move the fingers or toes freely. Though a group of large muscles, such as those of the hip, may be more affected than other muscles, the palsy never picks out individual muscles and is never limited even to a group of muscles. The muscles of the back, abdomen, chest, and neck are prone to be affected in all the more severe cases, so that the patients are not only unable to raise themselves, or sit up in bed, but cannot turn in bed, and often cannot raise their heads from the pillow. Facial paresis, usually bilateral, is characteristic and rarely absent. Paralysis affecting the oculomotor nerves is rare. Muscular wasting occurs only in severe and long-lasting cases. The sensory apparatus is disturbed, as indicated by pain at first and numbness and tingling in the palsied parts later. The disease seems to attack generally young men, but there was one case as old as 49. It is a fatal disease, since of the 30 cases upon which the paper is founded eight died. In two cases death took place on the fifth day, in one on the sixth, in one on the eighth, in one on the eleventh, and in one on the twentieth. Death appears to be usually brought about by respiratory embarrassment and pulmonary complications, due to palsy of the respiratory muscles, both the intercostals and the diaphragm being frequently affected. Bradford concludes that the disease is a very definite entity, due to a diffuse affection of the nervous system affecting the spinal cord, spinal ganglia, and peripheral nerves, with but slight incidence on the cortex. Bashford describes the morbid anatomy of the disease in man and in the monkey, and records its experimental production in the monkey. He amplifies the details given by Gordon Holmes in this JOURNAL (July 14th, 1917, p. 37), and adds a number of new observations. He found a gradually ascending involvement of the grey matter of the entire nervous system, the appearances pointing to a systemic poison which entered the central nervous system by way of the nerve trunks, both motor and sensory. The nature of the virus is described by Wilson in a paper which may be commended as a model of clear and precise statement, so excellently expressed as to make the details easily comprehensible to the non-expert. He isolated an organism of definite microscopical and cultural characters, cultivated it, and reproduced the disease by subdural inoculation in a monkey. The method of cultivation is described, and the results illustrated in some excellent coloured drawings by Mr. A. K. Maxwell. The method is as follows: A fragment, about the size of a pea, of sterile guinea-pig kidney is placed at the bottom of a sterile test tube, and alongside it a fragment of a similar size of the nervous tissue from the suspected case. The fragments are covered with a small quantity of a special serum agar. When this is set a special serum bouillon is added, the whole sealed with a moderately thick layer of vaseline, and the tube kept at 37° C. On the fourth or fifth day a granular haze appears in the vicinity of the nervous tissue, and about the seventh day minute semi-translucent colonies are seen on the surface of the agar, and grow rapidly. The surface colonies assume a faint yellow colour, and their upper limits become irregular. All the features are reproduced in subcultures, but the growth becomes more scanty in successive generations. No strain has been carried beyond the fifth generation, so that it would

¹ The Quarterly Journal of Medicine, vol. xii, Nos. 45 and 46, October, 1918, and January, 1919.

appear that the organism, which is an anaerobe, possesses feeble saprophytic powers. In stained specimens of cultures from five to ten days old it appears as a minute rounded, oval or kidney-shaped body, measuring 0.2 to 0.5 μ in diameter and presenting a darkly-stained rounded spot, eccentrically placed, surrounded by a narrow faintly-stained area. As the cultures become older the organisms, which are grouped in colonies, swell up, lose their selective staining, and become indefinite in outline. The general resemblance to the globoid body of poliomyelitis is discussed, but the two organisms are shown to be distinct. These observations on acute infective polyneuritis and those on the other diseases mentioned in the preliminary report published on February 1st afford much material for speculation, but Sir John Rose Bradford does not go further than to point out that the facts suggest that the virus of poliomyelitis instead of being an isolated and peculiar thing, is one member of a class of organisms which await further study. We may share Dr. Bashford's hope that a new impetus has been given to the investigation of much that still remains obscure in the diseases of the nervous system, and not only in them, but of some general infections the etiology of which has hitherto evaded investigation.

DYSENTERY PATIENTS, CONVALESCENTS, AND CARRIERS.

AN Army Council Instruction, No. 78 of 1919, dated February 1st, gives in detail the procedure to be adopted in Home Commands with regard to the treatment and disposal of convalescents from dysentery. All patients suffering or convalescent from dysentery, whether contracted in the United Kingdom or whilst serving in an Expeditionary Force, will, if fit to travel, be sent to one of thirteen selected dysentery hospitals, where they will be examined, treated, and disposed of as directed. The central dysentery hospital at Addington Park, Croydon, will provide both for the completion of convalescence, and also for the special treatment of carriers and chronic cases; it will be known as the Addington Park Military Hospital. Ordinary patients and carriers and certain cases of severe and relapsing dysentery will ultimately be transferred to the central hospital from the other twelve selected hospitals. Each of these, it is laid down, should have on its staff a competent bacteriologist and protozoologist, the laboratory in which the diagnostic work is done being either in the hospital itself or in very close proximity to it. The dysentery cases should be in charge of medical officers specially selected for their experience of, or aptitude for, the work, and as few changes as possible should be made in these appointments. Close collaboration between the clinical and laboratory staffs is regarded as of the utmost importance. Precise instructions are given for the classification and disposal of cases of bacillary and amoebic dysentery. The latter will undergo a course of specific treatment as laid down in the instructions drawn up by the War Office Committee on Dysentery. "Clinical dysentery" is recognized as a diagnosis for cases in which the specific organism cannot be demonstrated, but in which the clinical evidence is considered clear. Bacillary carriers are divided into "temporary" and "chronic." In no case should a chronic bacillary carrier be allowed to join, or rejoin, a force serving overseas. Cases classified as uncured or healthy amoebic carriers will be dealt with on the principle that specific treatment, or re-treatment, is optional, the medical officer in charge explaining fully the position to the patient, who, if he elects to be discharged while still a carrier, will be required to sign a paper stating that his condition has been explained to him, and that he has been offered and has refused a course of specific treatment. The Local Government Board will be informed of the discharge from hospital of any uncured or chronic case of dysentery (amoebic or bacillary), and any bacillary carrier. The Local Government Board, as was noted last week, made

an order, dated January 7th, 1919, making it compulsory for a medical practitioner to notify any case of dysentery (among other diseases) which he is attending professionally. The medical officer of health on becoming aware of a case of dysentery in his district is to investigate the source of the infection and take steps to prevent its spread, including, if necessary, the treatment of the patient in a suitable hospital, and to inform the Local Government Board. Further, he is empowered, if necessary, to notify the person in writing that he shall discontinue any occupation connected with the preparation or handling of food or drink for human consumption, to forbid children in the care of any such person to be sent to school, and to specify measures that must be taken with respect to cleansing, disinfection, disposal of excreta, destruction of flies, and prevention of contamination of articles of food or drink for human consumption. The M.O.H. is also empowered to give notice to the responsible manager of a business concerned with the preparation or handling of food or drink that a person employed is suspected to be a dysentery carrier, and if the suspicion is confirmed by bacteriological or protozoological examination, the M.O.H. may give notice to the manager and to the person to prevent, during a specified period, the employment of such person in the conduct of that business, or any other business concerned with the preparation or handling of food or drink for human consumption.

THE RECRUDESCENCE OF INFLUENZA.

THE surmise ventured in our last issue, that a third wave of epidemic influenza was gathering head, is unfortunately confirmed by the latest available figures. In London the smallest number of deaths attributed to influenza in any week after the beginning of the late outbreak was 33, in the week ending January 25th. In the two following weeks the numbers were 58 and 100, while for the week ending February 15th the return is 273, which has not been exceeded since December 14th. If we assume for the moment that that week (February 15th) corresponds to the week ending October 19th in its place in the cycle of epidemic evolution (in the week ending October 19th the deaths from influenza rose to 371 from 80 in the previous week), we should have reason to suppose that the third wave, although likely to cause a large number of deaths, would not reach the height of the autumn tide. Thus the autumn figures were 80, 371, 1,256, 2,458, 2,433, 1,665, 1,173, 942, 660, 332, 186, 95, 65, the last figure relating to the week ending January 4th. If, now, we express the series as percentages of the first item (the 80 deaths in the week ending October 12th), we have 100, 464, 1,570, 3,073, 3,041, 2,081, 1,473, 1,178, 825, 403, 233, 119, 81. The percentage ratio of 273 to 100 is 273, and, were the successive ratios reduced in the same proportion, we ought to have for the present series the above figures multiplied by $\frac{273}{80}$ —that is, the gross mortality of the epidemic would be 100, 273, 924, 1,808, 1,789, 1,224, 867, 693, 485, 237, 137, 70, 48, or, say, about 70 per cent. of the previous mortality. It is, however, hazardous in the extreme to make predictions of this kind, and we merely desire to point out that the present indications, although warranting caution, do not justify the alarmist attitude which, we fear, sensational articles in lay journals tend to foster. The figures for the great towns show that the wave is affecting the country as a whole, but so far the prevalence to the north of the Trent seems greater than to the south of it. The influenza figures for Scotland have not been published weekly, but we notice that the deaths from pneumonia, bronchitis, and pleurisy in the sixteen towns of Scotland for which returns are published were 275 in the week ending January 25th, 307 in the following week, and 425 in the week ending February 8th. We would remark that in drawing deductions from the death returns for respiratory affections allowance ought to be

made for the meteorological factors, so that the whole of the excess mortality must not be credited to the reigning epidemic.

THE MEDICAL WORK OF THE MINISTRY OF NATIONAL SERVICE.

WE have received the following announcement for publication: It has been agreed by the Ministers that the medical side of the Ministry of National Service shall be transferred to the Ministry of Pensions. Arrangements are now in progress to effect this transfer. The medical and secretarial staffs affected by this arrangement are at the head quarters of the Ministry of National Service and at the offices of regions and areas of the Ministry. They will continue to carry out their duties as at present under the current instructions of the Ministry of National Service. These officials will receive notice in due course of time of the arrangements proposed for their transfer. The only officers not affected by the transfer are the Chief Commissioner of Medical Services and the branch (M 4) dealing with demobilization of medical and dental officers on service with the armed forces of the Crown. These will remain as at present in the Ministry of National Service.

A COMMONS MEDICAL COMMITTEE.

A House of Commons Medical Committee has been formed to include all medical members and other members of the House of Commons interested in scientific matters akin to medicine. All the medical members, excepting the Ministers, have joined, and also Sir Philip Magnus (member for the University of London) and Sir Henry Craik (one of the members for the Scottish Universities). The chairman is Sir Watson Cheyne, and the secretary Major A. C. Farquharson, R.A.M.C. The executive committee consists of Sir William Whitla, Lieut.-Colonel Nathan Raw, R.A.M.C., and Captain Elliott, R.A.M.C. The objects of the committee are to exchange opinions so as to secure representation of agreed views on medical subjects in Parliament. The committee is open to receive representations on all such matters from the colleges and corporations, and from societies and associations, and will hold conferences when considered desirable. It will not allow itself in any way to be identified with any one particular body. The committee is to have a conference with Dr. Addison as to the Ministry of Health Bill on Monday. It has appointed a subcommittee, consisting of Colonel Nathan Raw (England), Sir Watson Cheyne (Scotland), and Sir William Whitla (Ireland), to watch the bill in its progress through the House.

THE King has been graciously pleased to approve of the appointment of Field-Marshal His Royal Highness Arthur W. P. A. Duke of Connaught and Strathearn, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., G.B.E., as Colonel in Chief of the Royal Army Medical Corps.

WE regret to record the death, in his 57th year, of Lieut.-Colonel A. M. Paterson, Professor of Anatomy in the University of Liverpool, who had held the office of Assistant Inspector of Military Orthopaedics for several years. We hope to publish a short biography in an early issue.

At the meeting of the governors of Westminster Hospital on February 18th it was decided that the question of amalgamation with another hospital should be referred to the decision of arbitrators to be appointed by King Edward's Hospital Fund for London. It seems now very probable that, should the arbitration result in recommending amalgamation, this will take place with King's College Hospital.

COLONEL A. BERTRAM SOLTAU, C.M.G., M.D., who is about to resume his duties as physician to the South Devon and East Cornwall Hospital, Plymouth, has accepted the invitation of the Minister of Pensions to act as honorary consultant to the Ministry on the effects of warfare gas poisoning and the after-care of officers and men suffering from gas poisoning. Colonel Soltau, who went to France in 1914 in command of a Territorial field ambulance, has been a consultant physician to the forces since 1916, and has had special experience in the treatment of gassed cases.

DR. ADDISON, President of the Local Government Board, has appointed Sir George Newman, K.C.B., M.D., F.R.C.P., Principal Medical Officer of the Board. Sir George Newman will for the present retain his position as Chief Medical Officer of the Board of Education and Medical Assessor to the Universities Branch of that Board. The arrangement whereby Sir George Newman undertakes for the present the duties of chief medical officer in both departments indicates a step towards the co-ordination of the public medical services which will be one of the principal objects of the Ministry of Health. The post of Principal Medical Officer to the Local Government Board is a new post. The holder will have the status of a Secretary of the Board, and will have administrative responsibilities in respect of the work of his department.

Medical Notes in Parliament.

Ministry of Health.

THE Ministry of Health Bill was introduced by Dr. Addison, with the support of Mr. Fisher, Mr. Munro, and Major Astor, on February 17th. The text is nearly identical with that of the measure introduced last November. Sub-clause 3 of Clause 3, relating to the transfer of powers to and from the Minister, has been made wider, and provides that any powers and duties of the Minister other than those enumerated in the first schedule may be transferred to another Government department if they appear to relate to matters affecting or incidental to the health of the people. The following explanatory paragraph is inserted relating to the Poor Law:

And it is hereby declared that it is the intention of this Act that, in the event of provision being made by Act of Parliament passed in the present or in any future session for the revision of the law relating to the relief of the poor and the distribution amongst other authorities of the powers exercisable by boards of guardians, there shall be transferred from the Minister to other Government departments such of the powers and duties under the enactments relating to the relief of the poor then vested in the Minister (not being powers or duties relating or incidental to the health of the people) as appear to His Majesty to be such as could be more conveniently exercised and performed by such other departments.

The After-care of Tuberculous ex-Service Men.—In answer to Mr. Pennefather, Sir James Craig, on February 13th, said that an expenditure of £20,000 a year on the after-care of tuberculous ex-service men was sanctioned in May, 1918, and a scheme for domiciliary visits was considered in consultation between the Ministry of Pensions, the Local Government Board, and the Insurance Commission. On December 4th the Local Government Board issued an explanatory circular to the local authorities. Special appointments would not be necessary in all areas as the scheme was an extension of the arrangements which in many districts were already in existence. In the debate on the address on February 14th, Lieut.-Colonel Nathan Raw said that it was estimated that there were between 40,000 and 50,000 soldiers and sailors affected with tuberculosis, a large proportion of whom had contracted the disease owing to the rigors of active service. The Government had been sympathetic, but a few months in a sanatorium and payment of a pension was not sufficient to cure tuberculosis, and a more comprehensive scheme was required. He appealed to the Government to appoint a special committee to deal with tuberculosis as it affected men invalided from the services and to establish some general form of adequate treatment which could be immediately put into effect. He suggested the formation of a department under the Health Ministry, concerned solely with the treatment of tuberculosis, to provide the necessary colonies and open-air methods. Ex-service men should not be passed on to the local authorities; special pro-

vision should be made for them. Sir Kingsley Wood said that at the present time there were in London about 2,500 soldiers who were receiving no treatment, and every week there were several hundreds of men waiting to go into sanatoriums. He severely criticized the administration of some of these institutions. Sir James Craig, Parliamentary Secretary to the Ministry of Pensions, said that disabled men received priority over other cases of tuberculosis, the accommodation in institutions was to be increased, after-care and home treatment improved, treatment of early cases extended, and steps taken to find for the men who did well graduated employment in agriculture and other suitable industries.

Artificial Limbs.—Sir James Craig stated, on February 13th, that the Minister of Pensions had appointed a committee to report on the existing arrangements with regard to supply, fitting, repair, and refitting of artificial limbs, and whether the Ministry should provide one or more institutions for the supply and repair of limbs, and should employ therein partially disabled or limbless men. The Committee consisted of Mr. Herbert Guedalla (Chairman), Brigadier-General G. H. Cockerill, C.B., and Captain Albert Smith, who had consented to act with Sir Charles Kenderdine and a leading surgeon, subsequently announced to be Mr. Raymond Johnson, O.B.E., F.R.C.S., Holme Lecturer in Clinical Surgery, University College Hospital. The number of men whose stumps were healed awaiting the fitting of artificial limbs on February 1st was 2,832, and the number of men whose stumps were not sufficiently healed for fitting was 5,321. Arrangements for the repair of artificial limbs were now being made by the local committees, and appeared to be working well. Limbs were supplied also to officers. There would not be any general provision of spare limbs until the arrears of first limbs had been worked off. In urgent cases, such as those of men going abroad or of men in special need by reason of their particular occupation, spare limbs had been provided. When asked subsequently the reason why so large a number as 2,832 men whose stumps were healed were still awaiting the fitting of artificial limbs, Sir James Craig replied that the rate of progress in fitting artificial limbs was governed by the limits of accommodation in the fitting hospitals and by the output of limbs by the limb makers. The number of men on the waiting list was large, but it represented what was now a normal two months for the fitting hospitals. The question of delay would be examined by the committee already announced.

The Search for Missing Soldiers.—Mr. Churchill stated in writing, on February 13th, that the present net total of officers and men reported "missing," including prisoners of war for all theatres and all services (Imperial and Colonial), was approximately 359,800. Of this total it was estimated that about 198,000 had been made prisoners. Death was presumed in the case of about 97,000 owing to the absence for a long period of an indication that they were alive; hence there were about 64,800 whose fate remained to be determined. Medical units, fully staffed and equipped, had been sent into each army corps district in Germany with orders to search every camp, prison, mine, asylum, hospital, and elsewhere. The sick were concentrated in central hospitals in each army corps district and moved from there in hospital train. Other Allied powers undertook the same service, and each collected all of any Allied nationality. The German authorities called for a complete roll of all Allied prisoners still in the country on January 25th, with heavy penalties against non-disclosure. A list of those who were known to be prisoners of war and who had not yet been repatriated or whose death had not been reported officially was in preparation. It would be presented to the German Government with demand that they should account for every one of them. A central inquiry office under British supervision would be established at Frankfurt. It was possible that a certain number of men might elect to stay in the country and not make their presence known.

Training Statistics.—Asked by Mr. Pennefather, on February 17th, why only 7,939 men are now in training under the Pensions Warrant, Sir James Craig said that the large majority of disabled men were either ineligible for training in that they could resume their pre-enlistment occupations, or did not seek training because they had accepted unskilled and probably well-paid employment. The number of men awaiting training was approximately 1,500. Of this number 885 desired to take up electrical or mechanical engineering, training for which was suspended pending certain negotiations with the National Trade Advisory Committee. Of the remainder a large proportion wished to be trained in boot and shoe making and repairing, but as there was a limit to the absorbing capacity of this trade an endeavour was made when possible to induce the man to take up some other form of training.

The War Bonus to Panel Doctors.—In a written answer to Sir Kingsley Wood, Mr. Pratt, for the National Insurance Commissioners, on February 17th, stated that early in last year the Chancellor of the Exchequer received a deputation of insurance practitioners and promised them a supplementary remuneration in respect of the increased cost of living and practice in certain cases. The total cost could not be accurately estimated until all cases had been dealt with, but it was not expected to exceed £250,000. It would be paid under the statutory authority of the Appropriation Act from Exchequer moneys voted by Parliament for the purpose, supplementing the Exchequer moneys, approximating to some two million pounds annually, expended on medical remuneration apart from the funds derived from insurance contributions.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

CAPTAIN J. S. COCKS, R.A.M.C.(S.R.).

Captain John Stanley Cocks, R.A.M.C.(S.R.), was reported as having died on service, in the casualty list published on February 10th. He was educated at Guy's Hospital, and took the diplomas of L.D.S. R.C.S.Eng. in 1912, and of M.R.C.S. and L.R.C.P.Lond. in 1914. He took a commission as lieutenant in the Special Reserve of the R.A.M.C. on October 7th, 1914, and was promoted to captain on April 7th, 1915.

LIEUTENANT F. P. M. LUET, A.A.M.C.

Lieutenant F. P. M. Luet, Australian Army Medical Corps, was returned as having died on service, in the casualty list published on February 14th.

HONOURS.

A SPECIAL Supplement to the *London Gazette*, dated February 15th, contains a further list of awards in recognition of "gallantry and devotion to duty in the field." The following medical officers are included:

Bar to D.S.O.

Major (temporary Lieut.-Colonel) Francis Cornelius Sampson, D.S.O., 91st Field Ambulance, R.A.M.C. (D.S.O. gazetted January 14th, 1916.)

Captain (acting Lieut.-Colonel) James Henry Fletcher, D.S.O., M.C., R.A.M.C., commanding 36th Field Ambulance. (D.S.O. gazetted July 18th, 1917.)

D.S.O.

Lieut.-Colonel Stanley Paulin, 11th Field Ambulance, C.A.M.C.

Major Leonard May, M.C., A.A.M.C., attached 11th Battalion, Australian Infantry.

Temporary Major Charles Fraser Knight, 133rd Field Ambulance, R.A.M.C.

Captain Patrick Augustine Ardagh, M.C., N.Z.M.C., attached 1st Battalion, Auckland Regiment.

Second Bar to Military Cross.

Temporary Captain (acting Major) Maurice Aloysius Power, M.C., R.A.M.C., attached 148th Field Ambulance. (M.C. gazetted January 18th, 1918. First bar gazetted January 11th, 1919.)

Temporary Captain George Oliver Fairclough Alley, M.C., R.A.M.C., attached 2nd Battalion, Royal Irish Regiment. (M.C. gazetted June 4th, 1917. First bar gazetted September 16th, 1918.)

Lieutenant (temporary Captain) William John Knight, M.C., R.A.M.C., attached 89th Field Ambulance. (M.C. gazetted May 31st, 1916. First bar gazetted February 18th, 1918.)

Bar to Military Cross.

Captain (temporary Major) Robert Alexander Hepple, M.C., R.A.M.C.(S.R.), attached 28th Field Ambulance. (M.C. gazetted July 26th, 1918.)

Captain (acting Major) John Bernard Cavenagh, M.C., R.A.M.C.(S.R.), attached 113th Field Ambulance. (M.C. gazetted September 17th, 1917.)

Captain (acting Major) Thomas Frederick Corkhill, M.C., R.A.M.C.(S.R.), attached 139th Field Ambulance. (M.C. gazetted September 26th, 1917.)

Captain (acting Major) Frederick Gamm, M.C., R.A.M.C.(S.R.), attached 23rd (Home Counties) Field Ambulance R.A.M.C.(T.F.). (M.C. gazetted July 26th, 1918.)

Captain (acting Major) William Clavering Hartill, M.C., 55th Field Ambulance R.A.M.C. (M.C. gazetted January 1st, 1917.)

Captain (acting Major) William Archibald Miller, D.S.O., M.C., R.A.M.C.(S.R.), attached No. 6 Field Ambulance. (M.C. gazetted November 14th, 1916.)

Captain (acting Major) James Calvert Spence, M.C., R.A.M.C.(S.R.), attached 34th Field Ambulance. (M.C. gazetted September 17th, 1917.)

Captain Franklin Fletcher Dunham, M.C., C.A.M.C., attached No. 5 Field Ambulance. (M.C. gazetted October 18th, 1917.)

Captain John Shaw Mackay, M.C., 12th Field Ambulance, A.A.M.C. (M.C. gazetted January 18th, 1918.)

Captain Laurel Cole Parker, M.C., 13th Field Ambulance, C.A.M.C. (M.C. gazetted February 1st, 1919.)

Captain Joseph Gregor Shaw, M.C., 12th Field Ambulance, C.A.M.C. (M.C. gazetted February 1st, 1919.)

Captain Donald George Kennedy Turnbull, M.C., 11th Field Ambulance, C.A.M.C. (M.C. gazetted July 26th, 1917.)

Temporary Captain (acting Major) John Edgar Davies, M.C., 131st Field Ambulance, R.A.M.C. (M.C. gazetted September 18th, 1918.)

Temporary Captain (acting Major) Benjamin Knowles, M.C., R.A.M.C., attached 88th Field Ambulance, R.A.M.C.(T.F.). (M.C. gazetted March 26th, 1918.)

Temporary Captain (acting Major) Harold Dunmore Lane, M.C., R.A.M.C., attached 1st North Midland Field Ambulance, R.A.M.C.(T.F.). (M.C. gazetted October 18th, 1917.)

Temporary Captain Frederick Orlando Clarke, M.C., R.A.M.C., attached 149th Field Ambulance. (M.C. gazetted January 11th, 1919.)

Temporary Captain Claude Norman Coad, M.C., 74th Field Ambulance, R.A.M.C. (M.C. gazetted July 26th, 1917.)

Temporary Captain Alexander Campbell White Knox, M.C., R.A.M.C., attached 2nd Battalion, Royal Sussex Regiment. (M.C. gazetted January 1st, 1918.)

Temporary Captain James David MacKinnon, M.C., R.A.M.C., attached 4th Battalion, Liverpool Regiment. (M.C. gazetted September 16th, 1918.)

Military Cross.

Captain (acting Major) Hubert Roy Dive, 12nd Mounted Brigade Field Ambulance, R.A.M.C., attached 230th Field Ambulance.

Captain (acting Major) Arthur Leonard Shearwood, R.A.M.C. (S.R.), attached 33rd Field Ambulance.

Captain Alan Fenton Argue, C.A.M.C., attached 87th Canadian Battalion, Quebec Regiment.

Captain Frederick Grant Banting, 15th Field Ambulance, C.A.M.C.

Captain James Harold Blair, C.A.M.C., attached 72nd British Columbia Regiment.

Captain Edwin John Bradley, R.A.M.C.(S.R.), attached 13rd North Midland Field Ambulance, R.A.M.C.(T.F.).

Captain Miles Gillespie Brown, C.A.M.C., attached 85th Canadian Battalion, Nova Scotia Regiment.

Captain Edwin Thomas Cato, A.A.M.C., attached 1st Battalion, Australian Infantry.

Captain Herbert Troughton Chatfield, R.A.M.C.(S.R.), attached No. 6 Field Ambulance.

Captain Lewis Hayes Fraser, C.A.M.C., attached Royal Canadian Horse Artillery.

Captain Gerald Wallace Grant, No. 4 Field Ambulance, C.A.M.C.

Captain Albert Robert Hagerman, C.A.M.C., attached 78th Canadian Battalion, Manitoba Regiment.

Captain James Mann Henderson, A.A.M.C., attached 12th Battalion, Australian Infantry.

Captain Charles Terrell Lewis, C.A.M.C., attached 10th Brigade, Canadian Field Artillery.

Captain Iorworth Hubert Lloyd-Williams, R.A.M.C.(T.F.), attached 5th Battalion, Lincoln Regiment (T.F.).

Captain Harry Clarke Moses, C.A.M.C., attached No. 5 Field Ambulance.

Captain John Archibald Nicholson, R.A.M.C.(S.R.), attached 1st Battalion, Seaforth Highlanders (Egypt).

Captain Kenneth Claud Purnell, A.A.M.C., attached 11th Brigade, Australian Field Artillery.

Captain Allan Melrose Purves, A.A.M.C., attached 2nd Tunnelling Company, Australian Engineers.

Captain George Alexander Smith, C.A.M.C., attached 47th Canadian Battalion, West Ontario Regiment.

Captain Clifford Hudday Kerr Smith, R.A.M.C.(T.F.), attached 1/4th Battalion, King's Own Scottish Borderers (T.F.).

Captain John Stirling, R.A.M.C.(S.R.), attached Head Quarters, 112th Brigade, Royal Field Artillery.

Captain Joseph Townsend Stirling, 11th Field Ambulance, C.A.M.C.

Captain Richard Chapman Weldon, C.A.M.C., attached 2nd Canadian M.G. Brigade.

Temporary Captain (acting Major) John Richard Percy Aliin, 90th Field Ambulance, R.A.M.C.

Temporary Captain (acting Major) Basil William Armstrong, R.A.M.C., attached 100th Field Ambulance.

Temporary Captain Thomas Clapperton, 141st Field Ambulance, R.A.M.C.

Temporary Captain Robert Donald, R.A.M.C., attached 35th Field Ambulance.

Temporary Captain Alexander John D'Souza, I.M.S., attached 92nd Punjab (Egypt).

Temporary Captain William Balfour Gourlay, R.A.M.C., (N. Russia).

Temporary Captain Norman Frankish Graham, R.A.M.C., attached 6th Battalion, London Regiment.

Temporary Captain Richard Perrott Hadden, 103rd Field Ambulance, R.A.M.C., attached 152nd Brigade, Royal Field Artillery.

Temporary Captain Alexander Hunter, R.A.M.C., attached 63rd Divisional Engineers.

Temporary Captain William Boyd Jack, R.A.M.C., attached 5th Battalion, Leicester Regiment (T.F.).

Temporary Captain Matthew James Johnston, R.A.M.C.

Temporary Captain Charles William Berry Littlejohn, 140th Field Ambulance, R.A.M.C.

Temporary Captain Alfred Mason, R.A.M.C., attached 229th Field Ambulance.

Temporary Captain Edward Rogerson, R.A.M.C., attached 2nd Battalion, King's Royal Rifle Corps.

Temporary Captain James Scott, R.A.M.C., attached 12th Battalion, Manchester Regiment.

Temporary Captain Thomas McCull Sellar, R.A.M.C., attached 1/18th London Regiment.

Temporary Captain George Burkett Wilkinson, 28th Field Ambulance, R.A.M.C.

Lieutenant William Percival Nelson, R.A.M.C.(S.R.), attached 128th Battalion, London Regiment.

EAST AFRICAN CAMPAIGN.

The following awards to medical officers are announced for services rendered in connexion with military operations in East Africa:

C.M.G.

Temporary Lieut.-Colonel Hugh Basil Greaves Newham, R.A.M.C.

Major (acting Lieut.-Colonel) Richard Edmond Humfrey, R.A.M.C.

C.I.E.

Lieut.-Colonel (temporary Colonel) William Wellesley Clemesha, I.M.S.

O.B.E.

Temporary Majors: Robert Semple, R.A.M.C.; Robert Standish White, R.A.M.C., attached Northern Rhodesia Medical Corps.

Captains: Charles Percivale Bligh Wall, S.A.M.C.; Isidore Jack Block, S.A.M.C.; George McGregor Millar, I.M.S.

Temporary Captains: Arthur George Eldred, Special List, Nyasaland Medical Service; Charles Reginald Howard, R.A.M.C.; Quintus Madge, R.A.M.C.; Legh Richmond Herbert P. Marshall, R.A.M.C.; Samuel Mason, S.A.M.C., attached 2 1st Battalion, King's African Rifles.

M.B.E.

Temporary Lieutenant Arthur William Joblins Pomeroy, West African Frontier Force, attached Medical Services, East Africa.

To be Brevet Majors.

Captains (acting Lieut.-Colonels) J. D. Kidd, M.C., R.A.M.C., J. A. Manifold, D.S.O., R.A.M.C.

Captain E. A. Sutton, M.C., R.A.M.C.

Military Cross.

Captain Atholl Robertson, R.A.M.C.

The Meritorious Service Medal has been awarded to ten warrant and non-commissioned officers and privates of the R.A.M.C.

ORDER OF THE BRITISH EMPIRE.

The *London Gazette* of February 18th announces the following appointments to the Order of the British Empire for valuable services rendered in or in connexion with military hospitals, war hospitals, auxiliary and civil hospitals, command dépôts, convalescent camps, or other duties of a similar nature in the United Kingdom in connexion with the army during the war.

C.B.E. (Civil Division).

Reginald Alcock, M.B., F.R.C.S.; Alexander Richard Anderson, F.R.C.S.; Herbert George Frankling, M.R.C.S.; William Henry Clayton Greene, M.B., F.R.C.S.; Robert George Hogarth, F.R.C.S.; Russell John Howard, M.S., F.R.C.S.; William James Howarth, M.D., D.P.H.; Professor Bennett May, M.B., F.R.C.S.; William Cuthbert Morton, M.D.; Frank Nicholson, M.D.; Alfred James Rice-Oxley, J.P., M.D., M.R.C.P.; Thomas Young Simpson, M.D., M.S., F.R.C.S.

O.B.E. (Civil Division).

Robert Young Aitken, M.D., F.R.C.S.; George Edward Genge, Andrews, M.B., B.S.; George James Mouncey Atkinson, M.R.C.S.; Isaac Banks, M.D.; Richard Henry Barter, M.B., B.Ch.; William Charles Bental, F.R.C.S.; Edward Joseph Blackett, M.R.C.S.; Joseph Blomfield, M.D.; Frederick Lenox Harman Brown, M.B., C.M.; Lieut.-Colonel William Hotson Cadge, I.M.S.; John Cashin, F.R.C.S.I.; James John Day, M.R.C.S., D.P.H.; John Elliott, M.D., F.R.C.P.; Henry Brown Elton, M.B., B.C.; David Ewart, M.D., Ch.B., F.R.C.S.; Francis Harold Fairweather, M.D., M.S.; Henry Dawson Farnell, J.P., F.R.C.S.; Edmund Towers Fison, M.D., D.P.H., F.R.C.S.; James Finlayson Fleming, M.B., Ch.B.; Joseph Vincent Fox, M.B., C.M.; John Dudgeon Giles, M.D.; Herbert James Godwin, M.B., F.R.C.S.; James Edward Gordon, M.R.C.S.; Bernard James Guillemard, M.D.; John Atkinson Harrison, M.B., C.M.; Joshua Harold Harvey, M.R.C.S.; Edward Drummond Hay Hawke, M.R.C.S.; Alfred William Hutton, M.R.C.S.; Miss Mary Ethel Jeremy, M.B., B.Ch.; John Rushworth Keele, M.R.C.S.; Charles Gilbert Burring-ton Kenne, M.D., B.S.; Martin Aston Key, M.B., B.Ch.; Miss Mary Forbes Iiston, M.B., Ch.B.; Cecil John Read MacFadden, M.D., C.M.; John Macintosh, M.D.; Arthur Martin Mitchell, M.D., B.C., D.P.H.; Herbert Charles Orrin, F.R.C.S.; Reginald Christopher Peacocke, M.D.; George Henry Percival, M.B.; Charles James Pinching, M.R.C.S.; Arthur Young Pringle, M.R.C.S.; Frank Radcliffe, M.B., Ch.B.; Bernard Rice, M.D.; Kenneth Rogers, M.D.; Miss Winifred Margaret Ross, M.B., Ch.B.; Steward Henry Rouquette, M.B., B.Ch., F.R.C.S.; Lewis Erle Shore, M.D., B.Ch.; Edward Walpole Simmons, M.D.; Charles Dudley Somers, M.B.; Miss Florence Ada Stoney, M.D., B.S.; John William Taylor, M.D., Ch.B.; Berthold Bezly Thorne Thorne, M.D., B.S.; John William Thomson Walker, M.B., C.M., F.R.C.S.; Arthur Douglas Webster, V.D., M.D., D.Sc., F.R.C.P.; Cyril George Russ Wood, F.R.C.S.; Robert Alfred Worthington, M.B., B.C., F.R.C.S.

England and Wales.

THE EAST MIDLANDS UNIVERSITY.

An article by Professor Frank Granger in the issue of *Nature* for February 13th shows that the movement in favour of creating a university for the East Midlands, with its seat at University College, Nottingham, has made considerable progress. The decision to apply for a charter was reached at a meeting presided over by the Duke of Portland (president of University College, Nottingham) and attended by representatives of the counties of Derby, Leicester, Lincoln, Northampton, Nottingham, and Rutland. The meeting affirmed the need for a university providing university and advanced technical education, and promoting scientific research in the East Midland area, and began the formation of a committee to take the necessary steps. At present University College, Nottingham, and the Midland Agricultural College are the only institutions within the area which, in a systematic manner, provide instruction and pursue research of the highest standard; but there are in existence, or immediately contemplated, a considerable number of institutions providing instruction of a special character, which will become parts of the new university, ranging through various degrees of affiliation to the position of schools in the university. Schools of engineering, lace, and hosiery will, it is expected, take their respective places on a footing like that of the existing Agricultural College, and plans for the establishment of colleges of pure science and arts are being developed. The proposed university would be of a federal character as the various schools rise towards and obtain recognition. Nottingham, as has been said, is to be the centre, and it is pointed out that Derby and Leicester are within half an hour by rail, while the remoter centres of population, such as Lincoln and Northampton, are within easy reach of one at least of the cities already mentioned.

CONTROL OF TUBERCULOSIS IN WALES.

The *Welsh Outlook* has published a supplement on the campaign against tuberculosis carried out by the King Edward VII Welsh National Memorial Association. It was founded in 1910 with a gift of £125,000 from one family. It commenced the actual work of treating patients in July, 1912, and now has contracts with all the Insurance Committees in Wales and Monmouthshire for the treatment of insured persons suffering from tuberculosis, in return for the sum of 9d. a head per insured person out of the sanatorium benefit fund of each committee. The cost of maintenance in respect of the institutions and of administration is met out of the income derived from the invested funds of the association, the contributions from Insurance Committees, and Treasury grants in respect of income from sums invested and of interest on capital invested. The deficiency is allocated among the county and county borough councils in Wales and Monmouthshire and the Treasury, the association having undertaken, in return for the moiety from the local authorities named, to extend treatment to non-insured persons. The association is managed by a council of 80 members, of whom 32 are appointed by county councils and county borough councils, and 21 by the Insurance Committees.

Before the establishment of the association there existed the West Wales Sanatorium and the open-air home for children, erected and maintained by Miss A. M. Davies of Treborth, Bangor. Both these institutions have been presented to the association, and the accommodation at the former has been increased from twenty-three beds to eighty-two, while at the latter the accommodation has been exactly doubled. The Pontywal estate in Breconshire was purchased by the association, and a sanatorium providing 304 beds, believed to be the largest in the United Kingdom, has been built. Sir D. S. Davies some years ago presented an estate at Llangwyfan, in the Vale of Clwyd; here the North Wales Sanatorium, with 184 beds, has been erected, and the donor has built on the estate a block for the treatment of persons suffering from surgical tuberculosis. Altogether the association owns 381 hospital beds, and has arranged with various authorities for 318 more.

In a short article on treatment in sanatoriums, Dr. H. E.

Watson, medical superintendent of the North Wales Sanatorium, writes:

The most complete scheme of graduated exercises is that laid down by Dr. Marcus Paterson, the late medical director of the association, and now practised in the sanatoria of the association. As a result patients are restored to working capacity more quickly than formerly, and on leaving the sanatorium are, in the majority of cases, fit at once to re-enter the ranks of the wage earner, and with a better prospect of remaining well. The success of the sanatorium depends largely on the degree of supervision exercised over the whole lives of the patients, and on the degree of co-operation which can be induced on the part of the patient. One point which should be emphasized is that the success of the sanatorium is further dependent on the early recognition of the disease, and where this is delayed a successful issue to treatment becomes more remote and unlikely.

In a note on the factors in a successful fight against tuberculosis, Sir William Osler lays down the following conditions:

The essential factors in the fight are (a) the improvement in the social and hygienic surroundings—better homes, better habits, more fresh air, more food, shorter hours, less beer; (b) the most watchful care about the beginnings of ill health, particularly in children, who should be systematically inspected, etc.; (c) early diagnosis, for which purpose the tuberculosis dispensary is all-important, and as a centre for the examination of contacts, and for the education of the public; (d) sanatoriums in which early cases may be cured or the disease arrested, and all educated; (e) the extension of the home treatment under the supervision of the tuberculosis officer; (f) hospitals for advanced cases, and the most rigid supervision of all open cases in their homes; (g) a larger staff of specially trained nurses for dispensary, home, and sanatorium work; and, lastly, a central institute which will (1) house the general staff; (2) organize the work to the smallest details; (3) be in sympathetic touch with every tuberculosis officer and nurse; and (4) conduct actively researches into the pathology and treatment of the disease.

Scotland.

THE NEONATAL MORTALITY RATE IN EDINBURGH.

The *Scotsman* newspaper included recently in its weekly report on the health of the city of Edinburgh a few lines on the neonatal death-rate for the month of January. It will be remembered that Dr. J. W. Ballantyne, in an address given at the annual meeting of the National League for Health, Maternity, and Child Welfare in London last July, made a strong appeal for the separate and prominent publication of the neonatal mortality rate in all large towns and districts of the country (*BRITISH MEDICAL JOURNAL*, July 13th, 1918, p. 32). He gave reasons for regarding the neonatal rate (that is, the number of deaths in the first month of life per 1,000 live births) as the most sensitive index of the general welfare or ill health of the community; for this and other reasons he urged that this mortality rate should be picked out for separate publication and placed alongside of the general birth-rate, the general death-rate, and the infantile death-rate, so that the public might know how matters stood in this important section of vital statistics. The large national annual statistical reports give this rate along with those of various other months and years in life, but these reports do not always reach the general public.

The Edinburgh report for January, after referring to the prevalence of the zymotic diseases, to the general and infantile mortality rates, and to the birth rate, adds: "During the month of January 30 deaths occurred in the case of infants under the age of one month, being equal to an annual neonatal mortality rate of 67.4 per 1,000 births. For the corresponding month of last year the rate was 37.2 per 1,000 births." Probably temporary or local causes account for the great increase which this rate shows over that of the corresponding month in last year—the prevalence of influenza, perhaps—but the striking fact remains that there are periods when in these first four weeks of life 67 out of every 1,000 babies born alive may perish. Obviously efforts must be made to lessen this great mortality if child welfare work is not to be loaded with a dead weight of disaster that must go far to take all the hopefulness out of its propaganda. For this reason the new departure made by the Edinburgh health authorities in supplying the newspapers with the neonatal mortality rate (a practice which we understand is to be continued monthly) may be timely and helpful, although

it must be confessed that this first announcement is depressing. It would be well if other large centres of population were to be afforded the opportunity of clearly recognizing the incidence of disease and death in these early and most deadly weeks.

Correspondence.

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY.

SIR,—In your leading article in the *BRITISH MEDICAL JOURNAL* of February 15th on the teaching of obstetrics and gynaecology there is a paragraph beginning, "We are not prepared to follow Dr. Fairbairn in his suggestion that the care of the infant up to nine months or a year might advantageously be the province of the obstetrician." I made no such suggestion, and rather argued for the reverse of this, but apparently my open mind as to where the dividing line between obstetrics and pediatrics should be drawn left room for ambiguity, as some of the speakers at the meeting obtained a similar impression to that conveyed by your leading article. As time did not allow of my clearing the matter up at the meeting I beg your indulgence to do so now.

I took it for granted that the baby for the first few weeks must be in charge of the obstetrician, as he teaches by example as well as precept. Throughout pregnancy and labour his teaching has been directed towards the prospect of two patients, and to one thoroughly imbued with this idea the handing over the charge of one patient the moment that prospect has been realized seems almost impossible. Your leading article speaks of birth as the logical point to draw the dividing line, but there is no logic in treating mother and child separately from birth; there is the all-important question of breast-feeding, for instance, to which consideration has been given throughout pregnancy and which is not established till some days after birth. From the standpoint of preventive medicine, the head of the clinic must be responsible for seeing that his students pay full attention to both patients, and cannot delegate his responsibility in regard to one of them to a colleague without detriment to his influence and his teaching. The example of his interest and thought for the baby patient is a most potent factor in creating that preventive atmosphere about the training of his students which it was the object of my paper to urge.

I think the misapprehension as to my view arose through my describing the baby clinics at St. Thomas's as having "evolved" from the obstetric department and being in its charge. But it was clearly described as a stage in evolution and not as a fully developed scheme, which I suggested would be the appointment of a special officer for the child welfare clinics, who would begin by taking part in the teaching on the infant in the maternity ward, where he will become known to the mothers and learn to know them, and thus preserve continuity from the maternity clinics to the baby clinics." This "liaison" officer, as I termed him, was meant to be a pediatrician, but perhaps I ought so to have labelled him, though his office ought to have been understood, as immediately afterwards the impossibility of the obstetric officers undertaking the infant clinics is stated. My argument was that so close a co-ordination is required between obstetrics and pediatrics—both for success in working the centre and for the training of students—that the pediatric officer, as one of the team, must know from the start what is being done for mother and infant, and should be responsible for continuity of policy from maternity ward to infant clinic. I felt it impossible to draw any hard and fast dividing line between obstetrics and pediatrics, and left it open because there must be an intermediate stage of co-dominion, of handing over and taking over, during which the obstetric chief is responsible for mother and infant, and insists on his students following his lead; but, at the same time, he seeks the advice of consultation with, and the aid in teaching of his pediatric colleague. Till mother and child are discharged from hospital to clinic their supervision is not taken over by the pediatric side of the team.—I am, etc.,

London, W., Feb. 18th.

JOHN S. FAIRBAIRN.

THE PRESENCE OF A FILTER-PASSING VIRUS IN CERTAIN DISEASES.

SIR,—In the *BRITISH MEDICAL JOURNAL* of February 1st, 1919, a preliminary paper by Bradford, Bashford, and Wilson briefly refers to a group of filter-passing organisms in typhus and in other diseases which appears to be identical with a group of filter-passing organisms which were first described by Hort and Ingram in May, 1914, in connexion with typhus fever. Between that date and the present day numerous publications have appeared under my name in which I have referred to the presence of similar filter-passing organisms, not only in typhus fever, but also in scarlet fever, measles, German measles, mumps, epidemic pneumonic affections, and cerebro-spinal meningitis.

In each case except the last the organisms in question were found in Chamberland F filtrates, the use of Berkeley filters of all meshes being discarded by me as not affording satisfactory evidence of genuine filterability in the usual bacteriological sense. In each case the filtrates proved, when inoculated in the fresh, or nearly fresh, condition, to be highly pathogenic to monkeys, and often to guinea-pigs and rabbits. These inoculation experiments were in all cases elaborately controlled. In many cases, especially in typhus fever, the organisms could be cultivated for a short time in filtered citrated human blood, and on slices of sterile rabbit kidney. The organisms frequently occurred as minute coccoids, varying from about 0.2 μ , or less, to about 0.5 μ , being seen singly, in pairs, or in short chains. They prefer aerobic to anaerobic conditions, and were demonstrated in filtered blood, cerebro-spinal fluid and urine in all the acute typhus cases examined, as well as in unfiltered blood, cerebro-spinal fluid and urine. They were also demonstrated in filtered throat washings, and in unfiltered throat washings, in the early stages of scarlet fever, as well as in the blood and urine. In measles, German measles, and mumps, they were invariably to be found in fresh urine during the early stages of the disease, each disease presenting its own morphological variations, though these are slight, in stained and unstained films. Control observations of normal urines, of normal bloods, and of normal specimens of cerebro-spinal fluid, in the case of typhus fever observations, invariably gave negative results.

Speaking from memory, on duty in France, the number of cases examined was roughly as follows in the five years in which I have been almost continuously engaged in the study of this remarkable group of organisms: Typhus fever 40 cases, scarlet fever 20 cases, measles 12 cases, German measles 8 cases, mumps 12 cases, epidemic bronchopneumonic and pneumonic affections 7 cases, epidemic cerebro-spinal fever 30 cases.

In addition to numerous references in the medical press, I have given several demonstrations, both in public and in private, of the morphology of various members of this group of organisms as exhibited by film preparations, and by photographs by F. M. Duncan of filtrates showing their presence. The chief of these demonstrations was in a private meeting in 1915 at which Sir Alfred Keogh, D.G. A.M.S., Professor Adami, Surgeon Captain Bassett-Smith, Professor Farmer, Sir Humphry Rolleston, and others were present, and at meetings of the Royal Microscopical Society in Hanover Square. These demonstrations were accompanied by exhibitions of a long series of temperature charts, illustrating on the one hand the high degree of pathogenicity of these organisms in filtrates, and on the other the complete absence of fever in uninoculated selected animals. As a result of the meeting in 1915, I was officially instructed by the D.G. A.M.S. to pursue the study of this group of organisms on a much more extensive scale than had up to that date been possible. For eighteen months, therefore, after that date, an exhaustive study—bacteriological and experimental—of this group of organisms was made by me in typhus fever, and independently by Captain A. H. Caulfield in the Addington Park laboratory, and in cerebro-spinal fever by Captain Caulfield and myself in conjunction. Some of the work in cerebro-spinal fever has already been published, the very considerable mass of fresh data with regard to typhus now awaiting publication and the advent of less laborious days to arrange these data. Here I must be content with saying that in typhus fever the presence of the same group of organisms has been repeatedly established by me by passage through a long series of human cases, monkeys,

and guinea-pigs; the infectivity of the filtrates of the blood and cerebro-spinal fluid, Chamberland F filters being again exclusively employed, from the human cases and from the animal carriers being established beyond any possibility of doubt. Much work, however, still remains to be done in typhus and in all the other diseases mentioned in order absolutely to establish full etiological relationships.

This is one of the reasons I have hitherto been content with fragmentary preliminary accounts of my work on these filter-passing organisms, in the hope that meanwhile the original observations of Hort and Ingram in 1914 in typhus fever would be confirmed by other workers. This hope appears now to have been fulfilled by independent workers, clearly unaware of my earlier publications, and I sincerely trust that their interesting and valuable paper will stimulate further efforts in a most difficult field of study. Not the least of the difficulties to be encountered is the fact, as Captain Bashford and Captain Wilson will soon discover, that the appearance of the particulate organisms demonstrable in the blood and cerebro-spinal filtrates is preceded by the appearance of an organic virus the intimate structure of which is more difficult optically to determine, and which is at the same time more highly infective, than is the case when development has proceeded to the point at which definitely visible organisms appear. The significance of this observation in all filtration experiments, provided that good filters are employed, will not escape notice.—I am, etc.,

EDWARD C. HORT,

Hon. Lieut.-Colonel R.A.M.C. (temporary).

France, Feb. 6th.

REFERENCES.

BRITISH MEDICAL JOURNAL, July 4th, 1914, p. 15. Proceedings, British Medical Association Meeting, Aberdeen, July, 1914. BRITISH MEDICAL JOURNAL, April 17th, 1915, p. 673. *Journ. Roy. Army Med. Corps*, February, 1916. *Ibid.*, September, 1916. *Journ. Roy. Microsc. Soc.*, December, 1916. *Proc. Roy. Soc.*, vol. 89, 1917, etc. The article in the BRITISH MEDICAL JOURNAL of April 17th, 1915, containing references to the filter-passing organisms found in typhus fever, was translated into French, Russian, and Serbian, and was circulated in Serbia during the summer of 1915 by the British Red Cross Society.

DIFFUSE EMPHYSEMA OF THE WALL OF THE SMALL INTESTINE.

SIR,—Under the above heading Mr. C. A. R. Nitch and Professor S. G. Shattock, F.R.S., reported a case before the Pathological Section of the Royal Society of Medicine recorded in your issue of February 15th. From the description the case was evidently an example of the disease usually designated "Gas Cysts of the Intestine," a case of which was investigated and described by Professor T. Shennan and myself in 1909 (*Journal of Pathology and Bacteriology*, vol. xiv, p. 259). In this case, as in at least ten of the twenty previously recorded, there was a stenosis from ulceration in the pyloric region, the patient dying from haemorrhage from the ulcer.

The cysts in our case, as in the majority of others recorded, were situated in the last two feet of ileum, the jejunum being entirely unaffected. Some cysts were situated on the peritoneal surface of the intestine and were pedunculated, others were found in the submucosa. Microscopic examination of the smaller cysts showed them to contain and to be partly lined by giant-cells, some of which were vacuolated and appeared to be secreting the gas. Cultures taken from the cysts both during life and after death gave a growth of *B. coli communis*. Whilst placing little reliance on the evidence of *post-mortem* culture, the leucocytic infiltration round most of the cysts made us conclude that the primary factor in their origin was probably bacterial.

Whether the condition is the result of organismal infection or is a form of new growth is as yet undecided. I think, however, we may definitely exclude the theory advanced by Mr. Nitch and Professor Shattock that it is an emphysema the result of gas being driven into the wall of the gut by way of the edge of an ulcer in the duodenum, as in all recorded cases the duodenum itself has been free of the cysts which have been most numerous in the lower ileum.

It is of interest to know that John Hunter described a similar condition in pigs, and an investigation of this condition by the Department of Agriculture in Washington revealed the presence, in the cysts, of an organism of the colon group in every case examined.—I am, etc.,

Edinburgh, Feb. 15th.

D. P. D. WILKIE, F.R.C.S.

METHODS OF INFANT FEEDING.

SIR,—As an infant welfare doctor, I cannot let Dr. Laing's criticism of some modern methods of infant feeding (BRITISH MEDICAL JOURNAL, February 8th, p. 150) pass unchallenged. I agree with him that a hard-and-fast rule for infant feeding will lead to many disasters. Every infant is a law unto itself; not only have age and body weight to be taken into consideration in determining the dietary, but a third factor more important than either of the others—the *individuality* of the child. Thus the thin, active, muscular type of baby usually needs a bigger feed than a quiet placid infant of the same age and of perhaps even heavier weight. Or a baby who has lost weight through illness requires, once convalescence is established, an apparently excessive diet. The *atrophic* babies, again—that difficult class of infants who from birth, or more frequently from the time the breast milk ceases, fail to thrive satisfactorily—once their metabolism (as a result of treatment) becomes normal, require feeds of caloric value out of all proportion to their body-weight.

As a general rule the baby at the breast knows when it has had enough, and provided it be not allowed merely to use the nipple as a dummy to go to sleep with, I consider, with Dr. Laing, that it should be allowed to suck as long as it likes, and not for any stated number of minutes; for a vigorous infant will obtain in ten minutes what a more weakly one will spend half an hour in acquiring.

When we come to deal with the bottle-fed baby, however, I do not agree that the infant's inclination can be entirely followed. Dr. Laing says it is difficult to overfeed such a baby, "if the mixture be of suitable strength, the teat not too large, and the baby *not allowed to suck too long*" (the italics are mine). That is just the point: with the bottle-fed baby we have to some extent to regulate the feeds. The ideal teat has still to be invented. Teat bores should be graded so that a hole of any required size could be obtained. In practice it is difficult to secure a teat with a suitable bore; should one succeed, a very few days' use enlarges the hole so that it becomes too big, and in consequence the bottle is gulped down so rapidly that no feeling of satisfaction results. Less frequently the bore is too fine, and the infant becomes tired with sucking—satisfied in a sense for the moment—before the full ration is taken, whereupon the anxious mother, seeking the aid of a red-hot needle, enlarges the hole and usually oversteps the mark.

Turning now to the *interval between feeds*. When first qualified I advised as I had been taught, and advocated two or two and a half hourly feeds for very young babies, with four-hourly feeds at night. I have long since given this up and have become a firm convert to the "three-hourly, no night feeding" school. In the course of some nine years' experience at schools for mothers and infant consultations the conviction has become deeply rooted that for the great majority of babies this method gives the best results. Unlike Dr. Laing I find flatulence is usually attributable to too frequent or irregular feeding and once the infant has adopted the three-hourly routine the trouble tends to disappear, provided of course the bowels be kept regular. In this part of the country at any rate the untaught mother feeds her infant not at any set time, but simply whenever it cries. If subsequently it sleeps for several hours on end she is thankful for the respite to attend to her over-numerous other duties. The process of feeding a baby, including the necessary "toilet" and the procedure known as "getting the wind up" occupies not far short of an hour. The infant is then (theoretically at any rate) laid in its cot or pram to sleep, but some time probably elapses before it finally settles off, so that the next two-hourly feed becomes due just as it is in a deep restful sleep. To awaken it at this juncture seems to me absolutely wrong; both mother and child would suffer.

The *three-hourly* method on the other hand allows time for a good sleep between feeds, and if there is a little waking interval before the next meal time arrives, a suitable opportunity is afforded for exercise and for fondling and nursing.

The "pitiful cries" of the babies to which Dr. Laing refers may be due to many causes other than hunger—cold feet, thirst, lack of sleep, constipation, to mention only a few. Labour saving is the cry of the moment; we want to simplify life. The task of bringing up a family is difficult enough even amongst the affluent. Amongst mothers

of the infant welfare class the strain involved is enormous; a baby is often said to be one person's work, but here, in addition to baby tending, one pair of hands has to wash and cook and mend and clean. In these cases is two-hourly feeding practicable? I say not. Such advice leads merely to irregular feeding. No working-class mother could keep up with it—hence she feeds the baby when awake whenever it cries, and for the rest thankfully lets it sleep as long as it will!

The three-hourly plan she can attempt to follow. Hence by advocating it from the beginning we may lighten her burden. The habit of sleeping all night without a feed is readily acquired if insisted on from the first, and the long rest benefits mother and child alike.

The great majority of nurses of my acquaintance favour the three-hourly plan, not from any lazy motive, but because they are convinced of its superiority to the older two-hourly plan. Premature and weakly infants may need more frequent feeds, lest the total day's intake of food be insufficient to promote growth. A steady gain in weight is the safest criterion of progress, and this can in the vast majority of cases with which we have to deal be obtained with the three-hourly method, provided the food be adapted, qualitatively and quantitatively, to the individual in question.—I am, etc.,

G. H. HICKLING, M.D., D.P.H., B.Sc.

Dalgarth, Romiley, Feb. 7th.

THE UNITY OF THE PROFESSION.

SIR,—We are on the edge of a great abyss, we are on the verge of disaster, we are on the verge of losing our freedom and becoming paid servants, and one of our profession is directing us thereto. Before it is too late, let us examine our strength of resistance, and, for the sake of the professional freedom of ourselves and those who are to follow us, let us organize under a strong leadership and fight to the bitter end.

The work of general practice is not work that can be satisfactorily carried out by salaried men or on contract terms. The treatment of cases, as we are so excellently taught in the wards of our hospitals, cannot be successfully pursued in general practice. Any general practitioner who attempts to treat cases in private as he did when he was house-surgeon or house-physician very soon finds that he has got to alter his ways or look out for something else to do.

If this so-called State medical service is going to be introduced, in a very short time we shall have a large gang of medical men whose one object will be to get their day's work finished as speedily as possible and do as little as they can for the salary offered: that is the natural trend of paid servants.

At the present moment the Government is master of us and, mark my words, is in full knowledge of the fact. Our only Association, the British Medical, excellent as it is in many ways, is being fooled; occasionally a little sop is given to it, but the fact remains that when it comes to bargaining the Association is helpless and the Government will see to it that it remains so if it can possibly manage it.

The sooner the profession realizes that Dr. Addison is not working for it, and cares nothing for it, the better; we are gradually being forced to fight, and unless we can quickly organize our forces and arm them the result is a foregone conclusion.

I am one of those who think there is plenty of room for amicable work between the British Medical Association and the Medico-Panels Union. The British Medical Association is the pioneer, and must uphold the rights of the majority. This it cannot do at the present time because it has no power of punishing any refractory member except by expelling him and thus still further weakening our forces. What is required is that the British Medical Association should have power to say to the Government, "Hands off!" and mean it. If all the members of the British Medical Association would also join the Medico-Panels Union that power is at once in their hands, and I do not think it would have to be used. It would very speedily be seen that instead of being told what we are to do we should be politely consulted on bended knee. At the present time I am a member of neither society, but loyal in every respect to the British Medical Association. I am perfectly

prepared to join both if they will work together for our interests.—I am, etc.,

WILLIAM ESCOMBE, M.R.C.S., L.R.C.P.

Grimsby, Feb. 9th.

THE FUTURE OF THE MEDICAL PROFESSION.

SIR,—In view of coming developments in the way of a State medical service, various committees have been formed for the purpose of watching over and guarding the interests of the medical profession. The necessity of rendering these committees as representative of the profession as possible has been repeatedly emphasized, and they have been made to include on their strength consultants, general practitioners, panel doctors, public health and Poor Law officials. Yet in spite of the anxiety shown to guard the interests of all these branches of the profession, there is one great body of medical men that is apparently unrepresented. Nevertheless, it is to this unrepresented group that the coming of any form of State medical service is a matter of such vital importance. I refer to the medical men who have served overseas during the present war, and, having lost their pre-war practices, are now faced with the necessity of starting their professional life over again. Surely those who have staked so much already, and are looking forward to the possibility of State employment as a means of obtaining a decent livelihood, are worthy of direct representation on some of these so-called representative committees.

It may be offered as an explanation of this omission that the very fact that these men were serving abroad at the time of forming the committees made it impossible to find suitable representation. But at the present moment, when many of these medical officers have returned from overseas, this excuse is no longer valid. Suitable representatives can now be selected. Nor can the protestations of those of the profession who have remained at home during the war to the effect that they are fully conscious of their obligations to guard the interests of their absent colleagues be considered sufficient. Wrongly or rightly, the men who have lost their practices through absence are not entirely comfortable about leaving their future in the hands of others. Of the good intentions of many of their home colleagues they are fully conscious, but good intentions are but good intentions, and a future that rests on such a foundation is none too satisfactory.

At the end of the South African campaign an association was formed of medical men who had served abroad during the war. The formation of such a society after the present war would, of course, be a very much bigger undertaking. But is such an idea altogether unfeasible? The bond that links together medical men who have served abroad during the present war is a very real one—a bond that is as great, if not greater, than that which unites those who have been educated at the same school, or university, or hospital. Has this idea, that has doubtless arisen in the minds of many of us, begun to materialize, or is it merely an idea that will never take outward form? The difficulties of realizing such a project may be great, but if thereby something of the comradeship we have known abroad can be preserved at home, surely those difficulties are worth tackling.

Can any one tell me if any steps have been taken in this matter, or if, indeed, such are even contemplated?—I am, etc.,

KENNETH M. WALKER,

London, Feb. 4th.

Captain R.A.M.C. (T.C.)

MEDICAL RESETTLEMENT.

SIR,—I have followed with interest the correspondence in the JOURNAL on the questions of demobilization and the subsequent future of junior R.A.M.C. officers. It appears to me that there is a class whose claims have not yet been put forward. This is composed of men who have held hospital appointments before the war, and who then intended to start practice, or to specialize. Many of the latter now cannot do so owing to the lapse of time—four years or more—the lack of opportunity and experience in their special subject in the R.A.M.C., and the necessity, perhaps from family and financial reasons, of now "settling down." The date of their demobilization is still uncertain, and, even when they are free, they have nothing definite

to which to return. Many owing to ill health shrink from the struggle of commencing general practice.

Within the last few months I have met many officers in these circumstances, and some definite information on the following points would be very welcome, as it would make future prospects less uncertain:

1. Will there be many whole-time appointments vacant under the Ministry of Pensions? It is presumed there may be, as rumour has it that the Ministry will at some future date take over several institutions now under military control; and there may be other appointments, not institutional.

2. Will such appointments be made widely known, by advertisement or other means, so that all such officers may have the opportunity to apply?

3. Will such officers, if appointed under the Ministry of Pensions before their demobilization, be allowed to demobilize or transfer from the R.A.M.C.?—I am, etc.,

February 3rd.

"HOPEFUL."

SIR,—With reference to the demobilization of medical officers, it would appear that, in addition to those who left practices or teaching posts to join up at the beginning of the war, there are others—the then more recently qualified—who were pursuing studies for further or higher professional qualifications. In exceptional cases some by taking up specialist work may have been able to accumulate wholly or partially the material for the examination or thesis they had in view. Others, and this more especially applies to those who have devoted their attention to field ambulance and regimental work, have perforce been prevented from recontinuing their studies.

I should like to endorse all that Major Gibbons says in the letter published in your issue of January 25th. It would seem to be only fair that those whose studies were interrupted should be given consideration in the order of demobilization, this applying specially to those who joined up early in the war.—I am, etc.,

B.E.F., Feb. 1st.

REGIMENTAL M.O. (S.R.).

The Services.

INDIAN MEDICAL SERVICE.

THE INCREASE IN GRADE PAY.

THE Secretary of State informed the deputation from the British Medical Association on February 10th that improvements had been sanctioned in the rates of pay for permanent officers of the Indian Medical Service on both the military and civil sides approximating in the aggregate to an increase of 33½ per cent. on the present rates of military grade pay. He stated that the detailed rates of pay to give effect to the decision are being worked out in India, and will be announced as soon as possible. Meanwhile, taking the old rates of grade pay and adding 33½ per cent., we find the following:

Grade Pay: Rupees a Month.

	Old.	New (estimated).
Lieutenant	350	467
Captain	400	533
.. after 5 years' service	450	600
.. .. 7	500	667
.. .. 10	550	733
Major	650	867
.. after 3 years as major	750	1000
Lieut.-Colonel	900	1200
.. .. specially selected	1000	1333

The sterling value of the pay in rupees, which is, of course, of importance to a European who has to remit money to London, depends on the rate of exchange. By an Act of 1899 the value of the rupee cannot fall below 1s. 4d. It has appreciated during the last few years and is at present (February 20th) 1s. 6d. It is not thought probable that it will go back to 1s. 4d. We have, however, calculated the sterling equivalent of the new grade pay at both 1s. 4d. and 1s. 6d.

Grade Pay: New Scale: Sterling Equivalents (approximate).

	Sterling Yearly.	
	At 1s. 4d.	At 1s. 6d.
Lieutenant	374	421
Captain	427	481
.. after 5 years	480	541
.. .. 7	534	602
.. .. 10	586	661
Major	693	782
.. after 3 years	800	902
Lieut.-Colonel	960	1083
.. .. specially selected	1056	1203

The new grade pay is to have retrospective effect from December 1st, 1918. The new rates for officers in military employment set out in Army Instruction (India) No. 1343 (published in the BRITISH MEDICAL JOURNAL on February 8th) came into force on the same day. To know what the exact effect of the increase of 33½ per cent. will prove to be in the case of officers in military employment we must wait for the promised announcement of the details now being worked out in India.

WAR GRATUITIES FOR OFFICERS.

THE Admiralty and the War Office have issued Orders with regard to the grant of special war gratuities to officers of the navy and army respectively.

Naval Service.

Separate scales are laid down (a) for permanent officers on the active lists of the Royal Navy and Royal Marines, and (b) for temporary officers R.N.R., R.N.V.R., retired, and emergency officers. For permanent officers on the active list a sum ranging from £15 in the case of a Paymaster Cadet, to £720 in the case of an Admiral of the Fleet, will be paid for the first year's service or part thereof. For each additional month after a year's service there will be an increment of £1. £2, or £3 according to rank, in the case of officers who have served at sea or overseas; or of 10s., £1, or £1 10s. in the case of officers who have not so served. Generally speaking, all naval service on full pay during the war will count towards the gratuity, but the maximum service is limited to five years, or to the statutory date for the termination of the war, whichever is reached first. The gratuity will be based on the relative rank (acting or confirmed) held on November 11th, 1918, but provision is made for subsequent advancement in rank. Retired officers or officers on the emergency list who are reinstated on the active list during the war will receive the gratuity under this Order instead of that laid down for officers on the retired lists.

Officers of the R.N.R. and R.N.V.R. receiving naval rates of pay will be granted a gratuity of 100 days' pay for the first year's service, or part of a year's service, and fifty days' pay for each subsequent year or part of a year's service. The cases of temporary medical officers are being dealt with separately, though it is not stated how. Further on the Admiralty Order lays down that gratuities will not be paid to, among others, officers serving under special contracts which provide for the issue of a gratuity. In such cases an officer may elect to take the gratuity under this Order instead, if more advantageous. Surgeon Sub-lieutenants R.N.V.R., who were allowed to resign to resume their medical studies are ineligible only when less than six months' service as an officer has been rendered. The gratuities will be issued on demobilization, and will be based on the full pay (exclusive of any allowances) of the acting or confirmed rank held at the date of demobilization, or if such is later than November 11th, 1918, on the latter date if more advantageous to the officer.

In the case of deceased officers the gratuity will be payable to the estate.

Military Service.

In the case of officers holding permanent commissions on the active list of the Regular Army the gratuities issuable in recognition of war services are set out in a schedule to a Royal Warrant, dated February 10th, 1919. War service is defined generally as commissioned service within periods beginning from August 4th, 1914, inclusive, and ending at the date of the termination of the war as statutorily defined, or August 3rd, 1919, whichever comes first. It includes any war service with the Egyptian Army, West African Volunteer Force, King's African Rifles, or in the Navy, Marines, or Air Force, which will qualify for a war gratuity under this Warrant had such service been in the Army. The minimum gratuity varies according to rank, thus: For a second lieutenant it is £35; for a lieutenant, £40; for a captain, £45; for a major, £60; for a lieut.-colonel, £75; for a colonel, £100; for a brigadier-general, £140; for a major-general, £200; and for a lieut.-general, £370. The definition of rank for

the purpose of the war gratuity is prescribed by the Army Council. Officers who have completed more than one year's commissioned war service will receive a further sum in respect of each additional month or portion of a month of commissioned war service, subject to a maximum of forty-eight such increments. If with service overseas this monthly increment will be £1 for officers of ranks or appointments carrying a minimum gratuity up to and including £75, £2 where the minimum gratuity is £100 or £140, and £3 for officers of higher rank. If with no service overseas the monthly increments will be reckoned at half the above rates.

The gratuity will in no case be issuable in addition to any gratuity under Article 497 of the Royal Pay Warrant; nor to an officer whose services are dispensed with, or who resigns his commission for misconduct or for other causes held by the Army Council to disqualify; nor to one who has relinquished his commission owing to ill health due to his own misconduct; nor to one who before November 11th, 1918, voluntarily resigned his commission after less than two years' service; nor to one who relinquished it on account of ill health not due to military service after less than six months' commissioned service. The gratuity will be credited to the estates of deceased officers direct from the War Office.

The British Medical Association is making inquiries as to the position of temporary surgeons R.N. and of Territorial, Special Reserve, and temporary officers of the R.A.M.C. in respect of war gratuities.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following medical degrees have been conferred:

M.B. and B.Ch.—F. Gray.
M.B.—H. W. Hales.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

MR. T. B. JOHNSTON will begin on March 3rd, at University College, London, a course in anatomy for the Primary Fellowship Examination, specially suited for R.A.M.C. officers who are entering for the examination in May, 1919, under the special terms arranged by the Royal College of Surgeons. Particulars can be obtained from the Secretary of University College.

UNIVERSITY OF BRISTOL.

THE following have been approved at the examinations indicated:

FINAL M.B., Ch.B.—Part II (completing examination): A. G. Bodman, Elizabeth Casson, Evelyn B. Salter, A. D. Symons, R. F. White. Part I: Sukhasagar Datta, T. H. A. Pinniger. D.P.H.—J. W. Gilbert.

UNIVERSITY OF LEEDS.

DR. J. B. HELLIER has retired from the chair of obstetrics which he has held since 1908. He has been connected with the Leeds School of Medicine from his student days. He was appointed demonstrator in anatomy in 1881, became lecturer in materia medica and therapeutics in 1884, and was lecturer on diseases of women and children from 1889 to 1908, when he was appointed to the chair of obstetrics. He was Dean of the Faculty of Medicine in 1917-18. Dr. Hellier, who does not intend to retire from private practice, has been succeeded by Dr. E. O. Croft, who has been lecturer on gynaecology since 1908, and is a member of the staff of the Leeds Hospital for Women and Children and of the Maternity Hospital.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

AT the monthly meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on February 3rd, Major-General Sir William B. Leishman, K.C.M.G., C.B., F.R.S., was admitted an Honorary Fellow. At the same meeting the following were admitted as ordinary Fellows: Donald MacPhail, M.D., Coatbridge, and John Nairn Marshall, M.D., Rothesay.

M. M. LAFERRE, the French Minister of Public Instruction, recently appointed a scientific commission to report on the faculties and laboratories in Alsace and Lorraine. It presented a scheme of reorganization of the University of Strasbourg. In accordance with a wish expressed by Alsatian students, the university was reopened on January 15th. Most of the professors of the Paris and provincial faculties, entrusted with the teaching till final arrangements can be made, were present at the ceremony. The immediate task of the new university is to afford Alsatian students the means of rapidly completing studies already begun or of commencing a first year curriculum drawn up in accordance with French methods.

Obituary.

E. O. PRICE, M.D. EDIN., J.P.,
Bangor.

DR. EMYR OWEN PRICE, who died on February 7th, was born at Holywell, Flintshire, on July 19th, 1857. He was educated at St. Asaph Grammar School and the Edinburgh High School, and graduated M.B., C.M. in the University of Edinburgh, 1879, and M.D., 1891. He was one of the founders of the Students' Union at Edinburgh. In 1882 he took the practice of Dr. Ellis at Bangor, and had immediately to face a severe epidemic of enteric fever. He was appointed medical officer and public vaccinator of the Bangor District and Workhouse, and later to the University College of North Wales and to the Normal College, Bangor. After some years he was elected honorary medical officer to the Carnarvonshire and Anglesey Infirmary and later honorary surgeon to the same institution, a post which he held with increasing interest and efficiency until the end. He had been president of the North Wales Branch of the British Medical Association, and for years the annual representative of his Division to the Council of the Association. While the National Insurance Act was under consideration and negotiations were proceeding between the medical profession and the Government, he was elected by the British Medical Association on the Advisory Committee. In that capacity he had to sacrifice a great deal of his time and energy, his visits to London were frequent and his labours were strenuous and valuable. In recognition of such splendid services the medical men of North Wales presented him with a motor car. He became the first chairman of the Panel Committee of the county, and continued to retain that position until about a year ago, when he found it necessary to ask to be relieved of its duties. A few days before that date, and when his strong and clear mind was in full vigour and activity, the shadow of the dread angina pectoris fell upon his brave and noble spirit with all the superadded force of the knowledge that at about his own age then, his father had succumbed from the same cause. Nevertheless, he responded with admirable courage and success to the many extra calls of the war period upon his time and strength. He continued to attend the operating theatre of the Infirmary at any hour of the day and night. He became one of the medical officers to the Military Hospital at Bangor, took his share of the duties left to the remaining men by those local colleagues who had taken commissions in the R.A.M.C., was the chairman of the Local Medical War Committee, and worked hard to find fit and available men for the front; took a very active part in the establishment of the V.A.D. centre at Bangor, and took charge with keen interest of the maternity and child welfare clinic. Finally, he even had the alertness to seize with vigour an opportunity to think out and prepare a scheme for a public health laboratory for North Wales in connexion with the proposed new science department as a soldiers' memorial in the University College of North Wales. He visited the various county councils of North Wales to present this scheme, and with convincing eloquence succeeded in carrying the scheme through. He was a justice of the peace for the county of Carnarvon. It is feared that the strain during the severe epidemic in November taxed his strength too greatly. His condition since Christmas had caused anxiety, but no one was prepared for the end, which came on February 7th suddenly.

This were no place to refer at length to Dr. Price's many and various accomplishments. He was a richly gifted man, strong in character and intellect, widely read, endowed with sound common sense, and possessed an ever ready and witty speech. He will be greatly missed as adviser, friend, and counsellor, both locally and in the Representative Body. He is survived by his wife, three daughters, and one young son.

DR. JOHN ALBERT MANTON, a well known Sheffield medical practitioner, died on February 4th from pneumonia following influenza. He was born at Wakefield in 1864, and studied medicine at St. Bartholomew's Hospital and at the medical schools of Leeds and the University of Durham, obtaining the M.R.C.S. and L.R.C.P. diplomas in 1886. Two years later he began practice in the Park

district of Sheffield. Among other early appointments, he was demonstrator of anatomy in the Sheffield School of Medicine. For many years Dr. Manton took a prominent part in municipal life as a member of the city council and a guardian. In addition to the work of a large private practice, he held the appointments of medical officer to the Sheffield Post Office and to the Education Department. He spent his holidays in travel, and made good use of his experiences, both on the platform and in various literary contributions. He visited Serbia in 1899, and wrote a series of sympathetic articles on life in the Balkans, in recognition of which he was appointed by King Alexander of Serbia a Chevalier of the Order of St. Sava. He was an enthusiastic cyclist, and was for many years president of the Sheffield Road Club, in this way adding year by year to his knowledge of local roads and of the antiquarian lore of the countryside. Dr. Manton leaves a widow, a son, and two daughters. He was for many years a member of the Sheffield Division of the British Medical Association.

The death took place at Pretoria, on October 23rd, of Dr. DONAL M. BARRY, pathologist on the staff of the Pretoria Hospital. Dr. Barry was born in Ireland, and was educated at Clongowes Wood College and Queen's College, Cork, whence he graduated M.B., B.S., of the late Royal University of Ireland, in 1908. In his student days he was a well-known footballer. After a short period of practice in England, he was appointed house-surgeon to the Pretoria General Hospital. He returned home in 1914, and, after obtaining the D.P.H. diploma, was appointed pathologist to the Pretoria Hospital. The heavy strain of the recent influenza epidemic in South Africa overtaxed his health, and he fell a victim to influenzal pneumonia. Dr. Barry was a member of the Pretoria Branch of the British Medical Association. His untimely death is deplored by a wide circle of colleagues and friends.

In the JOURNAL of February 8th there appeared a brief notice of the death of Dr. H. S. COGHILL, West African Medical Staff. The following further particulars are supplied by one who knew him intimately and had worked much with him: From 1909 to 1911 Dr. Coghill was demonstrator at the London School of Tropical Medicine. In 1913 he and Dr. H. M. Hanschell were sent by the Colonial Office to Sekondi, Gold Coast, to take part in the investigation of non-malarial fevers. Later Dr. Coghill left for the Northern Territories of the Gold Coast to investigate a reported outbreak of yellow fever. His careful work there brought to light facts proving that a disease clinically closely resembling yellow fever had been known among the natives for at least two generations. The disease—in recurring epidemics—had always come from the north in the Sudan. *Stegomyia calopus* was found right up to the Sudan frontier. The Hansa traders coming down to the coast from the Sudan and Northern Territories knew the disease. The importance of this—if it be yellow fever and not, say, "infective (spirochaetal) jaundice"—is that it explains the infection of the coast periodically with yellow fever, always a puzzle before, for no direct ship communication with known yellow fever centres existed. Coghill was generosity and honour personified; great patience and care marked his work. A large number of friends in West Africa must mourn his death, and the service itself has suffered a heavy loss.

Medical News.

DR. JOHN ADAMS, of Glasgow, happily recovered from a serious illness, was among those who attended the investiture on February 18th to receive the M.B.E.

A COURSE of lectures and demonstrations on surgical dyspepsia will be given at the London Hospital Medical College by Mr. A. J. Walton, assistant surgeon to the hospital, beginning on Monday next.

MAJOR-GENERAL WILLIAM C. GORGAS, formerly Surgeon-General of the United States Army, has been named a Commander, and Dr. Simon Flexner, director of laboratories of the Rockefeller Institute for Medical Research, an Officer of the French Legion of Honour.

THE murderous severity of influenza is illustrated by two recent reports. The one is that fully one-seventh of the population of Papetee, Tahiti, have died of influenza, the elder generation having been virtually wiped out. The other is the estimate that in Mexico the epidemic of influenza caused approximately 432,000 deaths.

Major-General Sir Robert Jones, C.B., F.R.C.S., Major R. C. Emslie, F.R.C.S., and Major W. H. Trethowan, F.R.C.S., have been elected honorary surgeons to the Royal National Orthopaedic Hospital, London. Arrangements are being made for the establishment of a country branch for the hospital as well as for the enlargement of the present buildings.

THE Medical Research Committee has issued a report by Captains H. Marrian Perry and H. L. Tidy, R.A.M.C. (H.M. Stationery Office. Price 9d.) on an investigation of an epidemic caused by *Bacillus aertrycke*, a so-called "food poison infection," of which Drs. A. J. Jex-Blake and W. James Wilson gave an account in the BRITISH MEDICAL JOURNAL of September 21st, 1918, p. 310.

THE Section of Laryngology of the Royal Society of Medicine has arranged to hold a summer congress on Friday, May 2nd. Papers will be read in the morning; in the afternoon there will be demonstrations of cases, operations, specimens, and instruments, and it is proposed to arrange a pathological museum. The meetings of this section have been well attended during the war, among those present being many American and overseas laryngologists, and they are invited to take part in the summer congress.

PROFESSOR F. DE LAPERSONNE will begin a course of ten lectures on the surgery of the eye and orbit on March 11th. The course will be given at the Hôtel Dieu, Paris, and will include operative surgery. It is intended for doctors and students of allied and neutral countries. Professors Laperonne and Terrien and Dr. Velter will begin on May 6th an advanced course on practical ophthalmology and laboratory work, open to French and foreign students. Further particulars can be obtained on application to Professor Laperonne, at the Hôtel Dieu.

AT the meeting of the Executive Committee of the War Emergency Fund of the Royal Medical Benevolent Fund, held on February 4th, Lieut.-Colonel Sir Alfred Pearce Gould in the chair, several applications for assistance were received, and grants amounting to £450 were made. Applications for assistance, marked "Confidential," should be addressed to the Honorary Secretary, 11, Chandos Street, Cavendish Square, W.1. For this Fund about £21,000 has been raised; it is believed that a further £9,000 will be required. Subscriptions should be addressed to the Honorary Treasurer, at the above address.

THE programme of the Rockefeller Foundation for 1919 includes large enterprises in public health and medical education and the completion of its war work. The public health activities will be directed chiefly against yellow fever, tuberculosis in France, malaria, and the hookworm disease. General Gorgas is the head of the Yellow Fever Commission. The Commission on Tuberculosis in France will continue its work with a larger budget; the war against hookworm will be waged in twelve States of the American Union and twenty-one foreign states and countries. Grants have been made for special studies and demonstrations in mental hygiene, for school hygiene and public health at Johns Hopkins University, and for the development of public health nursing. The chief work on medical education will be the development of training in modern medicine in China.

AN order by the Food Controller dated February 14th removes the restrictions on the use of lard in the preparation of articles other than foodstuffs, and it may accordingly now be used in the manufacture of ointments and other medicinal preparations. It will be remembered that the committee appointed by the Home Office in August, 1914, to deal with the question of economy in the use of drugs during the war, issued a memorandum on medicinal oils and fats, which was published in the JOURNAL of September 14th, 1918, p. 296. It was stated therein that since lard could no longer be dispensed either as such or as an ingredient of a prescription, a base consisting of 5 per cent. wool fat, 10 per cent. hard paraffin, and 85 per cent. soft paraffin had been placed on the market as a suitable substitute for most cases in which lard would have been ordered. Formulae were constructed containing this base (named for convenience *Adeps factitius*), and these and other war emergency formulae were published by the Pharmaceutical Society in the *Codes Addendum*, 1918.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

INCOME TAX.

H. M. D. inquires how much income tax he will have to pay on a total income of £550. He pays £67 6s. 8d. in insurance premiums.

* * As H. M. D. does not state what portion of his income is unearned, the answer cannot be given. It may, however, be sufficient to say that if his income is £500 earned and £50 unearned the total tax payable will be as follows:

	£	s.	d.
1. Earned ... ..	...	...	500 0 0
Less abatement	£100	0 0	
.. Life assurance	£67	6 8	167 6 8
			332 13 4
Duty on £332 13s. 4d. @ 3s.			49 18 0
2. Unearned: £50 @ 3s. 9d.			9 7 6
Total	£59	5 6	

LETTERS, NOTES, ETC.

A DISCLAIMER.

DR. PAUL BOUSFIELD (London) writes to disclaim all knowledge of the identity of the writer of an article in the lay press eulogizing the psycho-therapeutic treatment at the Ministry of Pensions clinic, or of the fact that any such articles were about to appear.

SHORTAGE OF PRIVATE NURSES.

A CORRESPONDENT in the Midlands sends us a strongly worded request to call the attention of the military nursing authorities and the Ministry of Labour to the great shortage of private nurses which, in view of the fresh outbreak of influenza, is causing serious hardship to private patients. He argues that as a million and a half men have been demobilized many army nurses could now be released, but states that very few have been so released, and these either on compassionate grounds or because they had been asked for by bodies such as health committees or district nursing societies. Apparently the position of the private nurses who form the bulk of the members of the Queen Alexandra Nursing Reserve and Territorial Nursing Association has not been appreciated by the authorities, as they are being retained by the army. The matter is undoubtedly urgent, and will, we trust, receive early attention.

IS INFLUENZA INFECTIOUS DURING INCUBATION?

DR. HELEN G. LEYTON (Oxford) writes: So far as I am aware, little attention has been paid to the possibility—we ought perhaps to say to the probability—of influenza being infectious during incubation. The following pair of cases goes far, I think, to substantiate it: Mrs. A., an invalid, was attended only by her daughter and by Mrs. B. She saw no other visitors. On Monday, February 10th, Mrs. B. last attended her, Mrs. B. being then presumably in the incubation stage of influenza, with which she fell ill on Wednesday, February 12th. On Friday, February 14th, Mrs. A. also was attacked. The inference is that Mrs. B., while in the incubation stage of the disease, infected Mrs. A. Her incubation

period appears to have been at least three days, but I have seen several cases in which certainly a week has elapsed from the time of possible infection to the onset of the disease. The possibility of the incubation period being infectious necessitates more drastic though less hopeful prophylaxis.

THE PREVENTION OF VENEREAL DISEASE.

SURGEON COMMANDER P. HAMILTON BOYDEN, R.N., writes: With respect to the article which appeared in your issue of February 8th under the names of Sir Archdall Reid and myself, I desire to make it clear that the prevalence of gonorrhoea amongst those who used nargol jelly as a preventive applied to the period prior to April 1st, 1918. Shortly after this date the issue of nargol jelly was discontinued in the Royal Navy, calomel cream remaining the sole official prophylactic against both syphilis and gonorrhoea.

"A REFORMED MEDICAL BOARD."

MEMBERS of National Service Medical Boards who wish to relieve the tedium of waiting for the next recruit to present himself might have been advised to read the *Short Diary of a Reformed Medical Board*, by J. S. M. (Warrington: Mackie and Co., Ltd.). The essence of the reform is stated to consist in appointing a barrister with the status and emoluments of a recorder as president, since none but a barrister can appreciate the value of evidence. Before this individual Captains Koff and Flem, R.A.M.C., appear to represent the War Office, while Drs. Pessary Smith and Panell Jones represent the recruit through the Local Government Board. The cases are argued at great length, and his Honour's summing up is worthy of the highest traditions of the legal profession. On the whole, an amusing *jeu d'esprit*.

THE TREATMENT OF WAR PSYCHONEUROSES.

DR. J. E. MIDDLEMISS, Medical Officer to the Leeds Mental Deficiency Act Committee, (late) Lieutenant R.A.M.C., writes: In your issue of February 8th Captain Prideaux evidently wishes to pin me down to facts, though I am not conscious of having burked the facts in any remarks I have made. Need I reiterate that it is impossible for me or any other writer to traverse Captain Prideaux's findings? When he states that he finds that "forgotten experiences are the rule in psychoneurotic patients" I must necessarily accept his statement. Apart from my own experience, *hanc parva res*, he will perhaps allow me to extend the same consideration to the observations of other writers in this field. There is fortunately in contemporary medical literature abundant evidence that many cases of psychoneurosis are successfully treated every day without invoking the principles of psychoanalysis. It is, of course, open to Captain Prideaux to object that these cases, like his own, if analysed, might reveal "forgotten experiences." The fact remains that the cases in question have been cured without any reference to such experiences, and this not empirically but by a logical and reasoned process. Many men, for instance, have broken down in the present war simply through a want of adaptability. The recognition of this fact and a restoration of the sufferer to his normal *milieu* are frequently all that is necessary to bring about a "cure." The treatment may seem rather banal, but this detracts nothing from its efficacy, and it is fundamentally rational. This is the type of case I had in mind when I asserted that "where the all-pervading sense of depression is present, argument, persuasion, and counter-suggestion are usually futile." This may or may not serve to answer my critic's inquiry as to what form of treatment is available other than psychoanalysis, counter-suggestion, etc. It is no part of my business to make an inventory of the recognized forms of mental treatment, but there are quite a number. Assuming that none of them are successful, why not evolve one suited to the exigencies of the case, a sort of mental autogenous vaccine? If the patient will not conform to your method, the only way out of the impasse is to adapt your method to the patient, however destructive it may be to one's personal predilections.

THE following appointments of certifying factory surgeons are vacant: Clevedon (Somerset), Sheffield, East (Yorks, West Riding), Ballyward (Down), Braemar (Aberdeen), Castlederg (Tyrone), Wakefield (Yorks, West Riding), Wrotham (Kent), Gortin (Tyrone), Broughton Astley (Leicester).

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NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

THE IMPERIAL COLLEGE OF SCIENCE, KENSINGTON:

ITS HISTORY, ORGANIZATION, AND ACHIEVEMENTS.

SIR ALFRED KEOGH, G.C.B., M.D.,
RECTOR OF THE COLLEGE.

THE history of the development of the Imperial College of Science and Technology should prove interesting to the medical profession. The realization of the aims of the College in the region of pure and applied science is, despite difficulties, an example which gives encouragement to the belief that improvement in education and research in medical science and its applications is no mere dream.

THE HISTORY OF THE COLLEGE.

This is not by any means the first time that Kensington has done pioneer work in the cause of education and research. It should be a source of pride to us as members of our profession to reflect that the traditions and progressive tendencies which characterize the educational movements at Kensington were initiated by Huxley, and that the spirit which he infused still lives, though the objects differ. As it was from Kensington in the old days of the Science and Art Department that missionaries of education in the application of the physical and natural sciences went forth to the provinces to assist in the establishment of the technical schools, so to-day it is to Kensington we must refer the enlightened policy which, foreseeing the impending calamities which a neglect of science was likely to bring upon our industries, led to the foundation of this institution. For the need for the training of teachers had passed with the establishment, as a consequence of the Technical Education Acts, of numerous schools of science throughout the country, and the mission of the Royal College of Science had been fulfilled. The Royal School of Mines had shared in the consequent general lapse of the Kensington movement, though the establishment in the region, by the City and Guilds of London, of a College of Engineering kept alive the local tradition.

In the meantime alarm had spread amongst those to whom the importance of the recognition of education and research in relation to the development of science in the arts and industries was fully known. The rapid educational movements in Germany and America had led to a state of industrial efficiency which bade soon to place British industries in a position of inferiority, and indeed had in many instances already done so. Germany had devoted her greatest energies to the developments of technical education. She had, for example, utilized in her factories the chemical researches of the schools, and German factories continually demanded more knowledge and more scientific workers. It was the same in every branch of industrial work. Switzerland was early on the scene in a corresponding development, to which is due the great school at Zurich, set up for the purpose of developing higher education in applied science. In America these European models were generally followed and led to the establishment of the splendid schools and colleges for the study of science and technology which are characteristic of the United States. Everywhere, in fact, except in Great Britain and Ireland, the movement was in full swing, and it was little wonder that alarm at the consequences of indifference spread. Subsequent events have led to a general realization by the country of those things which were formerly familiar only to a few.

It is not possible within the limits allowed me to relate in detail the story of the movement which culminated in the conversion of the three Schools of Science at Kensington into a confederation of Colleges, the whole virtually a Science and Technical University, under the name of the Imperial College of Science and Technology. Suffice it to say that a mere recapitulation of the names of those who shared in the task of its formation would prove that the best brains of the country had been drawn upon to set forth not merely the need but the methods of accomplishing this most necessary task.

THE ORGANIZATION AND DEPARTMENTS OF THE COLLEGE.

It is rather to the results, which the medical profession who desire it will soon have an opportunity of seeing, during the Clinical and Scientific Meeting of the British Medical Association next April, which will be held in the College, that I prefer, in response to an invitation, to confine myself.

The seven buildings at South Kensington, five of them new, are engaged in giving the highest specialized instruction in various branches of science, especially in their applications to national needs, and are abundantly equipped to enable them to supply the most advanced education and to offer facilities for the highest researches in pure and applied science. To undertake so ambitious a task ample means in money were provided, and great increases in the staff and equipment were made to meet the necessities of so comprehensive a programme. The annual reports of the College are published, and, turning to the financial statements in them, we find that the gross value of the College is now £1,216,299, that increases to furniture, fittings, and scientific apparatus have cost £62,698, and that on additional new buildings the Governors have expended £279,240. The total income of the institution is over £90,000 a year. New chairs have been established and new departments set up. But these things, necessary as they may have been for the successful development of the institution and for the realization of the ideals of the Governing Body, are less attractive to the scientific worker than the quality of the staff. I will not recapitulate the departments, much less their subsections, but a glance at the calendar, which sets forth in great detail the scope of the work, shows us:

In the *Royal College of Science*, Professor Callendar, F.R.S., Director of the Department of Physics, assisted by Professor Fowler, F.R.S., Professor the Hon. R. J. Strutt, F.R.S., Professor Watson, F.R.S., and Assistant Professor S. W. J. Smith, F.R.S. Professor Baker, F.R.S., is in a corresponding position in the Department of Chemistry, with Professor Thorpe, F.R.S., as head of the Organic side, Professor Bone, F.R.S., head of the Department of Chemical Technology, and Professor Philip responsible for Physical Chemistry.

In the *Royal School of Mines*, Professors Frecheville and Carpenter, F.R.S., are the heads of the Mining and Metallurgy branches. Professor Watts, F.R.S., is responsible for the Geological Department and Oil Technology.

The *Engineering College* is controlled by Professor Dalby, F.R.S., Professor Mather, F.R.S., and Professor Dixon, respectively responsible for Mechanical, Electrical, and Civil Engineering.

The branch which deals with *Mathematics Pure and Applied*, is staffed by such Professors as A. R. Forsyth, F.R.S., and A. N. Whitehead, F.R.S.

The *Biological Department*, which must have a special interest for readers of the *BRITISH MEDICAL JOURNAL*, has as its head and director Professor Farmer, F.R.S., with Professor Blackman, F.R.S., responsible for Plant Physiology and Pathology (the late Professor Plimmer held the Chair of Comparative Pathology in this department), and Professor MacBride, F.R.S., for Zoology, the subdepartments of Cytology and Entomology coming under the control of Assistant Professor C. Dobell, F.R.S., and Professor H. Maxwell Lefroy respectively.

Students of these and other branches of science will recognize in those names leaders of scientific thought of whom any country might be proud, and it is not to be supposed that in the competition and rivalry of nations the part which it is now recognized science may play in the development of industries and in practical applications to the arts, the Imperial College is not destined for great achievements.

It must not, however, be assumed that whatever progress has been made by the College since its foundation it has nearly realized its ideals. To some extent the desire which has been evinced to stand aloof from educational politics in London has, by withdrawing it from public notice, also limited its development. On the other hand, its peculiar position in the educational world has procured for it support amongst those who know which it might otherwise have lacked. Even the Royal Commission of the University of London, bent on attaining the harmony and order in educational procedure which cannot be too highly praised, found it necessary, even at the sacrifice of

some symmetry, to realize the ideals of its founders, and only erred in evincing timidity in recognizing the need for an Imperial School of Science and research as distinct from a local institution. Something not dissimilar has previously occurred in Medicine.

VIRTUALLY A SCIENCE UNIVERSITY.

I have described this confederation of colleges as virtually a science and technical university, and the phrase may stand. It has been taken to assume the formation of a uni faculty university, and is regarded as at once a heresy and a paradox. It is neither. The proposal is for a three-faculty university—science, mining, and engineering. I am not myself wedded to the phrase, but if an imperial ideal has been the thought fundamental which has all through led to the establishment of the College, the dependence of such an imperial institution upon other universities for its academic distinctions is surely destructive of the imperial ideal. Nor is the idea distinctive of the Imperial College. It exists elsewhere in other branches of work, and may find realization later by the coalescence of similar movements into an Imperial University. However that may be, this trend of thought has definitely influenced the character of the teaching and the research at Kensington, as was intended, and it would be folly to depart from a policy so thoroughly considered, and upon which so much money and effort has been lavished.

The institution has been established for the vocational training of men intended for the professions of chemistry, the various branches of engineering, economic biology, etc., and this vocational training requires for its essential sub-structure a wide general scientific training of such a kind that the special courses in the special professions are all founded on common courses in science. The system of training is that still known as the Huxley system. The tutorial and laboratory method characterizes it at every part. The students in the departments of physics, chemistry, geology, etc. learn the use of instruments by handling them until technique and scientific method become part of their very being. Set lectures are reduced to a minimum. The student may be said to discover for himself under the inspiration of his tutors. The applications of science serve as the models to illustrate the principles. The ample equipment renders possible the adoption of a system which avoids dependence for its teaching on textbooks and demonstrations.

A LESSON AND A MODEL FOR MEDICINE.

In the daily round of my own duties as *serrus professorum* it would be strange indeed if my thoughts did not frequently turn to my own profession and its splendid possibilities in the educational sphere, especially in London. It often strikes me that the parallel between medicine, chemistry, biology, mining, etc., is complete. The foundations are the same, and only the applications are different. At a particular period in his career at the Imperial College a student of any of the departments of knowledge could be diverted to medicine without delay or disadvantage, for, as I have said, the foundations are the same. The systems and methods of Kensington are applicable to medicine, and since they are costly they could only have been attained by combination of effort amongst the three constituent colleges.

Is there not in the history of the Kensington movements an example which may well be followed by the London medical schools? If the individuality of the separate schools here is retained while a combined effort for mutual assistance and support is sustained in the confederation of colleges, why should not the same system operate in medicine? It is true that combination of effort is difficult to secure in medicine, but, after all, in my experience, it is no less difficult in other professions. It must not be supposed that the path of the reformer at Kensington has been strewn with roses any more than it is anywhere else. All that can be said is that a sense of a common misfortune has proved stronger than vested interests. The tendency in medicine is centrifugal.

Combination, discipline, establishment of principles have carried Kensington as far as it has yet gone. Similar efforts in London medicine should lead to similar results, and one day perhaps we may see in London and elsewhere an Imperial School of Medicine, an Imperial School of

Law, an Imperial School of Art, as we have to day an Imperial School of Science and Technology. It may be the mission of the Universities Bureau to bring together the now scattered elements of such a confederation for the formation of a great Imperial University.

THE DEFENCE OF THE RESPIRATORY MEMBRANE AGAINST INFLUENZA, ETC.

BY

LEONARD HILL, M.B., F.R.S.,

DIRECTOR, DEPARTMENT OF APPLIED PHYSIOLOGY, MEDICAL
RESEARCH COMMITTEE.

IN the account of a research on the action of ozone¹ carried out some years ago with M. Flack, after pointing out the poisonous action of too high concentrations on the lung, and the oedema and pneumonic condition produced thereby, and that very low concentrations could safely be used to add a quality to the air and take away offensive smell, we added the opinion "that ozone might possibly have some value in the treatment of disease of the respiratory tract if used in a concentration which produced a slight irritation and thus brought more blood and tissue lymph to the part."

Observations have demonstrated that the concentration which can safely be used in ventilation does not destroy bacteria in the air, and inhibits their growth on media slightly if at all. The respiratory membrane is much more easily attacked than the micro organisms protected by their waxy or other resistant cuticle.

A poison gas like ozone, phosgene, or chlorine, when inhaled is concentrated by solution in the secretion covering the membrane, and the membrane defends itself by secreting fluid and so diluting and washing away the poison; hence the oedema of the lung, which increasing finally puts an end to the gaseous exchange and drowns the subject. The membrane responds in the same way to bacterial toxins.

How much a poison gas may have to be concentrated is shown by some experiments we carried out in 1915 on ciliated epithelium. While 1 in 100,000 of chlorine by volume is too irritating to breathe, it took over 1 in 40,000 by volume of chlorine to stop the movement of the cilia when chlorine water was added to the preparation.

In the case of smells, while it is true of certain substances that 1 in 100 million parts of air may be smelt, yet concentration of unknown extent must in this case also take place in the fluid bathing the olfactory sense organ. The act of sniffing, by directing the air on to one part of the membrane, must bring about this concentration.

In researches on the influence of atmospheric conditions on the nose² I have put forward the important influence which cool air—cool and therefore of low vapour tension—has on bringing more arterial blood to the respiratory membrane, and increasing evaporation from and therefore flow of tissue lymph through it. Warm moist atmospheres are against this natural washing and immunizing defence. In this, I claim, lies one explanation of the good effect of open air treatment, and the ill effect of crowded tenements. Exercise in the open air, by increasing the breathing perhaps five times, greatly increases the blood flow through and evaporation from the respiratory membrane, and in this lies one of the good effects of exercise. At Alpine health resorts the air is not only cool, but owing to its tenuity a greater volume must be breathed.

By some observations made in the recent spell of frosty weather, breathing first in and out of the nose, next in by the nose and out through the mouth, then in by the mouth and out through the nose, lastly in and out through the mouth, and taking the temperature with a thermo-junction inserted far back in the nose, I find the cooling, and therefore the evaporative, power of the air is by no means spent in the nose, but acts on the deeper parts and probably right down to the smaller tubes of the lungs. Especially is this the case when the breathing is made deep and the lungs fully expanded. A man may in an hour easily evaporate an ounce and a half of water from his membrane when taking exercise in cold weather.

There is another thing to consider, namely, the actual cooling of the membrane, which may check the growth of

of Ventilation and Open-air Treatment," to be published by the Medical Research Committee, the first part of which is now in the press.

¹ *Proc. Roy. Soc.*, 1911. ² *Lancet*, May 10th, 1913 (with Muecke); *BRITISH MEDICAL JOURNAL*, April 16th, 1916.

REFERENCES.

CAUSE, PREVENTION, AND TREATMENT OF INFLUENZA.*

By W. M. CROFTON, M.D.,

LECTURER IN SPECIAL PATHOLOGY, UNIVERSITY COLLEGE, DUBLIN; VISITING PHYSICIAN OF NATIONAL HOSPITAL FOR CONSUMPTION.

DURING the first epidemic in Dublin last summer I isolated the *Bacillus influenzae* (Pfeiffer) without difficulty from the respiratory discharges of the first patients investigated. The culture medium I use as a routine is agar + 10 in reaction carefully made according to Eyre's directions and containing 1 c.cm. of fresh defibrinated unheated blood to each 10 c.cm. It will grow any aerobic pathogenic microbe with facility and profusion, not only the *B. influenzae*, but such difficult customers as *Micrococcus meningitidis*, *M. melitensis*, and even the gonococcus.

It appeared, therefore, very significant that in all my years of routine cultures of sputum I had not come across a microbe satisfying the cultural characteristics of the influenza microbe until the present epidemic.

There are several reasons why this bacillus has come under suspicion as the cause of the epidemic:

1. It has not been grown when present in the discharges.
2. It has often not been recognized when it has been grown.
3. Other microbes, ordinary catarrh-producing microbes, such as members of the pneumo-streptococcus group and *M. catarrhalis* group, always grow, and since none of them can conceivably be held to account for a pandemic, a filter passer is thought to be responsible.

1. Certain conditions are necessary for the cultivation of the influenza bacillus. It rapidly dies out if allowed to cool to room temperature. Therefore the discharges must be got to the laboratory in the shortest time and kept warm if possible. The medium must be suitable—such a one as I have described above, which for vaccine making purposes is far the most suitable owing to the harmonic influence of the fresh human blood on the bacillus. The commonly used blood smeared agar gives very poor results. Fildes, Baker, and Thompson,¹ when using this medium, failed to isolate the bacillus, but when they used a more suitable medium they succeeded constantly, and came to the conclusion that it was the cause. Others—for example, Macintosh—have isolated it in over 80 per cent. of cases. Has any one ever isolated this bacillus in such percentages from any series of cases of respiratory catarrh apart from an epidemic of influenza? On the blood smeared agar at the end of twenty-four to forty-eight hours the bacillus forms tiny dewdrop-like colonies which are very difficult to see. On my medium the colonies at the end of forty-eight hours may be several millimetres in diameter, are smooth, round, and have a ground-glass appearance.

2. At the end of twenty-four hours, when just isolated, the individual microbes are exceedingly small, and are often quite indistinguishable from cocci, especially if the magnification is not sufficiently high. Three times have I known the bacillus to be mistaken for cocci and the microbe said to belong to the *M. catarrhalis* group. Isolated from the cerebro-spinal fluid in a case of cerebro-spinal meningitis, I have known it to be mistaken at first for the meningococcus. In this respect the bacillus is not singular; for many years the bacillus of Mediterranean fever was thought to be a coccus, hence its name, *M. melitensis*; on suitable medium it invariably grows as a bacillus. So, too, young colonies of *B. coli* consist often of solely coccal forms, which become bacilli on further growth.

3. The microbes well known as catarrh-producing, such as members of the *M. catarrhalis* or the pneumo-streptococcus groups, can at once be dismissed as causes of the

pandemic. None of them have ever been known to produce a pandemic. All of them are, of course, capable of producing epidemics and are responsible for the annual occurrences of pseudo-influenza. More recently certain very minute Gram-positive anaerobic microbes have been isolated in France in trench fever, polyneuritis, influenza, measles, rose measles, and two cases of typhus. They all appear to be similar and to have produced illness of very much the same type when injected into animals. They have also been isolated from the excreta of infected lice. I have no doubt such microbes do exist and do produce disease, but do they produce influenza? Quite similar microbes have been isolated from epidemic cerebro-spinal meningitis, from which the meningococcus can always be isolated. Does the filter passer produce this disease? If it does, we must stop using antiserum. It is important to remember that filter-passing Gram-positive cocci have before been isolated from cases of anterior poliomyelitis, and have been proved to be a phase in the life-history of streptococci and to have produced the disease in monkeys. Further, anaerobically and otherwise, streptococci can be grown so small that they pass through the Berkefeld and the coarser porcelain filters. I have made experiments with such a stolid microbe as the *Staphylococcus aureus*, and by varying the constitution of the medium have been able to make it vary in size from minute almost invisible dots to giant forms. It is well recognized that the tubercle bacillus can infect by such minute forms. Now streptococci of various sorts are constant inhabitants of the mouth and respiratory passages; they are always prepared to become pathogenic and complicate other infections. I suggest that in these cases these filter passers may be forms of streptococci or complicating infections *sui generis*.

The result of prophylactic inoculation with the antigen of the pure influenza bacillus adds great weight to the evidence for it as the cause. It is extremely easy to deceive oneself in this respect, because the incidence of the infection cannot absolutely be known. For instance, I know of one school of over 150 boys, all of whom got prophylactic injections, and none of them got the disease although it was raging in the vicinity. Dr. Parsons relates his experience of a school in which 30 per cent. of the boys got the disease. Half of the rest of the boys were then inoculated and half not. None of them, either inoculated or uninoculated, got the disease. Dr. Cremin, of Newcastle West, informs me that he inoculated 52 people in the midst of the epidemic, and only two mild cases occurred amongst them. On the other hand, much more significance is to be attached to the following results, because we have an indication of the extent of the infection. Dr. Keelan, of Mullingar, inoculated four members of the staff of forty-one of a racing establishment—all the uninoculated got the disease, not one of the inoculated. Among the students of University College, Dublin, of 132 uninoculated, 43.95 per cent. contracted the disease; of 113 inoculated, 21.2 per cent. contracted the disease, and of these all but 14.42 per cent. contracted it within twenty-four hours of inoculation; 14 per cent. as against 44 per cent. is a very remarkable contrast. If I had eliminated those who contracted it outside the three or four days' incubation limit the contrast would be still more remarkable. Among the attendants at Mullingar District Asylum only 4 per cent. of the inoculated developed the disease, over 50 per cent. of the uninoculated.

I think, then, it is certain that this pure influenza antigen had a marked prophylactic effect. The doses used were only 25 million in those who had colds and 50 million in those who felt normal. If I were doing it again I should not give more than 10 million to those who felt tired or had a slight headache, as they probably have the disease, and 25 million is too large a dose.

It is interesting to relate that several apparently quite normal persons have reacted to different doses and have had symptoms, lasting usually only an hour or two, exactly like those of influenza—namely, frontal and occipital headache, pains in the back and limbs, and severe malaise. I know of no other antigen which produces symptoms quite like these.

It is very important that the stock influenza vaccine should be potent. Making large quantities involves extensive subculturing. If the medium does not contain a substance—for example, fresh human blood—to induce the microbes to produce their specific toxins, they lose to a

* Read before the Medical Society, University College, Dublin.

large extent their antigenic efficiency. Further, there is no necessity to kill them by heat. They die rapidly when suspended in 0.5 per cent. phenol saline. The less heat used for killing antigens the better. *Staphylococci* require thirty minutes at 58° C. *Streptococci*, *pneumococci*, and *Micrococcus catarrhalis* require fifteen to twenty minutes at this temperature. My antigens are all counted on Thoma slides. I obtain the fresh human blood from the patients by running it through a suitable needle from a vein in the forearm into bottles containing broken glass; it is defibrinated by shaking.

Turning now to the treatment of uncomplicated influenza, two types are definable: (1) The patient is able to carry on his work, but feels abnormally tired and off his food, has slight headache behind his eyes and at the back of his head and some backache and soreness of the limbs, and (2) the patient suddenly collapses with a high temperature, pink conjunctivae, and all the usual symptoms.

If such cases are given at once $2\frac{1}{2}$ million pure influenza vaccine, followed at a suitable interval by 5 million, the disease is very rapidly cut short, often in twenty-four hours. In other cases further doses ($7\frac{1}{2}$ and 10 million) may be necessary. Post-influenzal debility, which is so difficult to treat, will rapidly yield to a similar course of treatment. Quite recently I have had two very remarkable cases.

A boy of 18, whom I had cured of a post-pneumonic chronic infection of the lung, had a mysterious temperature of 99.6° to 101° for months. It had come on after a second dose (50 million) pure influenza antigen. I greatly feared it might be tuberculosis, but he failed to react to tuberculin (H.T.S.), and the catarrh vaccine previously used produced no result. Thinking it might be due to a chronic influenzal infection, I gave him $2\frac{1}{2}$ million pure influenza vaccine; the temperature began to fall slowly during some days, but at the end of a week it began to rise again. I repeated the dose, when the temperature fell suddenly, and the patient is making a rapid recovery.

A medical student had a temperature for some days of 100° to 102° F. before taking to his bed. Then he began to see double. He became delirious and had hallucinations, but when talked to would rouse up and talk fairly sensibly. The conjunctivae were congested; he was badly constipated and wetted his bed; he had, in short, all the symptoms of encephalitis lethargica. On the chance that it might be influenzal I gave him $2\frac{1}{2}$ million influenza vaccine; the improvement was immediate. I followed it by 5 and $7\frac{1}{2}$ million, after which his mind was normal, but the temperature was still 99°. I then gave him 10 million, and all the old delirium returned, especially that night, although he had no further rise of temperature. He did not become mentally quite normal for two days. This reaction made it certain that the influenza bacillus or toxin was infecting his brain.

The blood of many cases who have suffered from influenza agglutinates the influenza bacillus sometimes in quite high dilution. The blood of one doctor who had had influenza some months before agglutinated the bacillus very strongly in a dilution of 1 to 160. As a rule, however, the agglutination is only given in much lower dilution.

The evidence, then, that the influenza bacillus is the cause of the disease is that—

1. The microbe appeared with the appearance of the epidemic.
2. It was isolated, when the conditions were suitable, from a large number of cases of the disease.
3. A pure influenza bacillus antigen produced a marked degree of prophylaxis even in the small doses used.
4. It rapidly cuts short the disease when the infection is uncomplicated; and cures the after-effects.
5. A pure influenza antigen can produce all the symptoms of the disease.
6. The serum of influenza patients agglutinates the influenza bacillus.

Complicating Infections.

I think in the recent epidemic there were two methods of infection with the complicating catarrh microbes. Either they accompanied the influenza microbe when it was passed on from one person to the other or the patient's own microbes flared up when his resistance was lowered by the influenza bacillus. There was no uniformity in the complicating microbe flora. Nearly all the worst cases of septic pneumonia had the *Staphylococcus aureus*, as well as streptococci, pneumococci, or *Micrococcus flavus*, or other Gram-negative cocci. The staphylococci are much the most to be dreaded.

The incubation period of these microbes is longer than that of the influenza bacillus, and the human organism can often overcome them if the help of the influenza bacillus

can be done away with in time; therefore, if the patient is given a $2\frac{1}{2}$ million dose of influenza vaccine at once, complications are prevented. If there are marked signs of catarrh—indeed, if there is sputum at all—it is highly desirable to give a mixed vaccine containing *Staphylococcus aureus*, streptococci, pneumococci, and *M. flavus*, as well as the influenza vaccine. The initial dose should be:

Staphylococcus	...	...	5 million
Strepto-pneumococcus	...	...	$1\frac{1}{2}$ "
<i>M. catarrhalis</i>	...	...	$1\frac{1}{2}$ "
<i>B. influenzae</i>...	...	...	$2\frac{1}{2}$ "

I always plate out the sputum or swab from the throat and get an autogenous mixed antigen as soon as possible. I also give the patient daily intravenous injections of diosal (1 per cent. sodium salt of di-iodosalicylic acid), beginning with 3 c.cm. in an average case. This substance is a very powerful intravital germicide for such microbes. The result of the combined method of treatment is often very remarkable and rapid.

Delayed resolution after the pneumonia is frequent. This can, as a rule, be rapidly cleared up with thiosinamine sodium salicylate (fibrolysin) or thiosinamine ethyl iodide (tiodine).

At the first sign of bronchial congestion, with cyanosis and dilatation of the right side of the heart, the patient must be given $\frac{1}{2}$ to 1 c.cm. doses of pituitrin as often as is necessary. This tones up the heart and bronchial muscles, or relaxes the latter if there is spasm. There is no other substance that gives this remarkable combined effect.

REFERENCE.

¹ *Lancet*, November 23rd, 1918.

THE TREATMENT OF INFLUENZA.

BY

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AND

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DURING the second phase of the epidemic—in the two months from October 10th to December 9th, 1918—there were admitted to a general hospital, B.E.F., France, 937 cases of influenza. The mortality was 26 (2.77 per cent.). We have reason to believe that this figure compares very favourably with that obtained in other places, and it may therefore be of interest to outline the treatment employed.

The first wave of the influenza epidemic terminated in the area towards the later part of the month of June. During July, August, and September only a few sporadic cases were seen. Early in October, however, the disease reappeared in a more virulent form, and in certain districts the mortality from it was very high. Nearly every case presented pulmonary symptoms in some degree, and at the commencement of the wave were serious in about one out of every four. In many there was a profound degree of toxæmia and a tendency to cardiac failure. The pulmonary complications included bronchitis, pleurisy, bronchopneumonia, and lobar pneumonia, and oedema of the lungs. Other complications were rare, but there were a few instances of nephritis, and one of purulent meningitis. Delirium, unconsciousness, and extreme tremor were frequently present in the severer types. It will therefore be apparent that the series of cases with which we are dealing included a large proportion of the most virulent infections. As practically all were admitted locally, they were admitted early—a great advantage, as each patient travels very badly.

The treatment in the acute stage may be related under six headings:

1. *The general management* was that of a fever. As far as possible, patients should be treated in the fresh air. In this hospital they were placed in large Adrian huts, the doors and windows of which were always kept widely open. A sufficiency of blankets and hot bottles were provided to ensure warmth, but overheating (which produces restlessness) must be avoided. The diet should consist mainly of fluids, milk, beef-tea, clear soups, egg-flips, jellies and custards. Beef-tea is especially valuable

because of its stimulant properties. The drinking of large quantities of water, barley water, or lemon water, should be encouraged, as elimination is thereby promoted and the degree of toxæmia reduced.

2. *Absolute rest* during the acute stage is of paramount importance. In the severer cases collapse, shown by laboured breathing, cyanosis, exhaustion, sweating, and rapid acceleration of the pulse, is produced by any degree of movement. The patient should be disturbed as little as possible by examination, which should always be as brief as is consistent with efficiency; however desirable it may be from an academic point of view to determine the precise nature and extent of the pulmonary complications, their exact diagnosis matters little so far as treatment is concerned, for this is indicated by the general condition of the patient, rather than by the pathological lesion present.

3. *Sleep must be ensured.* The result of a sleepless night at once shows itself by a falling off in the patient's general condition, and two or three such nights may make all the difference between recovery and death. Especially is sleep necessary in patients showing pronounced tremor; when this symptom is present the physician's first endeavour must be the production of sleep. He should regard tremor as an indication of exhaustion and a danger signal which he must not disregard. It has been our custom never to allow a sleepless night. Tepid sponging may first be tried, but, if insufficient, the patient should be given heroin gr. $\frac{1}{2}$, hypodermically, repeated once or twice, if necessary, at intervals of an hour and a half, until sleep is obtained. A satisfactory night's rest is almost always followed by considerable improvement in the general condition.

4. *Medicinal Treatment.*—We had had ample opportunity in the first stage of the influenza epidemic of testing the action of various medicinal agents, and were not satisfied that any of them exercised much influence on the course of the disease. At the commencement of the second wave we determined to test systematically certain likely remedies with the view of determining, if possible, their relative value, and of enabling us to adopt as routine treatment that which appeared to give the best results. Accordingly, groups of patients—fifteen in each—were put upon different drugs, and the progress of the various groups noted and compared. Aconite, aspirin, sodium salicylate, belladonna, arsenic, quinine, Dover's powder, and gelsemium were tested in this way. The results were most striking. The patients treated by gelsemium improved in a manner far exceeding those given any other treatment. They stated that after a few doses their headache and backache had been much relieved, and that they felt greatly better in every way. In most the temperature speedily commenced to fall, and the improvement in the general condition was obvious. So great was the contrast that it is no exaggeration to say that it was usually possible, without previous knowledge, to pick out the case treated with this remedy. Of the other drugs tested, belladonna showed evidence of beneficial action in a number of cases, but none of the other drugs appeared to have the slightest influence. The patients were not selected in any way, but were taken consecutively as they were admitted; moreover, we were working separately at the time, and came to the same conclusions independently. The same observation was also made by the sisters in charge of the wards, who enthusiastically supported gelsemium against the other remedies.

We are well aware of the fallacies attending judgement of the action of remedies, and have therefore endeavoured to examine very critically our original observation. For this reason we have delayed drawing attention to the beneficial action which we believe gelsemium to exert. The test was repeated with the same result—again so striking that thereafter we did not feel justified in using any other remedy. Seeing, however, that belladonna appeared also to be of value, we considered it advisable to use it in combination. All our recent cases, therefore, have been treated with the following:

R.	Tr. gelsemii	...	...	...	...	mxiij
	Tr. belladon.	...	...	...	...	mv
	Potas. cit.	...	...	...	...	gr. x
	Syr. aurantii	...	...	...	...	ʒi
	Aq. chloroformi	...	...	...	ad	ʒi

Sig. One ounce four hourly for the first 24 hours; thereafter $\frac{1}{2}$ oz. every four hours until temperature is normal

Potassium citrate was added as a mild diuretic. When the temperature reaches the normal the remedy should be stopped.

Gelsemium has previously been recommended as a remedy for influenza.¹ Our observations lead us to believe that it exerts a marked beneficial action on the course of the disease, that it tends to shorten the illness, and it undoubtedly relieves—and rapidly—the discomfort of the patient. Beyond slight ocular disturbances in a very small number of cases, we have not seen any disadvantages in its use.

5. *Stimulants* are indicated in the severe toxic cases; where the pulmonary symptoms are severe; where tremor is marked; where the pulse is unstable; and when the patient is obviously collapsed. Alcohol in the form of brandy, whisky, or champagne gives the best results, and the large quantities that can be consumed without producing any signs of inebriation is very remarkable. The usual dose required is half an ounce every four hours, or more often if the case be urgent. Should there be any suggestion of overdosage, aromatic spirits of ammonium ($\frac{1}{2}$ to 1 drachm) may be substituted. Tincture of digitalis (m. v every four hours) seemed to be useful when there were any signs of cardiac failure. Caffeine, strychnine, adrenalin, and pituitrin produce no beneficial action of any kind.

6. *The treatment of pulmonary complications* calls for no special discussion, as it is carried out on the usual lines. It may be mentioned, however, that the compound tincture of chloroform and morphine (m. x every four hours) is particularly efficient in soothing the often troublesome cough, and that inhalations of menthol and benzoin greatly relieve the tightness in the chest so frequently present.

Treatment during Convalescence.—The degree of debility produced by influenza of the recent type is often extreme, and is particularly associated with circulatory symptoms—palpitation, coldness, and blueness of the extremities, and a tendency to syncope—as well as marked general weakness. During convalescence a period of comparative rest is indicated, and a nourishing diet with extras—milk, eggs, port wine, and stout or porter. Iron and arsenic, cod-liver oil, or some bitter tonic should be prescribed according to the requirements of each individual case.

REFERENCE.

¹ Ellingwood, *Prescriber*, 1913, p. 275.

A NOTE ON THE EPIDEMIOLOGY OF INFLUENZA AMONG WORKERS

IN GAS WORKS, IN A CORDITE FACTORY, AND IN A
TIN MINE.

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[The following interim report to the Medical Research Committee is published now in the hope that observations of a similar kind may be collected elsewhere. Bacteriological and chemical analyses of the events here recorded are now in progress, with a view to finding how far the observed facts may be related to the action of some inhaled substance, either upon infective agents or upon the protective mechanisms of the respiratory tract as such.]

For many years it has been an accepted fact among men working in gaseous fumes that they are practically immune from nasal catarrh and respiratory diseases in general. Further, in some parts of the country it is the custom to take children suffering from whooping-cough to the nearest gasworks and expose them to the fumes emanating from the oxide of iron purifiers during the process of cleansing, and the parents of these children firmly believe that by doing so the attack is much mitigated.

With this widespread belief in mind, investigation has been made during the influenza epidemic among various classes of the population, to see if there were any substantial grounds for this popular belief, and the case incidence has been ascertained among the classes of persons shown in the tables.

Table showing Incidence of Influenza among (a) Navy (a Patrol Base of average strength of 1,350); (b) Army (a Battalion of average strength of 1,050); (c) Gas Workers (Nine Gasworks, employing 148 men).

Epidemic.	(a) Navy.	(b) Army.	(c) Gas Workers.
July	321 = 23 %	100 = 9.5 %	5 = 3.3 %
Autumn... ..	125 = 9.2 %	110 = 10.4 %	5 = 3.3 %
Total	446 = 40 %	210 = 20 %	10 = 6.7 %

(d) At a National Cordite Factory.

The total number of employees, men and women, may be divided into the following classes:

Class A. Not working in fumes	...	732
Class B. Working in HNO ₃ fumes, full time	...	70
Class C. Working in HNO ₃ fumes, part time	...	230
Classes B and C	...	300
Class D. Working in acetone recovery stoves	...	18
Classes B, C, and D	...	318

Number of Cases according to Class and the Percentage.

Epidemic.	Class A.	Class B.	Class C.	Classes B and C.	Class D.	Classes B, C, and D.
July	121=16.5%	7= 4.9%	2=0.86%	9= 3%	0	9=2.7%
Oct. 16-29 .	100=13.6%	4= 2.8%	2=0.86%	6=2%	0	6=1.8%
Total	221=30.1%	11=15.7%	4=1.7%	15=5%		15=4.7%

(e) Tin Workers.

The total number employed in the mine was 50. This number may be divided into Class A, workers underground, numbering 23, and Class B, workers in dressing plant who are working more or less in fumes of SO₂, numbering 27.

The ore is crushed in the stamps and passed over the water concentrators. The concentrate is roasted in ovens to get rid of the sulphur, and thus a large amount of SO₂ fumes is discharged into the building.

Number of Cases in the Autumn Epidemic according to Class, and the Percentage.

Class A	...	14 = 60.8 per cent.
Class B	...	3 = 11.1 "

The burning-house of this mine lies in a valley, and there are seven cottages, all situated within two hundred yards of the stack from which the SO₂ fumes are discharged. Under certain atmospheric conditions the fumes lie heavily on these houses. They have twenty-seven inhabitants, and only one case of "influenza" occurred among them, and he was one of the underground workers in the mine. A small village lies about a quarter of a mile distant, and quite outside the radius of the fumes. Here the cases were numerous.

(f) Other Classes of the Civil Population.

As influenza is not a notifiable disease it is impossible to get exact statistics of the number of victims. But taking into account the evidence we have, such as the death-rate, the number laid aside from work in the public civil services, the largely diminished attendances at the schools throughout the country, resulting in many places in closure, we are justified in saying that the case incidence must have been high. Then again, though the figures are much too small to warrant any definite conclusion, the numbers affected among the non-fume workers in the cordite factory may be taken as some indication of what happened among the general community. On the other hand, apart from the smallness of the numbers, it would be manifestly unfair to draw any conclusions from the cases occurring among the underground tin workers, as the conditions under which they labour lead to the easy diffusion of any infection. The conditions under which the men of a naval patrol base live are such as tend to the spread of infection also, and this accounts for the high incidence rate among them.

Percentage Summary of Case Incidence.

Navy	40.0
Army	20.0
Cordite workers not in fumes	30.1
Cordite workers in fumes	4.7
Gas workers ...	6.7
Tin mine workers not in fumes (one epidemic)	60.8
Tin mine workers in fumes (one epidemic) ...	11.1

Notwithstanding the diversity of occupation, a comparative study of the above figures gives a remarkable picture of the immunity of workers in certain chemical fumes to a certain disease. This is clearly brought out when the figures for the cordite factory are studied. Here a certain number of men and women not only work but also live in their own homes under exactly similar conditions in every respect, except for the one fact that some are more or less exposed to fumes during their working hours, others are not. In one gasworks which came under review there were twenty-five employees, twenty four of whom worked more or less in fumes. There was only one case, and he never worked in fumes. He was a cinema hall attendant in the evening.

Therefore, from the epidemiological evidence, though it does not cover a large number of people, it would seem that the popular belief in the cure of "colds in the head" by fumes has some foundation of truth.

TREATMENT OF WOUNDS BY PARAFFIN.

BY

CAPTAIN E. F. PRATT, R.A.M.C.(V.).

THE question of the treatment of wounds has been one of absorbing interest ever since Lister revolutionized surgery. One by one various treatments have held sway, and hosts of antiseptics have been acclaimed by their various supporters in turn as the most rational and effective agent to use as a dressing.

In the BRITISH MEDICAL JOURNAL for January 13th, 1917, was an interesting article by Lieut.-Colonel A. T. Hull on the treatment of burns by paraffin, and again in the issue of August 24th, 1918, there was another interesting article by Major William Haig on the treatment of wounds by soft paraffin. The latter points out the value of ordinary soft paraffin in the treatment of lacerated wounds.

The cases I mention in this short paper are especially interesting, inasmuch as not only is the effect of the first dressing shown, but I have been able to give the history of the majority of the cases from start to finish.

As certifying factory surgeon for East Newcastle-on-Tyne, and as surgeon to Newcastle Corporation Tramways, and more particularly as medical referee under the Workmen's Compensation Act to Messrs. Hawthorn, Leslie, and Co., St. Peter's Works, it is my fortune to come into contact with great numbers of burns and accidents every year.

Only the minor accidents come under my notice, as the major ones are taken straight from the works to the infirmary to be there treated. I have been struck over and over again by the long-drawn-out process of healing of burns and lacerated wounds when subjected to the hitherto orthodox treatment, and when I read of the excellent results obtained by the treatment of burns by soft paraffin (or ambrine) I could not help thinking that it would be worth while to try the experiment of treating wounds in a similar way.

During the early summer of last year I treated several cases of lacerated wounds, and was so struck by the results that I asked for and was readily given permission to treat systematically lacerated wounds and burns occurring at the works of Messrs. Hawthorn, Leslie, and Co.

The results, to my mind, are convincing, and I know of no other treatment in which the constitutional symptoms so quickly disappear, in which the pain so rapidly subsides, and in which healing is so uninterrupted as in wounds and burns treated by soft paraffin. In some cases I used ambrine and in others No. 7 paraffin, and I cannot say that I have any preference for one medium over the other, as in both the results could not have been more gratifying.

Method of Procedure.

The wound or burn is first thoroughly cleansed with sterilized water; the paraffin is then melted and either sprayed by a special spray or painted by a sterilized brush over the affected area. One layer of gauze is then placed over the injured part, and then another layer of melted paraffin is either sprayed or painted over the gauze. On the top of this a cotton-wool pad is placed, and then

the part is bandaged. The dressing is left undisturbed for twenty-four hours, when it is removed and a fresh application made. A third dressing is applied in ordinary cases the next day, and, when necessary, a fourth dressing two days after that.

I have used this method of treatment in more than thirty cases, and in no instance has there been failure to relieve pain immediately, to prevent or remove sepsis, nor failure to produce healing in a few dressings, five being the greatest number in any one case, and that in only two instances.

I am correct in saying therefore that every burn and every wound treated by me, by paraffin, healed up in a week, and the injured persons were able to return to their work—a very important consideration both from the point of view of the injured one and also from that of the employer.

I append here summaries of some of the cases in question.

1. Boy. Burn on wrist and skin broken. Healed in three dressings.
2. Boy. Burn on fingers, skin unbroken. No blisters formed; healed in two dressings.
3. Boy. Burnt hand. Pain disappeared immediately on application of dressing; no blister present on following day when a second dressing was put on as a safeguard.
4. Youth and man. Both burned on face and arm by a hot chemical liquid,* blisters forming when cases first seen. All pain disappeared immediately on application of dressing. When dressing was removed next day there was no blister, but only dry dead skin which peeled off three days later, leaving a perfectly healed surface.
5. Two boys. Burn in palm of hand with small blister. Pain relieved immediately by dressing; blister was same size next day and was then cut and dried with sterilized wool. Paraffin reapplied, and again on the two following days. On removing dressing two days afterwards healing was complete.
6. Four boys. Burns. No pain after dressing; no blisters formed; healing after the second dressing.
7. Boy. Burn on leg, skin unbroken. Pain relieved immediately; no blister formed.
8. Woman. Lacerated fingers. Completely healed after four dressings.
9. Boy. Blow from hammer on end of finger, laceration near the root of the nail. Pain disappeared on application of dressing. On redressing next day the boy reported that he had had no trouble with the finger, and he did not return for any further dressing, but went back to work.
10. Boy. Skin scraped off leg. Pain relieved immediately; next day the wound was dry, clean, and healed.
11. Boy. Incised wound of finger. Healed after three dressings.
12. Boy. Came to ambulance room with an old wound on finger-joint which kept reopening. Completely healed after two dressings.
13. Boy. Lacerated thumb. Healed after three dressings.
14. Boy. Lacerated wound of fingers. Healed with three dressings.
15. Boy. Lacerated wound of fingers. Healed with two dressings.
16. Boy. Septic wound of finger. Wound was washed and dressed; pain disappeared immediately and the wound was clean next day. Completely healed after two more dressings.

In face of such results I need no apology for urging the claim of soft paraffin as a dressing, and I feel sure that what has been found to be so good in minor injuries has every chance of being equally good in major cases.

It seems to me that this is an appropriate place to refer to the now famous bipp treatment of wounds. I have read the fascinating little book by Professor Rutherford Morison, and I am not ashamed to confess that I could not put the book down until I had finished it. After reading it, I asked myself a question which I often asked in the old days of lengthy prescriptions—namely, which ingredient is it that is effective? In the case of bipp, is it the bismuth, the iodoform, or the paraffin, or is it all three combined?

With some hesitation, as I am not in a position to speak so positively as an operating surgeon could, I throw out the suggestion that the paraffin is the most important of the three ingredients. Iodoform alone has been used for many years, and almost discarded partly because of its smell, partly because cases of poisoning have occurred, and partly because results were not universally successful. Of bismuth alone I have had no experience, but paraffin alone I have tried and with the remarkable results already given in this paper.

I take it that the three objections to bipp are, first, expense; secondly, the risk of toxic symptoms; and thirdly, the possibility of some interference with x-ray examinations. Where the result means the saving of a limb or of life, or merely the shortening of the healing process, expense cannot be considered. In the case of paraffin, however, the expense is reduced to a minimum, there is no risk of any toxic symptom, nor is there any interference with x-ray examination.

A suggestion that antiseptic paraffin retards the process of healing by destroying the saprophytic action of bacteria is, in my opinion, unsound, and without foundation in experience.

My thanks are due to Lieutenant H. S. Crace for his very great help in the conduct of the experiment, and to Mr. Kenwick, the ambulance room attendant at St. Peter's Works, for the very careful way in which he has carried out the treatment, and for his kindness in compiling a record of the cases.

ACRIFLAVINE EMULSION AS A WOUND DRESSING.

By THOMAS E. A. STOWELL, F.R.C.S.,

HONORARY SURGEON TO THE VICTORIA INFIRMARY, NORTHWICH,
AND SURGEON TO THE LEY AND NUNSMERE AUXILIARY
RED CROSS HOSPITALS.

HAVING used flavine from the time when supplies first became available—formerly in military hospitals in France and latterly in both civil and military hospitals in this country—I have shared the disappointment which many surgeons have experienced in the results gained from using a 1 in 1,000 solution in normal saline. I believe that on this account many surgeons have ceased using flavine. By publishing the formula of an emulsified preparation of the dye, together with a few specimen cases showing its effect, I venture to hope that I may do something to restore confidence in what I believe to be our most powerful weapon against wound infection.

The value of purified paraffin as a wound dressing is well recognized, and I sought a combination of paraffin and flavine which would combine the known advantages of the former with those claimed for the latter, and I am much indebted to Mr. Griffiths Humphreys, M.P.S., of High Street, Northwich, for the patience and skill with which he has worked out a stable emulsion the droplets of which, when examined microscopically, are seen to be similar in size to those in a good emulsion of cod-liver oil, and which has given clinical results that I had not dared to hope for.

Mr. Humphreys's Formula.

Acriflavine	...	...	...	0.1
Thymol	...	...	...	0.005
White wax	...	...	...	4.0
Liquid paraffin	...	...	...	76.0
Distilled water	...	...	...	20.0

A good deal of skill and care is necessary in the dispensing of this emulsion in a sterile condition. It is put up in small sterile bottles, stoppered and sealed. The addition of the thymol has given better results in cases of mixed infection, and its presence has not prejudiced the results in the simpler cases.

In dealing with broken down tuberculous glands, after scraping, I have followed the practice of introducing a small quantity of the emulsion before closing the wound. The following case is, I think, a fairly severe test.

CASE I.

A. M., female, aged 18. Broken down tuberculous glands in the anterior triangle of the neck along the upper half of the sterno-mastoid muscle. Mixed infection, and a three weeks' old sinus. The tissues involved in the inflammatory process (which included the internal jugular vein) were removed piecemeal, and soiling of the newly cut tissues was inevitable. There was considerable oozing, which I was unable to control otherwise than by packing with gauze, after introducing a small quantity of the emulsion into the wound. Stitches were then inserted, but not tied. In twenty-four hours I removed the packing, and filled the cavity (about the size of a pigeon's egg) with the emulsion. Primary union ensued in seven days with a small linear scar.

It has been my custom for some years, when operating for acute infective abdominal conditions, whenever possible completely to close the peritoneum and trust to the visceral

* I have been unable to ascertain the exact nature of this substance, but it appears to be a mixture with a melting point of 213° C. At the time of the accident it would be about 250° C. (482° F.).

layer of that membrane to deal with what infection remained after removal of the primary focus. I had always found it necessary, however, to drain the abdominal wall when there had been soiling of the wound edges. By filling the wound with the emulsion after closing the peritonaeum, I have found it safe completely to close the wound, and thus avoid the potential incisional hernia which a drainage tube leaves. The following two cases furnish fairly severe tests of the efficacy of the emulsion in recent wounds.

CASE II.

T. L., a farmer, aged 38, with gunshot wound of elbow. The lower third of the humerus, the upper end of the radius, and the surrounding soft tissues were destroyed. The lower end of the remaining fragment of the humerus, the upper end of the lower fragment of the radius, and the upper extremity of the ulna were exposed in a wound extending from four and a half inches above the elbow to three inches below the joint, and the floor of the wound was formed by the brachial artery. There was no destruction of nerve trunks. The comminuted bone, and as much as possible of the damaged muscle, was removed. Owing to extensive destruction of skin it was impossible to close the wound, but the edges were drawn together at the upper end of the wound as far as possible without tension, and the cavity was lightly packed with gauze wrung out of flavine. The wound was dressed every three days. Owing to its size the wound has been somewhat slow in healing, and now at the end of nine weeks there remains a superficial ulcer about the size of a florin, and at no time during the period of healing has there been any evidence of infection—and this in spite of the fact that the wound was badly contaminated with manured soil, clothing, and the wad of the cartridge. The scar tissue is small in amount, and is soft and elastic. The limb is flail. After improving the nutrition of the limb by massage and electrical treatment, I intend to ankylose the elbow by means of a bone graft, and I have little doubt that a limb which at first looked fit only for amputation will be converted into a strong and very useful one.

CASE III.

O. J., a woman aged 22, had a compound comminuted fracture of the fibula due to direct violence. There was much bruising and laceration of surrounding tissues, and the anterior tibial nerve was divided just above the annular ligament. The patient was in a filthy condition, and dirty clothing was embedded in the wound. The patient's skin was cleaned with petrol, and sterilized with iodine. As much as possible of the soiled and damaged tissues was excised; the damaged nerve was sutured with fine catgut. After all bleeding had been controlled, the emulsion was applied to the surface, and the wound was closed with salmon gut. In seven days the six-inch wound was healed except for half an inch at its upper end. There was no evidence of infection in this half-inch, which had healed by the twelfth day.

The fracture of the fibula followed a normal course. In three months protopathic (but not epioritic) sensation has returned in the area of distribution of the anterior tibial nerve.

The only disadvantage that this emulsion has is its price, which works out at about five shillings for eighteen ounces. Having in mind the way in which it expedites the patient's recovery, and limits the disability resulting from his injury or disease, the saving of man power, particularly in industrial accidents, is such that the relative cost of the preparation is negligible.

TREATMENT OF ACUTE GONORRHOEA: MESSAGE-PACK METHOD.

By J. P. FOGARTY, M.C., MAJOR A.A.M.C.,
S.M.O. OVERSEAS TRAINING BRIGADE, A.I.F.

It is now an Australian A.M.C. order that the message-pack method of early treatment of gonorrhoea shall be used to the exclusion of all others.

As the originator of this method, and the first to point out to the A.D.M.S., A.I.F. dépôts in the United Kingdom its superiority over irrigation and scaling up processes, I wish to submit the following detailed account of my efforts and the results obtained.

My original object in devising the method was to put into practice a theory that the speediest and the best curative results would be obtained by dressing and draining the infected portion of the urethra, by the application of an antigonococcal chemical to the infected surface, and by preventing the spread of the mischief.

To attain these objects the basis of the treatment consists in packing the anterior portion of the urethra with a material soaked in silver solution. The pack not only absorbs the discharge and drains the infected part, but, by

mechanically dilating the urethra, it enhances the prospects of the chemical reaching the site of infection, and prevents apposition between infected and non-infected surfaces.

For packing I have found soft gauze far superior to cotton-wool. It is more absorbent, less irritating, and more easily passed into and withdrawn from the urethra; it has no tendency to break, and shreds are not detached from it.

In the large majority of my cases argyrol has been used for preference, but during periods of shortage silver vitelline has been tried with equally successful if not quite as speedy results.

From a curative point of view an argyrol solution stronger than 5 per cent. is not necessary, and 7 per cent. and 10 per cent. show a tendency to cause soreness, necessitating less frequent packing, thus depriving the case of the benefit of the mechanical advantages of the pack. I have found haemorrhage even with 10 per cent. a rare occurrence, and not in one single instance with 5 per cent.

Method.

The patient having passed water, and the glans penis and prepuce having been well washed with 1 in 8,000 solution of potassium permanganate, a probe is introduced into the urethra to determine its general direction and whether there is any narrowing or other obstruction.

A strip of soft open woven gauze is cut half to three-quarters of an inch in width and about seven inches in length. The width of the strip should vary with the size of the meatus, and with experience and practice can be estimated accurately. Having rolled the strip into a cylinder and well soaked it in 5 per cent. argyrol, one end is folded over the extremity of a probe and passed up the urethra until resisted at the bend. Thus the whole anterior urethra will be packed. The excess of the pack may be cut off at the meatus.

The procedure is facilitated by opening the meatus with the tips of the thumb and index finger of the hand holding the penis, and by balancing the free end of the strip on the little finger of the hand holding the probe. If the penis be slightly tilted upwards and the strip well balanced the loss of argyrol by dripping will be obviated. There is no danger of injury to the urethra if a moderately large probe with a good bulbous extremity be used.

Having packed the anterior portion of the urethra, the penis is then gently massaged for five minutes, all the movements being made towards the root of the penis.

The pack is then withdrawn, the meatus, in so doing, being gently compressed between the finger and thumb in order to leave behind in the urethra as much argyrol as possible.

A second pack is then introduced in the same manner as the first and retained for four hours, or, if the patient does not require to pass water, even longer. Whilst the pack is being retained for four or more hours there is no tendency for the discharge to trickle outwards along its side, and on withdrawal there is no evidence, such as a flow of pus, to suggest an accumulation of discharge behind the pack. On the other hand, on withdrawal, the pack will have lost most of its argyrol colour, and pus, especially in cases with copious discharge, may be easily squeezed from it.

The number of packs given in the day's treatment will be guided by the condition of the case, but as a general rule the pack is indicated with a purulent discharge or with acute subjective symptoms, such as scalding, even before the purulent stage is reached. The majority of my cases have responded to two packs a day (morning and evening), but when necessary, as in a number of cases, I have found three packs in one day easily tolerable.

The pack is rarely necessary after the fourth morning of treatment. As soon as the discharge, observed before passing water in the morning, ceases or becomes non-purulent (clear watery) the pack should be discontinued and treatment confined to gentle irrigation with 1 in 5,000 potassium permanganate three times a day.

Results.

Between the dates March 1st and December 31st, 1918, I have applied the treatment to 742 cases of acute gonorrhoea. Of these the number "not cured" and evacuated to a venereal hospital on or before the eighth day of

treatment according to orders was only 13, comprised as follows:

Uncomplicated failure	...	7
Complicated (bubo 1, epididymitis 5)	...	6

Up to early September, that is, with 498 cases, cure was determined by the absence of subjective symptoms combined with a dry urethra or merely a clear watery secretion observed on massage and expression in the early morning before the patient had passed water.

Since that date the decision on physical signs as to cure of the remaining 244 cases has been supported by the microscope. Unfortunately, owing to the difficulty in obtaining counterstain, only the smears relative to 184 of the cases were stained by Gram's method. Smears of all these 184 cases were taken before water was passed on the mornings after the first, the third, and the fifth day of treatment, with the following results:

Number in which Gonococci were Found.	
In smear taken on morning after the first day	... 148
In smear taken on morning after the third day	... 23
In smear taken on morning after the fifth day	... 1
(This case was considered a failure, and is included in the 7 uncomplicated failures mentioned above as having been evacuated to venereal hospital.)	

Further, with this series of cases confirmed by the microscope, advantage was taken of an order to the effect that men cured of gonorrhoea would be retained in the dépôt for an observation period of nine days after cure. All 183 cases were examined and smears taken on the third, the sixth, and the ninth days of this period, and in no single instance was a return of the physical signs observed or were gonococci found.

Relapse.

Unfortunately I have been unable to trace my cases beyond twenty-four hours after their arrival at the dépôts to which they have been marched out. Nevertheless, it is worthy of note that, whilst it is an A.A.M.C. order that all men will be medically examined within twenty-four hours of marching into a dépôt and disabilities found reported, I have received official intimation of only nine of my cured cases having relapsed. Most of my cases proceeded to France, and the question of a fresh infection would have to be considered.

Advantages of the Method.

Apart from the encouraging results, only seven uncomplicated failures in 742 cases (183 out of 184 proved by at least four negative smears in each case), the method has in addition the following advantages:

1. The ease and simplicity with which it can be carried out.
2. It is comfortable and soothing to the patient, alleviating the sensation of wanting to pass water, and there is much less tendency to painful erections which characterize the condition under irrigation methods.
3. It reduces irrigation and syringing during the acute purulent stage to a minimum, and thus lessens the risk of driving the infection into the posterior urethra or further.
4. It does away with the leakage of the discharge at the meatus and thus obviates the possibility of troublesome balanitis. This condition did not occur once in my series of cases.
5. On withdrawal a definite pattern on the pack or the adherence of mucus or shreds will often indicate local areas of disease.
6. It has an economic advantage over other methods, much less silver solution being required.

I am of opinion that by specially designed speculum or introducer, infection of the posterior urethra could be treated to advantage in similar manner.

ACCORDING to a bulletin published by the Health Department of Chicago, among the ten principal cities of the United States, Pittsburgh had the lowest death-rate from tuberculosis for the year 1917, the rate being 147.05 per 100,000 of population. Chicago stands second with a death-rate of 148.37 per 100,000. Next come Detroit with 160.66, Boston with 170.87, New York with 176.75, Cleveland with 174.7, Los Angeles with 199.42, St. Louis with 202.95, and Baltimore with 236.61.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF INFLUENZA AND INFLUENZAL PNEUMONIA.

In view of the recrudescence of influenza, and especially of cases complicated with pneumonia and bronchopneumonia, I beg to suggest methods of treatment which I found satisfactory in a large majority of cases.

In cases of influenza, even if severe, I prescribe the following:

R Sodii salicylas (B. W. and Co.)	...	gr. vij-x
Sp. ammon. aromat.	...	m x
Sp. chloroformi	...	m x
Tr. belladon.	...	m v-vij

Every four hours.

The belladonna has an excellent effect in removing the frontal headache. If there is an irritable cough, I add to the dose 5 minims of antimonial wine. Under this treatment cases usually pursue a normal course. The state of the bowels must of course be attended to, and the patient kept in bed for forty-eight hours after the temperature becomes normal.

If pneumonia or bronchopneumonia sets in, the latter so often double, my internal treatment is 5 to 7 grains of ammonium carbonate with 3 to 5 minims of tincture of strophanthus. If symptoms arise indicating fibrillary action of the right auricle, I add 5 minims of tincture of digitalis to each dose. I place most reliance, however, on the external treatment, which consists in the free application of turpentine. It is mixed with hot water, and flannels soaked in it are applied round the chest walls.

The solution must be strong enough to produce a glow and a tingling effect with some redness of the skin. The turpentine obtainable now is of poor quality; the quantity mixed with the hot water, therefore, must be increased.

Directly after applying the turpentine a well-fitting pneumonia jacket made of Gamgee tissue is put on. The turpentine fomentations must be repeated sufficiently often to keep up a glow on the skin.

If a good nurse is not available, the patient could be rubbed with warm turpentine, and the pneumonia jacket afterwards put on. Under this treatment the patients experience a great sense of relief; respiration becomes less laboured; the delirium so often present, especially in double pneumonia, subsides, and the patient sleeps better. Recovery often takes place in very critical cases. Turpentine capsules given internally do good, but patients often revolt against them after a few have been swallowed.

Bournemouth.

A. HUMPHREY DAVY, M.D., M.Ch.

Reports of Societies.

PERIODICITY OF MEASLES.

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on February 14th, the President, Lieut.-Colonel E. W. GOODALL, R.A.M.C., in the chair, Dr. BROWNLEE gave an account of the results of an investigation into the periodicity of the epidemics of measles in the large towns.

The Method of the Periodogram.

He began with a brief description of the method of the periodogram analysis as applied to the discovery of periodicities in series of statistics. In general, if one periodicity only existed, ordinary inspection associated with a process of trial and error was quite sufficient to determine the periods accurately. As an example of this, sunspots were quoted. In certain towns, such as Aberdeen and Paisley, the only period for measles existing for very considerable stretches of years was quite obviously two-yearly, but when several periods existed, especially if one period were more important than a second, it was often impossible accurately to determine the second by mere inspection, while if three or more periods existed, inspection was useless. The method of the periodogram was essentially a method which examined all periods. The first person seriously to consider periodicity in disease was

Dr. Ransom. Since the publication of his paper in 1882 little further advance had been made. The author's investigation into this subject began five years ago, and as it had been possible to put a staff practically constantly on to this work, it had been feasible to analyse a large portion of the statistics accumulated in this country during the last forty years.

London.

The most complete statistics were those for London; they ranged from 1838 to the present day, the number of deaths from each infectious disease being given weekly during that period. These figures were analysed after suitable correction for the increase of the population had been made. It was found that the main period of measles in London was 97 weeks, but other periods were found—namely, 87 weeks, 89 weeks, 105½ weeks, 109½, and 114 weeks. These periods, though only half as important as the main period of 97 weeks, seemed to be quite undoubtedly present. The second part of the investigation referred to the districts of London. From this part of the investigation several important points emerged. It was found that the 97 weeks' period existed in all districts of London, but was especially well marked in the West End. The 87 weeks' period, on the other hand, was to be found solely to the south of the Thames. With regard to the other periods, definite location such as this was not so obvious. One important difference, however, came out, and that was that the epidemic of 97 weeks' period showed no evidence of spreading from one district to another, but that the epidemic, on the average, broke out at the same time in all the districts of London. Even when these districts were divided into parishes the same phenomenon was found to hold. Quite a different phenomenon, however, occurred with reference to the 87 weeks' period. In this the epidemic seemed to start in St. Saviour's and spread to the neighbouring parishes, the epoch of the maximum of the epidemic being later and later as the distance increased from St. Saviour's. As the epidemic extended to the periphery the number of people at measles ages attacked became progressively smaller. Thus the epidemic tended to end because the organism lost its power of infectivity rather than because the number of persons was exhausted.

Provincial England and Scotland.

The third part of the investigation referred to the great towns of the country—Liverpool, Manchester, Sheffield, Birmingham and Bristol, Edinburgh, Glasgow, and Dublin. Several curious facts emerged from this study. First, that the 97 weeks' period so marked in London seemed to be represented elsewhere by a period of from 97 to 98 weeks.

This period was very well marked in Edinburgh, Glasgow, Birmingham, and Bristol. In the same way in Glasgow there was a very marked period of 109 weeks, which was also present in Edinburgh and in Birmingham but absent from Bristol. There was also in Glasgow a small 88 or 89 weeks' period, and in Birmingham this was represented probably by an 86 weeks' period. The resemblance of Edinburgh, Glasgow, and Birmingham was exceedingly marked, and it could only be said that this concordance of phenomena, combined with those found in London, led to the very strong presumption that these periods were real phenomena. In Liverpool, Manchester, and Salford the range of periods was somewhat different. In Liverpool the main epidemic had a 92 weeks' period with a subsidiary epidemic every 100 weeks. In Salford there was a period of 92 weeks with a subsidiary period of two years.

In Manchester the periods were not so well marked, but resembled those of Salford rather than those of Liverpool. Bristol showed, as well as the 98 weeks' period, a period of 114 to 115 weeks. Thus the phenomena of London were reproduced in the provinces, the periods being essentially the same; the variation was not more than that found in the great London period of 97 weeks, which, when the seventy-two years were divided into four periods of eighteen years, ranged from 96 to 98 weeks. The two-yearly period was not shown in the big English towns except in Manchester, Salford, and Sheffield, though possibly present to some slight extent in Birmingham. It was absent from London and the rest of the great towns. It was, however, a real period; it existed at present in Aberdeen and

again in Paisley; in other places it had been present for considerable epochs.

Persistence of Periods.

The persistence of periods was a phenomenon of importance. If due to a special strain of organism the period might die out and be replaced by some other, and this was apparently what took place. There was no evidence of a 97 weeks' period prior to 1840. Judging from the Bills of Mortality, the permanent period before that date was two years. This had completely disappeared and been replaced by a 97 weeks' period. The 93 weeks' period had certainly been introduced into Glasgow since 1870. Before that, as far as the statistics went, the 109 weeks' period appeared to give rise to the main epidemics. Paisley, a small town, might be taken as a typical example of this kind of change. From 1856 to 1873 the epidemic had a two-yearly period. The period between 1874–1886 was some where about 89 weeks. This epidemic apparently disappeared, to be succeeded by one having a period somewhat over a year, though the existence of this epidemic from 1880–1895, being only for fifteen years, was not of sufficient length accurately to determine the period. Since 1898 the period had again been of two years, with one aberrant epidemic occurring in that time. Here, then, we had an example of epidemics dying out. A similar example was given by Aberdeen, where from 1856–1885 the main epidemics occurred at intervals of two and three-quarter years, and since 1892 had been rigidly two-yearly.

Seasonal Influence.

The best known example of the influence of season on the measles epidemics was that of London, where two maxima existed in the year—one in December and one in April or May. The compound curve, however, was very misleading. When it was analysed in periods of eighteen years from 1840 upwards, it was found that in the first two periods the winter maximum was much the more important; in the third period the two maxima were about equal, the one occurring practically about the end of the year and the other centring about the twentieth week.

With the fourth period of eighteen years the winter maximum remained at the same point, but the spring maximum had moved back until it centred about the thirteenth or fourteenth week. The seasonal distribution of measles was thus rather complex. For the last epoch in London, the one locally investigated, the seasonal distribution of districts was the same as for the whole town. When the other large towns were investigated it was found that in Edinburgh, Bristol, Birmingham and Sheffield, and Manchester, the spring epidemic was much the more important, while in Newcastle, Liverpool, Glasgow, and Salford the two seasonal epidemics were about equal. An epidemic culminating in May and June, as it did in London for the space of fifty years, could hardly, he thought, be due purely to climatic conditions. It might be suggested that this variation was due to the presence of types of measles which had a rigidly annual period. An example of this had not been found in this country, but for the last thirty years the epidemics of measles in Paisley had been rigidly annual, the maximum number of deaths occurring in the month of May. There was thus a suggestion that the so-called seasonal distribution of the epidemic was an accidental phenomenon due to epidemics of measles of essentially annual period. The subject, however, was of considerable difficulty and none of the ordinary solutions seemed to cover the statistical evidence.

PROBLEMS OF INDUSTRIAL ORGANIZATION.

At a meeting of the Royal Statistical Society on February 18th, the Vice President, Sir BERNARD MALLET, K.C.B., in the chair, Captain M. GREENWOOD, of the Lister Institute, read a paper entitled "Problems of industrial organization," summarizing the researches into the physiological substrata of industrial organization made by Dr. H. M. Vernon, by the reader of the paper and his associates, and by other investigators appointed by the Health of Munition Workers Committee and by the Welfare and Health Section of the Ministry of Munitions. In the first section of the paper, dealing with the problem of industrial wastage, it was shown that an exact account of wastage could be rendered

by applying the fundamental principle of actuarial investigation—namely, by constructing a wastage table analogous to the familiar life table of vital statistics. Treated in this way, the data showed that the general rate of wastage was much smaller in factories possessing well organized welfare systems than in factories in general. Other conditions being the same, wastage among women increased appreciably with age at entrance when the labour was of a heavy manual type, the explanation being the twofold strain of married life and factory labour, since the differentiation began at an age too early for the explanation to be a real diminution of physical power, and corresponded to the time of life when the marriage rate increased rapidly.

In the next section of the paper the problem of feeding munition workers was considered, and allusion was made to the extensive data collected and published by the Earl of Antrim and Captain Greenwood. It was pointed out that further combined statistical and physiological work was necessary upon the subject of the nutrition of industrial workers.

In the next section of the paper the subject of night work in factories was considered, and the evidence collected by Dr. Vernon, by Captain Greenwood, and by Mr. Burchell, demonstrating that continuous night work was prejudicial both to health and output, was summarized.

In the following section the important work of Dr. Vernon showing that in certain processes shortening the hours of labour was followed by an increase of both relative and absolute output was described. The work of Dr. Vernon displaying the general factors of accident causation—namely, the influence of fatigue and of unsuitable temperature—and that of the reader of the paper upon the personal element in accident causation, was next illustrated. In the concluding section Captain Agnew's observations upon the apparent deterioration of physique associated with long hours of labour in both men and boys was noticed. Captain Greenwood finally commented upon the paucity of data relative to the physiological side of industrial organization, and expressed the not too confident hope that this lacuna would ultimately be filled up.

Reviews.

THE STATICS OF THE FEMALE PELVIC VISCERA.

For some years past the name of Dr. R. H. PARAMORE has been familiar to gynaecologists as that of a careful student of the anatomy and physiology of the pelvic floor in the female, and in particular of its functions in connexion with the maintenance of the position of the uterus and other pelvic viscera. His theme, which was developed in a series of papers and lectures in the six years preceding the war, is, briefly, that the main factor in that maintenance is the muscular diaphragm of the levator ani and coccygeus muscles on each side, and, contrariwise, that the so-called ligaments of the uterus have no suspensory or supporting functions.

In a volume he has now published Dr. Paramore discusses *The Statics of the Female Pelvic Viscera*¹ exhaustively. The different views upon the subject, which have from time to time influenced gynaecological opinion and in great measure governed gynaecological action, are set forth with the arguments in support of them. The latter are then demolished one by one until each theory collapses in turn.

Dr. Paramore is particularly anxious to dispel any belief in the function and even in the existence of what he calls the "ligamenta transversales coli" (*sic*). Fortunately his arguments are better than his Latin.

We believe that to a great extent Dr. Paramore is preaching to the converted. The broad, the round, and the utero-sacral ligaments have all lost caste, and even the position of the uterus itself is no longer regarded as a matter of fundamental importance. But there are gynaecologists who believe and teach that the uterus is partially supported by the parametric connective tissue which is attached to the cervix on each side. Dr. Paramore regards this view as the last stronghold of the ligamentary heresy.

¹ *The Statics of the Female Pelvic Viscera*. By R. H. Paramore, M.D., F.R.C.S., Major R.A.M.C. (temp.). London: H. K. Lewis and Co., Ltd. 1918. (Demy 8vo, pp. xviii + 383; 26 figures. 18s. net.)

and tilts with great earnestness against it and against those who uphold it.

This is a book of nearly four hundred pages of closely reasoned writing, and another volume is foreshadowed which will deal with the evidence of surgery on the points at issue. As much of the matter dealt with in this first volume is familiar to every gynaecologist, it is not improbable that the second volume will in due course prove the more interesting and the more convincing of the two. It is not a book that is easily read, but it repays perusal, and should be studied by all gynaecologists who are unconverted but open to conviction.

We wonder whether even Dr. Paramore hopes to convert Dr. W. E. Fothergill of Manchester with this volume, or is he relying on the second volume to set this crown upon his labours?

MEANS FOR THE CONTROL OF INFLUENZA.

THE Local Government Board has issued a Memorandum on the prevention of influenza which, if the public will read it, ought to do a good deal, if not to prevent its spread, at least to check the mortality from respiratory complications.

It is hoped that the recent order which has now made acute influenza pneumonia, as well as acute primary pneumonia, compulsorily notifiable throughout England and Wales, may be of value by rendering it possible to bring aid in their homes to sufferers from secondary pneumonia. Where the experiment of opening one or more wards in an isolation-hospital for the reception of cases of influenza with pulmonary complications has been tried it has been uniformly successful. In hospital a patient should be isolated by screening or otherwise, and, as cases of influenza with pulmonary complications bear removal badly, it should only be attempted with the concurrence and under the supervision of the medical practitioner in attendance.

It is frankly said that "the epidemic cannot be stopped," and that the most important work for sanitary authorities is the organization of the available nursing service and the provision of assistance to influenza-stricken households, both by nurses and by "home helps," to do cooking and take care of children. The authority is advised to appoint a small emergency committee to act with the M.O.H. and to consult with medical practitioners and any voluntary health agencies in determining the practical methods to be adopted. The town or district should be divided into areas, each with one or more trained nurses to act under the direction of medical practitioners. Specimens of leaflets to be issued to the public are given.

THE MASK IN INFLUENZA.

In the Memorandum it is said:

On present knowledge the public is not advised to make a general use of face masks during a period of influenza prevalence. Face masks, however, should be used as much as possible by those attending on the sick. A mask to cover the nose, mouth, and chin may be improvised out of three layers of butter muslin, 8 in. by 5 in., provided at the corners with tapes for fastening at the back of the head; or about half a yard of gauze may be used for the same purpose, folded as a triangular bandage. A sufficient number of face masks must be available, so that they can be frequently changed and washed. It is desirable at the same time to protect the eyes by wearing goggles or glasses.

American Army Experience.

We are indebted to the kindness of Colonel A. M. Whaley, Medical Corps, U.S.A., liaison officer in this country, for the following very interesting information, supplied by Colonel Washburn, Chief Surgeon, Base Section No. 3, London, who has had before him data on all cases of influenza which arrived in this country from the United States.

Colonel Washburn says that it is hard to decide the value of the prophylactic mask in the recent influenza epidemic, and continues as follows:

Theoretically, of course, it should be a valuable prophylactic measure. Existing regulations of the Chief Surgeon, American Expeditionary Force, require that all patients in wards be encubated, and that all attendants, doctors, nurses, and visitors be required to wear masks, both in hospitals ashore and on transports. No regulations at present, so far as known to me, require large bodies of troops, either ashore or on transports, to wear gauze masks.

The ss. *Olympic* arrived at Southampton on September 21st, 1918, with 146 officers and 5,828 other ranks; 573 cases of influenza and pneumonia were put ashore, and within a week over 1,000 additional cases occurred among these

troops. About 300 deaths occurred among these cases. Gauze masks were not worn on this trip, and this was the first ship carrying American troops to have an outbreak of influenza in the epidemic wave occurring last fall.

On the next trip of the *Olympic*, carrying 5,430 troops leaving New York October 17th, arriving October 24th, during the height of the epidemic, only 34 cases of influenza and pneumonia were put ashore. Troops proceeded at once, so we have no record of further cases occurring. Gauze masks were worn by the entire personnel of the vessel. It was believed at the time that the wearing of these masks was responsible for the great reduction in the number of influenza cases. However, it was learned later that those carried on this trip were rigidly inspected at the port of embarkation, and that temperatures were taken, and all cases showing fever were not permitted to sail. The first case of influenza occurred on the third day out, and measures for prompt isolation were at once enforced. The number of troops carried was only slightly less than on the previous trip. Since influenza was raging at home at that time, and no known cases were permitted to go aboard, it is possible that a considerable percentage of those troops were immune, or had passed through a mild attack. Considering this, and the prompt isolation measures established aboard the vessel, it is possible only to theorize as to the actual value of the masks.

During the height of the epidemic quite a number of the convoys arriving at Liverpool were heavily affected. After the seriousness of the epidemic was appreciated in the United States, and the surgeons aboard instructed concerning the same, the later convoys arrived with far fewer cases; these convoys did not wear masks.

Gauze masks are placed aboard all transports returning to the United States, to be used if necessary.

THE MINISTRY OF HEALTH.

THE JOINT COMMITTEE OF THE ROYAL COLLEGES IN ENGLAND.

The Joint Ministry of Health Committee of the Royal Colleges of Physicians of London and the Surgeons of England has issued the following memorandum:

Now that the Bill for the establishment of a Ministry of Health has been reintroduced, it may be well to record the steps taken by the Royal College of Physicians of London and the Royal College of Surgeons of England to place before His Majesty's Government the conditions they conceived to be essential in such a bill. Early in July last the Royal Colleges appointed a Joint Committee with power to co-opt other members.

The Committee at once co-opted the President and two other members of the Society of Medical Officers of Health, and later the Committee was augmented so as to include certain members from the provinces.

The members of the Joint Committee are: Dr. Norman Moore (President of the Royal College of Physicians), Sir George Makins (President of the Royal College of Surgeons), Lady Barrett, M.D., Sir John Broadbent, Sir Bertrand Dawson, Dr. Herbert French, Dr. W. H. Hamer, Sir Robert Jones, Dr. H. R. Kenwood, Sir Berkeley Moynihan, Dr. J. A. Ormerod, Dr. John Robertson, Mr. Charles Eyall, and Mr. H. J. Waring.

The Home Secretary (now Viscount Cave of Richmond), with other members of the Home Affairs Committee of the War Cabinet, on July 29th received a deputation which submitted certain proposals, including the appointment by the Minister of an Advisory Body specially qualified to consider medical questions, the right of such body to meet frequently and to have direct access to the Minister, the equal representation on that body of curative and preventive medicine, and with a view to providing that the best opportunities for the prevention of disease and for the maintenance of health should be available for every member of the community.

The Committee considered at many meetings the conditions it conceived to be essential to any scheme for setting up a Ministry of Health, in so far as it concerned England and Wales; it was considered that the profession in Scotland and Ireland would more fittingly deal with those portions of the United Kingdom.

While realizing the difficulties there would be in gathering together the health departments at present scattered through various Ministries under one head, and effecting disentanglement from the Poor Law, the view was strongly held by the Committee that if the Health Ministry is to take a wide outlook and be as little restrained as possible by established tradition and habit, it

should not be more associated with any existing Government department than is absolutely necessary to secure efficient organization. In the opinion of the Joint Committee, the aim of any sound health policy must be to render available the best opportunities for the prevention of disease and the maintenance of health for every member of the community.

Considering that a large proportion of the work of the Health Ministry, both as regards its policy and its execution, will depend on the knowledge and co-operation of the medical profession, the Joint Committee considered it essential that there should be appointed by the Minister of Health an Advisory Medical Council, drawn from every section of the profession, such Council to have direct access to the Minister and the power to initiate advice.

Since there will probably be other advisory councils besides the Medical Advisory Council, the Joint Committee are of opinion that there should be a connecting committee in the Ministry for the correlation of the work of the advisory councils in order to prevent overlapping and conflict of advice.

The Medical Advisory Council, to be of real use to the Minister and through him to the nation, must be of limited size—say, twenty-one members. It cannot, therefore, be representative of the members of the medical profession in the parliamentary sense. Its members must be not only individually excellent, but such as will together constitute a good council of advisers.

To this end the Joint Committee laid down the principle that in selecting the members of this council, greater regard must be had to special attainments and experience than to interests and organizations as such.

Subject to this primary aim, an endeavour should be made to represent the individual members and the corporate life of the profession.

In addition to the Home Affairs Committee, the Joint Committee were later received by the Minister of Reconstruction, Dr. Addison, for the purpose of explaining and urging these views. The Committee desire to record with satisfaction the sympathetic hearing and large measure of assent given to their representation.

Conferences between the representatives of the Joint Committee of the Royal Colleges and the representatives of similar committees of the Royal Society of Medicine and the British Medical Association have been held for the consideration of these important questions relating to the proposed Ministry of Health. At these conferences there has been substantial agreement, a fact of great importance in view of the large body of medical opinion these three bodies together represent.

The Joint Committee will continue their deliberations with a view to helping in the formation of a sound national health policy.

THE GENERAL MEDICAL COUNCIL.

The Executive Committee of the General Medical Council, at its meeting on February 24th, adopted the following resolutions, which were forwarded to the Lord President of the Council for communication to the Government:

1. That the Executive Committee observe with regret that the bill does not extend to the whole of the United Kingdom, as was urged in the resolution of the General Medical Council of November 30th, 1918; and that the Executive Committee presses on the Government the importance of introducing legislation corresponding to that proposed for England and Wales, and for Scotland, appropriate to the special conditions obtaining in Ireland.
2. That the Memoranda No. 1 and No. 2, laid before the Executive Committee by the Irish Branch Council, be transmitted to the Lord President for his information.
3. That in view of the very varied medical functions devolving on the Ministry of Health in Scotland, including measures for the prevention and cure of diseases, the treatment of physical and mental defects, the collection and preparation of information and statistics relating thereto, and the training of persons engaged in health services, the Executive Committee is of opinion that not less than one-third of the members of the Scottish Board of Health should be persons who are registered under the Medical Acts.
4. That the Executive Committee welcomes the introduction into the bill of Clause 3 (2) (d), whereby the powers and duties relating to public health, now exercised by Government departments other than those expressly mentioned, may by Order in Council be transferred to the Ministry of Health; and that it is desirable that the General Medical Council should before they are issued have an opportunity of considering the several draft Orders in Council so contemplated for the transfer of such medical powers and duties.

THE MEDICAL PROFESSION AND TRADE UNIONISM.

ANOTHER "mass meeting," to consider what the convening circular described as "the crisis in the medical profession," was held at Wigmore Hall, London, on Sunday, February 23rd. The meeting on this occasion was called by the Council of the Medico Political Union. Dr. FRANK COKE, of Ashford, presided over an audience numbering some three hundred.

Dr. J. A. ANGUS moved, and Dr. STANCOMB seconded, the following resolution:

That in view of the far-reaching changes inevitable in the medical services of this country consequent on the coming Ministry of Health, it is essential that the profession should be solidly and democratically organized on a trade union basis to enable it to negotiate effectively with the Government in the interests of the community no less than those of the profession.

Dr. R. DUNSTAN (Fulham) moved an amendment, seconded by Captain MORGAN, R.A.M.C., of Epsom, deleting the words "on a trade union basis," and inserting "as a trade union affiliated to the Labour party and the Trade Union Congress."

Dr. R. FIELDING-OULD said that the profession was not prepared at the present moment to accept trade union principles, and Mr. BISHOP HARMAN that the great trade unions were powerful because of the mass influence they were able to exert. Dr. ALEX. MORISON also opposed the resolution, deprecating the intrusion of the "cash" spirit into the discussions. Speeches in support of the resolution were made by Dr. COODE ADAMS, Dr. S. F. HOLLOWAY, and Dr. JOHN CLARKE (Woolwich).

The proposer and seconder of the original resolution refused to accept the amendment, on the ground that the profession must not ally itself with any party. The amendment was lost by a large majority, and the original resolution was carried by 207 votes to 30.

THE NAVAL MEDICAL SERVICE.

THE CASE FOR REFORM.

AMONG the many communications we have lately received from naval surgeons on the future of the Royal Naval Medical Service, the following notes, contributed by a senior medical officer, contain criticisms and suggestions that seem worthy to be placed on record.

The writer begins by drawing attention to the serious plight in which the Naval Medical Service will be, through lack of junior medical officers, after peace is declared and the many temporarily employed surgeons are demobilized. While it may be possible to tide over a few months by retaining a number of temporary and R.N.V.R. medical officers, they cannot be held indefinitely. It is an open secret, he says, that scarcely any of these 900 officers have signified their intention of joining the permanent service after the war. No permanent surgeons have been entered since 1914, and the number of surgeon lieutenants is now little over 70; before the war the establishment of fleet surgeons, staff surgeons, and surgeons was 574. At this rate, he argues, the service would soon consist of "many generals and no army."

Existing Defects.

The writer then discusses, under three heads, the reasons why the Naval Medical Service as at present constituted fails to attract young medical men.

Professional Work.—Since the fleet is manned by a body of men carefully selected for their physical fitness, and there are (except in marine barracks and a few other places) no women and children to be treated, it follows that there is seldom enough work in a warship in peace time to keep even one man fully employed. A general practitioner with the number of patients each day that the average warship can produce would not make a living. There is also very little opportunity at present for special work and none at all for operative work except in emergencies and at hospitals. The result is that the medical officer grows rusty before his time. Thus the service does not offer a keen man the opportunity he would naturally expect. He may serve more than twenty years and never have the luck to get a good professional appointment in a naval hospital. On the other hand, after fifteen or twenty years' service, he may be suddenly posted to a special appointment and realize how unfitted he has become through no fault of his own.

Relation to Other Branches.—A medical officer is not long in the service before he finds out the great gap there is between

the executive and non-executive branches. Even when in an independent appointment he has none of the privileges of the executive officer.

Executive officers usually retire with a step in rank, and are often promoted automatically after they have retired. Medical officers do not as yet share this advantage to the same degree. Again, every admiral, captain, or commander in charge of a naval establishment has a steamboat for his own use. A medical officer as a rule has not, though he may be allowed a pull boat, or dghaisa.

The compound titles recently introduced are cumbersome, and disliked by many medical officers. It would be better to grant the simple rank and title lieutenant, commander, captain, and so on, with the letter (M) in brackets. Compound titles have been abolished in the R.A.M.C. and I.M.S., and are not used in the R.A.F.

Pay.—The young medical man, if he looks ahead, will see that as a surgeon commander he will draw from 28s. to 35s. a day, but as a lieutenant-colonel R.A.F. he would be paid 35s. to 45s. a day. The present rates of pay for every one below an admiral are absolutely inadequate. Not until he joins the service does he understand the dreadful meaning of "half pay." To find oneself through no fault suddenly put on half pay with a family growing up, school bills and house rent to be paid, is a nightmare to all senior officers.

Suggested Remedies.

The writer then discusses under similar headings the improvements which, in his opinion, might be made in order to attract the right kind of medical man to the service.

Professional Work.—Assuming a shortage of clinical material, that material should be shared more equitably—for instance, by a fairer distribution of appointments. At present some men get into hospitals and serve the greater part of their time in these desirable professional appointments. It is unfortunate that the best appointments for medical officers are always on shore while those for executive officers are generally afloat, because if a medical officer asks for a hospital he is liable to be suspected of desiring the house and emoluments that go with a hospital appointment (though a house is by no means always available); whereas an executive officer, if he desires a good professional appointment, must often ask to be sent to sea.

Specialists should be appointed and men should be encouraged to qualify in special subjects, extra pay and more or less permanent appointments, alternately afloat and ashore, being offered. As subjects for specialism the following might be mentioned: Surgery, medicine, x rays, anaesthetics, physical training, ophthalmology, ear, nose, and throat work, administrative work, statistical work, venereal diseases.

Study leave or courses of instruction are already granted, but they might be extended with advantage, and instead of the iniquitous system of putting a man on half pay he should be given study leave on full pay for any reason no appointment is available for him at the time. Exchange of appointments should be allowed when it is clear that the public service would not suffer. (The R.A.M.C. has this privilege.) The principal medical officer of each fleet (at home or abroad) should be a surgeon captain. Transport arrangements for sick and wounded should always be under the control of a medical officer.

Promotion.—Promotion to the rank of surgeon lieutenant commander should be given after six years, and to that of surgeon commander after twelve years. Promotion to surgeon captain should be by selection. The number of surgeon captains and surgeon rear admirals should be increased. Acting promotion should be granted more freely; it is very rare indeed for a medical officer to get acting promotion, though he may hold an appointment intended to be held, and perhaps held before, by an officer of the rank next above his own. In similar circumstances an executive officer almost always gets acting promotion. Accelerated promotion should be given for good work. Promotion after retirement should be granted on the same lines as to executive officers. At present the surgeon commander when he attains that rank is usually older than any newly promoted commander in other branches.

Pay.—The pay of all medical officers must be increased to meet the cost of living and to level their income up to that which they could earn elsewhere. The estimate of the Government statisticians is that the cost of living is now more than twice what it was in 1914. Gratuities should be granted on retirement after 4, 6, 8, 10, 12 and 14 years of service, the rates being proportionately higher than are at present paid at 8, 12, and 16 years. Charge pay should be increased.

The following facts relative to the pay of medical officers should be taken into account when the future rates are settled: (1) Before entering the navy the young medical man's education has been far more costly than that of the youth who joins any other branch, with the sole exception perhaps of the chaplain, whose miserable pittance is a byword in the service. (2) The medical officer cannot, as a rule, join the service till he is 23 to 25 years old and has usually been an expense to his parents for most of that time. (3) The service educates the executive officer and the engineer and in consequence pays them less, but it does not educate the medical officer, and should therefore pay him more. There is thus every reason for paying the medical officer at a higher rate than the executive or engineer officer, but possibly none for paying him more than the chaplain or the naval instructor.

Rank and Command.—Medical officers should have power, in their own branch and in dealing with their own officers and men, equal to that of executive ranks. In every ship the senior medical officer should have power of punishment as a "second in command," and in independent commands (hospitals and hospital ships) he should have the same powers as an executive officer "in command." The invidious rule which makes a surgeon commander always junior to a lieutenant-colonel in the other three services (R.A.M.C., I.M.S., R.A.F.) should be done away with by making all commanders (of whatever branch) rank with lieutenant-colonels according to their relative seniority. Whenever a medical officer or rating is tried by court-martial a senior medical officer should always be a member of the court.

The vice-admiral (M), rear admiral (M), or captain (M)—to give them the titles suggested—in command of a naval hospital or establishment should have the same privileges as an officer of the corresponding executive rank, such as steamboat and allowance for servants.

Pensions.—There should be optional retirement after sixteen years' service, on pension, and the pension rates should increase in proportion to the exact number of years' service, and not remain the same for four years at a time. Pensions and widows' pensions and children's compassionate allowances should be increased to meet the new cost of living. Half-pay should be abolished except as a punishment or when granted at the request of the officer. An officer retired at his own request, or to facilitate promotion of others, or under an age clause, should be granted the next higher step in rank.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE SURE WAY TO OBTAIN MOTOR FUEL LICENCES.

MEDICAL men who are experiencing any difficulty in obtaining fuel licences, or supplementary ones, and who are members of the Royal Automobile Club or the Automobile Association, should communicate with one or the other of those bodies, which have been requested by the Petrol Control Department to take up the matter, presumably with a view to expediting the work of licence issuing. Doctors' attention may also be drawn to the campaign initiated by the *Motor* to protest against the continuance in another form of the super-tax of 6d. per gallon on petrol, because it concerns them in that they pay a half-share of all peace time imposts on motor fuel. Forms may be had on application to 19, Rosebery Avenue. Doctors should get all their motoring patients to append their signatures also, in that, unless there is a very wide protest, it is extremely unlikely that the Chancellor of the Exchequer will impose less than a 1s. fuel tax next Budget. Yet, with a gallon of petrol costing more than the pre-war price of a bottle of whisky, the individual medical man, who under taxation schemes has certain privileges over ordinary motorists, is paying far too dear for his motor fuel. Moreover, the more motoring in general is restricted in these islands, the relatively dearer it is for the medical man. The story of all locomotion movements, as well as of ordinary commerce, is that the bigger the scale on which you establish each, the cheaper the cost to the individual participating. It is therefore a matter of direct interest to the individual medical man to see to it that the motorists among his patients are enlisted in this campaign of public protest against the extortionate prices to which fuel and fuel licensing and taxation schemes have driven it to-day.

The Petrol Control Department's premises are advertised for sale "with early possession." Therefore, it is to be presumed that the department will cease to exist at the end of April, when the current licences run out. Obviously it would cost less to the Government to slip the extra 6d. a gallon tax on the cost of the petrol to the user at the time he is purchasing it in the ordinary way instead of involving all the paper wasting and clerical costs of running a separate department to raise a supplementary tax, as being another name for dividing up work that has already been provided for.

THE BENZOL SITUATION.

The Government has acted wisely in connexion with benzol to announce that the ordinary tax will be imposed on it if it is marketed by the oil companies. But the theory is more attractive than the actual practice. One of the chief reasons of the proportionately high cost of motor fuel, even in peace time before we had war costs to pay, was in its distribution in retail. The organizations, with their tremendous ramifications, cost an enormous amount to

establish. Therefore it would actually be an act of economy if existing organizations could be used to distribute benzol, provided some control were kept over the matter by the Government. It may be admitted that, theoretically, it would be better that the organizations selling benzol were rival concerns; but can it be imagined that they could continue so in anything but name? What is to prevent the oil groups, with all the financial and practical experience they possess, forming separate companies and running benzol just as they run oil, or, if entirely different groups started benzol companies at a later stage, buying their shares and coming into control of them in that way? Meantime, the enterprising "Shell" oil concern announces the sale of benzol to its customers, who are then not kept waiting for distribution facilities.

It is eminently desirable that the use of natural benzol should be encouraged. The Government should draw up very stringent regulations whereby the public will be assured against the possibility of buying under the name of benzol that which is in effect "denatured" benzol, such as was used at one period of the war; it is distinctly destructive of engines, having in it certain chemicals in substitution of ingredients withdrawn for the making of explosives during the campaign. By contrast, natural benzol should prove very satisfactory.

THE NATIONAL BENZOL ASSOCIATION'S SPECIFICATION.

An organization styled the National Benzol Association, whose membership, however, does not embrace all those producers who collectively are distilling something like 21,000,000 gallons of benzol in this country a year, has done well to issue the following specification of benzol for use as motor spirit, because it ensures something like a standard grade quality being supplied to the public by members of the association; it contains necessary provision against freezing, in that benzol crystallizes at 18° F.; and it allows a negligible amount of sulphur only to be embodied in the fuel, so that there is no danger of corrosive action to the engine. The points are as follows:

1. Specific gravity: 0.870 to 0.885.
2. Distillation test (by flask). Benzol shall give a distillate of not less than 75 per cent. to 80 per cent. at 100° C. Benzol shall give a distillate of not less than 90 per cent. at 120° C. Benzol shall give a distillate of not less than 100 per cent. at 125° C.
3. Sulphur: The total sulphur shall not exceed 1.040 per cent.
4. The benzol shall be entirely free from water.
5. Colour: water white.
6. Rectification test: 90 c.cm. of the sample shaken with 10 c.cm. of 90 per cent. sulphuric acid for five minutes should not give more than a light brown colour to the acid layer.
7. Benzol shall be entirely free from acids, alkalis, and sulphuretted hydrogen.
8. Benzol shall not freeze at 25° F. below the freezing point of water.

The Automobile Association is taking the keenest interest in the recovery of benzol from gas works, and is alive to the proposal of the subcommittee of the City Council and of other bodies to approach the President of the Board of Trade concerning the alleged hardships imposed on gas consumers during the war owing to gas companies having "scrubbed" their gases for benzol. It seems to be generally agreed that scrubbing to a moderate extent, while recovering a large quantity of benzol, only affects the calorific value to somewhere about 5 per cent. As regards illuminating power, the difference where incandescent mantles are used is quite insignificant. In view of this, it is strongly felt that, far from gas companies being deterred from continuing the process, they should receive every encouragement, both from the public and the Government, to continue an enterprise which has such an important bearing on the production of indigenous motor fuel. The production from gas works alone last year was over 6 million gallons. If all gas works scrubbed their gases, this figure could be increased by some 15 million gallons, making over 21 million gallons in all obtainable from coal. This amount is actually carbonized at the present moment, and the by-products are being wasted.

In America the much boasted "Liberty" fuel, which is supposed to be an entirely new motor spirit, turns out to be nothing very original, but merely a 65 per cent. mixture of benzol with nearly 30 per cent. of what the Americans call kerosene, or what we should call petroleum plus a small percentage of amyl acetate. This raises the question whether we could make combinations of fuels of that sort probably more cheaply in this country if the oil groups blended them, than by having benzol and oil marketed by

two distinct concerns, so that any organization desiring to place a blended fuel on the market would have to pay the oil and the benzol groups their profits before it could secure its supplies.

THE COST OF NEW CARS—AND A WARNING.

While the next six weeks should witness a considerable clearing up of the fuel situation, it should also see the first issue of post-war cars. The majority of firms have now announced the main features of the vehicles they will market during the spring and summer, though practically none will give definite dates for delivery. Since post-war models of cars of sizes and types likely to interest medical men were last dealt with in these pages, very much more definite information has been forthcoming as to prices. Unfortunately, these are all in the undesired direction. Pre-war values are absolutely no guide.

It may be asked how it is that manufacturers should not ask such higher prices as the high costs of labour entitle them to demand, since the net cost of producing a car in the post-war period is more than 100 per cent. over the pre-war cost. Increasing wages for the mining of coal, the shipment or other transport of ore, and so on, go through all the processes of producing the raw materials of motor manufacturing. When the matter is examined in detail in this fashion, the only matter for surprise is, not that type-for-type cars are 50, 60, and 75 per cent. dearer than they were in the pre-war time, but that they are not 100 per cent. or more dearer.

In very few cases that have come under review in the small and middle size car markets are machines being offered at double their former prices, though the medical man should be warned that here and there agents appear to have got hold of demonstration examples of post-war cars, and to be offering them for early delivery at utterly fancy prices. This is something for which the manufacturer is not to blame. Indeed, all the responsible firms are taking active steps to stop such an injury to their trade, but they cannot control the buying public. Therefore they plead that it should not further raise costs against itself by paying such prices for cars, manufacturers themselves never demanding such. The middleman alone makes such unauthorized profits in addition to the quite handsome ones allowed him by trade agreements.

Neither is the used car market at the moment to be understood. For example, a case came under review the other day in which a man paid over £500 for a 1914 Singer coupé, and in the middle-size class equally extraordinary prices seem to be realized. Yet if an owner endeavours to sell a used car, it turns out that his may be worth 20 per cent., at most, more than he gave for it at the beginning of the war; but in most cases £10 or so less than he gave for it.

NO CASE FOR DESPAIR.

Certainly motoring is going to cost the medical man much more in the immediate future than it did before the war, alike as regards the prices of his tyres and fuel and for the purchase and repair of his car. Therefore the best advice that can be given is: any medical man who has a vehicle at all up to date with which he can make shift should, not merely in the interests of his colleagues who may have no such standby, carry on with what he has until production has begun to meet demand; it is, besides, in the interest of his own pocket, in that, beyond, peradventure, from next November onwards we shall begin to see what designers will achieve towards reducing car costs in the light of what we shall not discover until Budget time in the matter of the taxation the Government is going to impose on the motoring movement.

None need despair, because an interruption of approximately five years has occurred in supplying the needs of the motoring public at large, with the inevitably resultant shortage. The increase in factory capacity the world over is such as to ensure that in about two years the manufacturers will have overtaken the public demand. Then there will be something of the nature of a world-wide slump in car production.

One might forecast it much earlier were it not for the fact that the bulk of the world's motor vehicles are produced and used in the United States of America, where statistics show that the average life of a motor vehicle is five years, and that in the course of that time two bodies will be worn out. When it is recollected that there is one

motor vehicle in the U.S.A. for every eighteen inhabitants, it will be understood that even a large industry has much headway to make before it can catch up such a demand as is created by war prosperity on the one hand—America's national wealth has increased by at least 40 per cent., whereas her national debt is only $4\frac{1}{2}$ per cent. of her total wealth—and on the other by the brief interruption of output due to concentration by motor manufacturers on munitions production. The Americans estimate that their home market will be short of cars for two years at least; this, however, does not mean that we shall not see the American industry very eager to do business in this country, because the Americans foresee that it must follow as the night the day that presently motor car production the world over must overtake demand. Therefore they want to get well set in their export markets for that time when they will want to bring wealth into their country and keep their industry going by export. Accordingly, during the next two years they will starve their home market, and even let foreigners do business there rather than neglect to utilize every opportunity to do export business. By the time American production can suffice alike for U.S.A. and export demands, the American makers can oust the foreigner from the States whenever they please.

Therefore, during the next two years or so we may expect car prices to be relatively high, though in Europe they must be brought down earlier than in the New World by reason of the impoverished state of the community of the Old World, leaving relatively a very small proportion of the population in the position to pay high prices for motor vehicles.

NOVELTIES NEXT NOVEMBER—AND NOW.

Medical men for whom a motor vehicle is a necessity are among the class which will necessarily refrain from buying vehicles at fancy prices, unless they are absolutely driven to do so. Those who can hold out for two years may rest assured that by that time, at the longest, new methods of designing and competition will have compelled at least a section of manufacturers to evolve cars that are cheap but can yet give good service. There is, however, no prospect of revolutionary design on the part of responsible firms during the 1919 production season. What will be shown at the Olympia Exhibition next November (7th-15th) will be machinery that for the most part will be produced in 1920. Therefore, at the moment that does not concern us.

Of course, scale of production has much to do with the cost at which a vehicle can be put on the market. The fabulous scale of American output to each factory is more widely known than the effectiveness of it is appreciated, since one cannot realize the thing unless one has been to factories and seen the work in progress. Then one really grasps what it means.

What has been done in Europe to counter this? In Italy the Fiat factory had between forty and fifty thousand hands during the war, and one of its great post-war propositions was to have been a four-cylinder light car marketed complete at about £200; yet within the last month the firm has abandoned the scheme altogether in favour of a large model policy. At base the change is due to the cost and temper of labour. In the meantime the company sees that it can sell more than all the large models it can turn out for a long time, so that the type most likely to be of use to the medical man is held up in the interval. With the lapse of time, however, shipping rates must fall, and so forth, so that gradually the hundred and one factors which contribute to the current cost of a car will decline. In France, Renault employs twenty-five thousand men, but there is no confirmation of the fact that he is going to put a very cheap car on the market this summer, though he has some popular models in view. In France, however, a war-created organization formed by M. Citroën is aiming at mass production on a basis of some thirty thousand vehicles a year, the scheme being, of course, to embark on a cheap car, of which sufficient details are not available at the moment. It is expected that by April the output will be one hundred cars a day, to be retailed with standard body and complete equipment at from £290 to £360, with a four-cylinder engine of 68 mm. bore and 100 mm. piston travel.

(To be continued.)

British Medical Journal.

SATURDAY, MARCH 1st, 1919.

ST. BARTHOLOMEW'S HOSPITAL.

Books have failed to secure success because the authors have chosen subjects far beyond their knowledge and power, but the *History of St. Bartholomew's Hospital*, by Dr. Norman Moore,¹ is a book requiring, it is true, vast knowledge, but written by one possessed of the requisite qualifications for an exacting task. The author and his subject are well met.

Many histories of venerable institutions have been written, but nearly all are open to the criticism that their authors have been unable to take a wide view, and too often have committed the fatal mistake of regarding the institution apart from the times in which it flourished. Lack of knowledge has generally been accountable for this failure, for no man is qualified to describe the rise and progress of an institution unless he has steeped himself in the history of its times. To write adequately the history of a great institution which, beginning in early mediæval times, has continued with scarce a break until the present day, is the task of no common compiler of books. Five qualifications we conceive to be necessary for its accomplishment. The author must venerate the institution, and be a part of it; he must be a scholar; he must be an historian, and he must have strong antiquarian instincts. Finally, he must be capable of adjusting the balance nicely between these qualifications. All these attributes Dr. Moore possesses, and the fine book he has presented to St. Bartholomew's Hospital will enhance his reputation, already great, as a scholar, as an historian, and as a man of letters.

His history of the great City hospital must not be regarded as a mere account of the birth and growth of a splendid medical charity. It is that, but it is much more. Dr. Moore has struck the right note in his treatment of his subject. Taking St. Bartholomew's as an example, he has shown that medical charity and medical knowledge had their origin in the cloister, and were the outcome of the desire to help those in distress and suffering. What the mediæval religious houses were to learning, so were they to medical knowledge—the custodians and repositories of the germs of those arts and sciences which have reached so enhanced a state at the present day. We may smile, if we please, at the way in which the religious houses discriminated between the learning that was worthy of preservation and that which should be rejected, but we can never be unmindful of the fact that when the whole world was sunk in the black night of barbarism, the *Scriptoria* of the religious houses were trimming the feeble light of knowledge until it could burst forth in the blaze which lit intellectual Europe in the seventeenth century.

Dr. Moore takes us back to the dark ages—to their very beginnings. With minute and unerring pen he pictures to us the foundation of an institution before

the universities had taken definite shape, and his deep antiquarian knowledge sheds light on the dark places, and makes clear the early history of St. Bartholomew's Hospital. Materials on which to build are scanty, for the hospital was founded in 1123, and its early origins can only be extracted from contemporary charters and deeds. The facsimiles of these deeds have been beautifully executed, and we do not remember to have seen a book in which so much care has been bestowed on the reproduction of ancient charters and deeds. Their study would well repay the student of palaeography, for the forty odd examples given in the volumes may be regarded as typical of the charter hands of the twelfth and thirteenth centuries.

After relating the history of the foundation of the hospital, Dr. Moore goes on to describe the state of medical knowledge in those early days. At the beginning of the twelfth century learning in western Europe was at a low ebb, and although the members of religious houses could read, and in some cases were able to write, their range of knowledge was circumscribed. In the main five authors were relied upon to impart all the education required, and the works of Orosius, Martianus, Boethius, Cassiodorus, and Isidorus came to be the textbooks of the schools. The Greek tongue was unknown, and the portions of Aristotle dealing with logic, which alone were read, were studied through questionable Latin translations. Soon after the foundation of the hospital Peter Lombard wrote his *Sententie*, and that great work, supported and elaborated by St. Thomas Aquinas, Duns Scotus, and William of Occam, became for three centuries the theological textbook founded on an appeal from authority to reason. As Dr. Moore shows, the only medical book open to those who attended the sick in the early days at St. Bartholomew's was the fourth book of the *Liber Etymologicarum* of St. Isidore of Seville. Its range was not wide, and it is probable that the brethren of the hospital derived their medical knowledge far more from observation at the bedside.

Two centuries after the foundation of the hospital a more extended range of medical literature became available, and Dr. Moore gives a most scholarly account of John Mirfield and his *Breviarium Bartholomei*, which was written before 1387. Mirfield's name is the first connected directly with medicine to appear on the roll of St. Bartholomew's, and, as Dr. Moore points out, his *Breviarium* is the first treatise of medicine issued from the hospital. Mirfield, we are told, was familiar with the *Lily of Medicine* by Bernard of Gordon, the *Rosa Anglica* by John of Gaddesden, and the *Compendium* of Gilbert the Englishman, and also with the sadly inefficient translations into Latin of Galen and Avicenna. He had, therefore, made a comprehensive study of mediæval medical textbooks, and may be regarded as the first physician to St. Bartholomew's Hospital.

For the first four hundred years of the hospital it would appear that its character as a religious house, with an annexe for the exhibition of charity to the poor, was strictly preserved, and it was only after the great upheaval caused by the "Injunctions" in 1535 that the hospital assumed prominence as a place for the treatment of sick people. The chapters on the "End of the Old Order" and the "New Order" give a luminous account of those great changes, and we commend them to students of medical history.

We have said enough to draw attention to the value of this fine book as a contribution to learning worthy of the great reputation of its author. We hope on a

¹ *The History of St. Bartholomew's Hospital*. By Norman Moore, M.D. Two vols. London: C. Arthur Pearson, Ltd. 1918. (Demy 4to. Vol. i, pp. xxii + 614; Vol. ii, pp. xiii + 992. 43 ss. net.) The book is a present from the author to St. Bartholomew's Hospital, and the proceeds from its sale will be given to the hospital.

future occasion to deal at length with the second volume of the work, where the hospital as a mighty influence on the course of medicine in this country is described.

THE ORGANIZATION OF RESEARCH.

In a paper on the State organization of research, read at a recent meeting of the Royal Society of Arts, Sir Frank Heath, K.C.B., Secretary of the Department of Scientific and Industrial Research, succeeded in compressing into a few pages a lucid account of the work of his department. His characterization of research in general is, so far as it goes, excellent, and ought to be taken to heart by the public, but the treatment of a vast and complex subject which approves itself to one thoughtful man cannot be expected to satisfy all his readers. If, then, we dwell upon points of disagreement, we are not the less conscious that Sir Frank's paper compares favourably with the lucubrations of most administrators.

In the earlier part of his paper he emphasized the novelty of the departure made by the Government in 1915, and, without making the assertion in so many words, rather implied that our Government has handled the problem of national research with more courage and on more satisfactory lines than did that of the Germans. While we agree that the course followed here since 1915 was the best in the circumstances, we are emphatically of opinion that this is only true in consequence of past errors; that the idea inspiring the memorandum of v. Humboldt, quoted by Sir Frank Heath, is correct, and that the system of the German Government was in principle thoroughly sound.

The German ruling caste appreciated the importance of scientific knowledge a century before ours, and conceived that the best way to foster research was to create a number of adequately equipped university departments; they believed that the multiplication of opportunities for disinterested investigation would lead to the production of trained minds capable, in Sir Frank Heath's words, "of extending the powers and capacities of man in relation to the world in which he lives." They had their reward; all that scientific ingenuity and foresight could do to safeguard the Teutonic hegemony was done; there was no need of hasty improvisations. The German state system has perished in scenes of death and disaster, but of the many crimes and blunders committed by its makers, the neglect of science is not one. In this country, generations of neglect have compelled us to adopt in our hour of need an expedient which would not have found a single defender if proposed as a normal method of evolution. The courage of the Government in 1915, which Sir Frank Heath extols, was the courage of despair; we could not then, we cannot now, escape the penalty of a hundred years' sloth. It is too late to build from the ground on the German model, but we need not pretend that we have discovered for ourselves a better model, but should, with humble and contrite hearts, try gradually to improve our temporary structure into something like a real university system, keeping it free from such defects and abuses as in Germany that system revealed in practice; of these the worst was the prostitution of scientific appointments and scholarly reputations to the uses of political propaganda.

The actual organization of research in this country is far from satisfactory. In particular we think that the position of the Advisory Council should be reconsidered. It is obvious that a body of "seven independent and distinguished men of science, the majority of whom are large industrialists," can only

be a makeshift instrument for the exercise of what is in effect considerable patronage in scientific education, for Sir Frank Heath anticipates that in the next academic year £30,000 will be expended on grants for the education of research workers. Nor do we consider that such a body ought to have, even in theory, a superior position to that of other scientific committees. Quite apart from the fact that no seven men could be capable of overlooking the whole field of research, the selection of "distinguished industrialists" means the choice of busy men, and the real patronage will sooner or later come to be exercised by the permanent civil servants. This is the fate of such schemes. The worker in pure science is not, as a rule, chosen to fill an exalted advisory position until he is past his intellectual prime, few can be known outside specialist circles until their real work is done, while the scientific industrialist, who *may* be known to the administrator in relatively early life, will not have leisure to give close attention to committees. As we remarked in a previous article, a better system would be to reduce the Advisory Council from its position of solitary grandeur and to range alongside of it with equal powers and responsibilities a council representative of medical research, another speaking for agricultural research, a third concerned with physics, and so forth. It is inadmissible that the proposals of, say, the council dealing with medical research should be referred to any other scientific council, having an ostensibly higher status, before the Minister gives his decision; such a plan must in the long run increase the power of the lay civil servant.

While we have no doubt that some such organization as that we suggest will be necessary for many years to come, its existence should be regarded, not as a testimonial to the enlightenment of our governing classes, but as a standing witness of their incompetence in the past. We ought to hope that the time will come when, like the burden of Christian, it will be loosed from our shoulders. This will happen when British universities are as numerous as and better staffed and equipped than those of Germany; a day this generation is probably not destined to see, but for which it can at least strive.

At present there is a too general tendency to give to State organization of research the credit of nearly all scientific work of national importance since the war. Actually the staffs of institutions unprovided with official Boswells or public funds have done at least as good work as those directly paid by the State and shepherded by civil servants. No official muse has celebrated the numerous researches inspired by the Director of the Lister Institute, Dr. C. J. Martin. His own contributions to the study of bacteriological problems, the series of researches into the causation and prevention of deficiency diseases executed by Miss Chick and her collaborators, the work of Bacot on the louse problem, of Arkwright on trench fever, of Miss Robertson on anaerobes, of Greenwood on nutritional and medico-industrial questions, will sustain a comparison with any products of State organized research. Had these investigations, instead of being inspired by the director of a private institute, been financed by the taxpayer they would have been more widely known.

It is not a healthy feature of our present mental attitude that scientific work done quietly and not as part of a "campaign"—"team work," or whatever may be the current metaphor—is likely to be ignored. This is one of the dangers of a system of State officials anxious to justify the expenditure of public funds, and should not be encouraged by those under no such temptation.

THE BRITISH MEDICAL ASSOCIATION MEETING IN APRIL.

THE success of the clinical and scientific meeting of the British Medical Association in the second week of April is assured so far as excellence and variety of the work can assure it; the only thing which can stand in the way of its complete success is the difficulty those who propose to attend from outside London may find in securing accommodation. Hotels are very full, and the pressure upon them does not seem likely to diminish. It is important, therefore, to secure rooms as soon as possible, and it may be necessary to pay a deposit at the time of ordering. There is no doubt that private hospitality will be offered, but its amount cannot yet be gauged. The special feature of the meeting will be the large number of demonstrations arranged for each of the afternoons; they cover a very wide field in medicine, surgery, and preventive medicine, and will, it is believed, form a strong attraction to all the members of the profession who wish to see the newest methods in actual working. There is little to add to the full programme published in the SUPPLEMENT for last week. As Colonel de Crespigny is about to return to Adelaide, he is compelled to resign the office of secretary of the Section of Medicine, and has been succeeded by Colonel R. J. Millard, C.M.G., D.D.M.S., Australian A.M.C. Major A. M. W. Ellis, C.A.M.C., is now associated with Dr. Arkwright as secretary of the Section of Preventive Medicine and Pathology; letters for Colonel Millard or Major Ellis may be addressed to Room 46A, British Medical Association, 429, Strand, W.C.2. On the second day of the meeting the Section of Medicine will hold a joint discussion with the Section of Preventive Medicine and Pathology on influenza. Owing to the immediate interest of the subject, it is proposed to devote the whole of the morning of April 10th to it. The introductory papers will be by Major-General Sir Wilnot Herringham, C.B., A.M.S., on the clinical aspects; by Captain M. Greenwood, R.A.M.C., on the epidemiology; and by Major Bowman, C.A.M.C., on the etiology. On Wednesday, April 9th, in the Section of Preventive Medicine and Pathology, an interesting discussion on the dysenteries, bacillary and amoebic, is expected; the subject will be introduced by Colonel L. Dudgeon, C.M.G., of St. Thomas's Hospital, and Professor Yorke, of the Liverpool School of Tropical Medicine.

THE DESTINATION OF RED CROSS EQUIPMENT.

THE *Daily Telegraph* published on Tuesday a timely article by a medical correspondent on the need for an increase in hospital accommodation and the way in which it should be provided. Most large hospitals are overtaxed; they have long waiting lists and sometimes they have to send out patients sooner than is altogether desirable; it is argued that some of the patients admitted to the institutions could properly be treated in cottage hospitals, or might be sent out sooner could continued institutional treatment be afforded them. The writer maintains also that fresh hospital accommodation is required for certain classes of patients who have not in the past usually been admitted, especially those suffering from disease in an early stage, or from common ailments which cannot be satisfactorily treated in their homes. Special reference in this connexion is made to dental disease, the cause, direct or indirect, of so much illness, and it is added that beds are required also for maternity cases which cannot be properly treated in the ordinary working class house. "The record of the treatment of these cases in such few institutions as exist shows the importance of providing in every area sufficient hospital accommodation as near as possible to the homes of the patients." The writer concludes that the allowance of hospital beds should be increased from its present proportion of one to each thousand to three to each thousand of population; in this proportion would be counted a certain number of beds in private wards for

patients willing to pay the necessary fees. The local hospitals would provide suitable rooms for such public services as the treatment of school children, child welfare, and dentistry, and it is suggested that the district nurse and the district midwife should reside in the hospital, where they could do much of the work they now do in the homes of the patients. The practical proposal is made that the present opportunity—when the temporary hospitals of the Joint Committee of the British Red Cross and the Order of St. John are being closed—should be taken to utilize so much of the existing equipment as would be suitable for the establishment of a cottage hospital where needed. In many instances those responsible for these hospitals have money in hand as well as the temporary buildings. Though these are usually wooden structures, they would, it is thought, if erected on a good foundation and well cared for, last a good many years; there is ample evidence to support this opinion. The further suggestion is made that it would be very advantageous to retain the services of one or more of the motor ambulances used in the neighbourhood in connexion with these hospitals, and also to enlist the interest of some of the personnel of the voluntary aid detachments. This point, we understand, is already engaging the attention of the Joint Committee. The writer considers that, though the establishment charge would have to be paid for out of charitable funds, all other expenses of such hospitals might be met by direct payments for the patients treated. The local authorities might be expected to pay for the persons for whom they are responsible, and works, clubs and other similar bodies, instead of paying an undefined subscription to the hospital, might be asked to form a hospital fund out of which to defray the cost of each patient they sent. It is believed that the hospitals might expect before long to receive contributions also from approved societies and Insurance Committees. For insured persons or any other contract patients the doctors would receive an agreed payment, but for all others would make their own arrangements with each patient.

VOLUNTARY HOSPITALS AND THE MINISTRY OF HEALTH.

THE second clause of the Ministry of Health Bill introduced last November is reproduced textually in the bill introduced on February 17th. It states that it would be "the duty of the Minister to take all such steps as may be desirable to secure the effective carrying out and co-ordination of measures conducive to the health of the people, including measures for the prevention and cure of diseases, the treatment of physical and mental defects, the collection and preparation of information and statistics relating thereto, and the training of persons engaged in health services." The terms of the clause have given rise to a certain amount of apprehension among persons, lay and medical, interested in voluntary hospitals; but we take the clause to be declaratory or declamatory, and intended merely to give the Minister power to collect information with regard to physical and mental defects, and to use his influence to encourage voluntary hospitals to discharge their duties to the sick and injured even still more effectually than in the past. An instance has been brought to our notice in which in a large provincial town a proposal to extend the local general hospital by building a memorial wing was held up owing to this declaratory clause. The promoters of the project very wisely wrote to Dr. Christopher Addison, who in his reply said: "I am quite sure that you may be satisfied that there will be nothing in our proposals which will make it undesirable or disadvantageous that the beneficent scheme which you have in contemplation should be postponed." Since then Dr. Addison has become President of the Local Government Board, and will, no doubt, be the first Minister of Health. We have no authority to speak for him, but, remembering that in the earlier non-political part of his

career he was a teacher in medical schools, we think there can be no doubt that he is imbued with the opinion that the perfecting of medical education is one of the first duties of the State, and that he will act in unison with the enlightened policy outlined in the memorandum of the Board of Education. As we have set out in a recent issue, the Board of Education recognizes that what we have for convenience ventured to call paulo-post-graduate education is an essential part of medical education, without which it cannot be considered complete. We conceive that any improvement of a local general hospital contemplated by the citizens of the town to which it belongs will have the sympathy and cordial support both of the Minister of Health and the President of the Board of Education, since opportunities for holding resident appointments in such hospitals are matters of urgent necessity for rounding out our system of medical education.

THE EVIL OF UNREGISTERED DENTISTS.

THE report of the Committee appointed to "inquire into the extent and gravity of the evils of dental practice by persons not qualified under the Dentists Act" was issued on February 25th. It is a closely reasoned and comprehensive document, with which we can only deal briefly at present. The general conclusion is contained in the following statement: "We wish to state very strongly that, in our opinion, the State cannot afford to allow the health of the workers of the nation to be continuously undermined by dental neglect. Steps should be taken without delay to recognize dentistry as one of the chief, if not the chief, means for preventing ill health, and every possible means should be employed for enlightening the public as to the need for conservative treatment of diseased teeth. The dental profession should be regarded as one of the outposts of preventive medicine, and as such encouraged and assisted by the State. Treatment should be rendered available for all needing it. The present anomalous position in which an uneducated, untrained person can practise as a dentist, performing surgical operations on the teeth and jaws, doing untold damage and casting undeserved odium and dishonour on a scientific profession is intolerable, and should be dealt with immediately." The Committee, whose report is unanimous, states that there was a great shortage of registered dentists before the war, and that it has been intensified since. The registered dentist tends to go to the centres of populous towns and to smaller towns, so that in fact he attends mainly to the dental needs of the upper and middle classes, the artisan and working classes in the bulk receiving very little treatment from registered dentists, owing, in part, to their uneven distribution in different parts of the three kingdoms. The causes of the shortage of registered dentists are said to be the present unsatisfactory state of the law, allowing the practice of dentistry by unregistered persons who have not qualified for the profession by a prescribed course of instruction, training, and examination, and the length and great expense of the minimum course of instruction and training for dental students. The Committee advises an alteration of the law to prohibit the practice of dentistry by persons not registered, the registration under certain conditions of unregistered practitioners practising at the present time, the establishment of a system of scholarships, the issue of increased grants to dental schools, and a reduction in the minimum time required to be spent by dental students in obtaining a qualification in dental surgery. It advises also the registration after a short course of study and examination of dental mechanics employed as such during the five years last passed. It recommends the establishment of a system of dental treatment for school children, for expectant mothers, and for children under the age of five years, and the employment of dental dressers or assistants acting under the supervision of registered dentists in school and public dental services. To regulate the

admission of unregistered practitioners in practice at the date of the report to registration as dentists it is advised that a special committee should be appointed. It points out that steps should be taken to safeguard the interest of any member of His Majesty's Forces who before joining was an unregistered dental practitioner or assistant practitioner or dental mechanic. The institution of a thorough research into the causes and effect on health of dental caries is advised. It is also recommended that a statutory Dental Board under the General Medical Council should be set up for the government of the dental profession, and that the practice of dentistry by public companies shall be subject to special control, provision being made to meet the case of existing companies.

PRESENT FOOD POLICY.

THE Food Controller made some interesting statements at a conference at the House of Commons last week. He said in the first place that the policy of the Food Ministry was to consider control or the abandonment of control of staple foods from the standpoint of price. If abandonment of control would result in a reduction of prices that policy would be carried out; if there were a danger of prices remaining at their present level or rising above it, control would be maintained. Although it was agreed that the Ministry of Food was not to be one of the permanent departments of State, experience had proved that certain forms of control ought to be made permanent and a bill was being drafted incorporating certain powers now exercisable under the Defence of the Realm Act. One matter in which the work of the Ministry ought to be continued, probably under some other department, was the control of the milk supply. This was necessary to secure increased milk supplies at guaranteed prices, to improve the quality of milk, to prevent the domination of the trade by trusts, to effect economies in the wholesale and retail distribution of milk, and to ensure its equitable distribution. It was subsequently announced in the House of Commons that the question was being considered in the first instance by an interdepartmental conference, comprising representatives of the Ministry of Food, the Local Government Board, and the Department of Agriculture. The other work which Mr. Roberts considered should be made permanent was that connected with national kitchens; they were particularly needed in industrial areas where cheap wholesome food was not at present by any means always obtainable. Mr. Roberts expressed sympathy with the public demand for the liberation of more potable spirits at a time when influenza was prevalent, and on February 25th he stated in the House of Commons that the Cabinet had decided that spirits should be released up to 75 per cent. instead of 50 per cent. of the quantities released in 1916, so that considerable additional quantities ought to be available. He added, in reply to a question whether steps would be taken to ensure that sick people would be able to get whiskey, that endeavours would be made to see that distribution was equitable. There were, he said, 113,788,000 proof gallons of home made spirits in bonded warehouses of the United Kingdom. Before the war the requirements for consumption in this country, exports, ships' stores, and manufacturing purposes, amounted to about 50 million proof gallons a year. It appeared, therefore, that exclusive of spirit manufactured since January 31st, 1919, the stocks of the country were equal to about 2½ years' requirements for all purposes at the pre-war rate. Under the Immature Spirits Act not all the spirits in bond were available for immediate consumption. As the rate of duty had been doubled, and prices were much higher than before the war, it was not possible to say what the rate of consumption would be. In connexion with existing restrictions on articles of food the medical profession is now concerned with the purchase by patients of cream and of additional quantities of meat

and "butter-margarine." In active tuberculosis, diabetes and glycosuria, Graves's disease, pernicious (not ordinary) anaemia, inoperable cancer, convalescence after severe illness or operation, or serious loss of blood, including childbirth in which the child does not survive, and in infantile diarrhoea and wasting, the Food Control Committee may sanction increased rations of meat and butter-margarine, in accordance with the circular issued recently to medical practitioners by the Ministry of Food. In the diseases enumerated, permits to obtain cream may be granted as an alternative to butter-margarine in the proportion of 10 fluid oz. of cream to 5 oz. of butter-margarine. The permit is granted by the Food Control Committee on the strength of a certificate by a medical practitioner. With regard to cream recommended for persons suffering from any other disorder than those enumerated above, the amended Cream Order of December, 1918, restricted the sale or supply of cream for consumption by invalids to half a pint weekly. Applications for cream in these circumstances, accompanied by the certificate of the medical practitioner, are forwarded by the Food Control Committee to the Medical Section of the Ministry of Food, where they are scrutinized by the medical adviser; the Section may then, if it thinks fit, grant a permit. In view of the milk shortage, permits are at present granted only in exceptional cases, and while full consideration is given to recommendations contained in the medical certificate accompanying an application, these certificates are no longer authorities for the supply of cream, as was the case under the original Cream Order of 1917; they are regarded as recommendations submitted to the Ministry for consideration.

THE RECRUDESCENCE OF INFLUENZA.

THE greater severity of the renewed outbreak of influenza in the north of Great Britain, which we mentioned last week, is emphasized by the latest mortality returns. The only Scottish figures at present available refer to the week ending February 15th. The death-rate from all causes for the sixteen principal towns was equivalent to an annual rate of 32 per 1,000, the highest experienced since the present statistical grouping was adopted (in 1913), and 8.2 above that of the previous week. The nearest approach to this figure was 30.5 in the week ending November 2nd, 1918. The highest rate was in Edinburgh (51.6), the Glasgow rate being 31.6, and that of Dundee 23.8. The English data carry the record down to the week ending February 22nd, and show that the large increases have (excepting London) been confined to certain northern cities. Of these, the most striking are at Newcastle-on-Tyne, which returned 163 deaths last week (119 the previous week), at Liverpool with 183 deaths (148 in the previous week), at Manchester with 130 (44 the previous week), and at Bradford 141 (50 the previous week). Stoke-on-Trent, Bolton, Salford, Leeds, and Sheffield also show considerable increases. The deaths from influenza in London for the week ending February 22nd numbered 653, but the increase is not so large as would have occurred had the development followed a similar course to that of the autumn recrudescence, since, as we pointed out last week, on that hypothesis the figure would have been 924. It is too early to say that the figures for the south afford grounds for optimism, but the actual position is rather less grave than might have been feared, although the state of affairs in the north is disquieting.

HOW TO AVOID INFLUENZA.

ALTHOUGH man has lived in houses of one kind or another for several thousand years, and in western Europe since the introduction, somewhere in the fifteenth century, of glass for domestic windows, in houses which can be almost hermetically sealed, yet a human strain capable of withstanding the evil influences of unventilated rooms has not so far been evolved. Our ancestors of a few centuries ago

immured themselves in tightly-closed houses, slept in bed-rooms with windows closed, sometimes even in cupboards or box beds with shut doors. The result was reflected in their mortality, in the prevalence of the plague and other plagues, and in their short average span of life. Though we are wiser than they, and pay lip service to the virtues of fresh air, and talk much and learnedly on ventilation, the severity of the present pandemic of influenza is enough to show that we need to grow wiser. Dr. Leonard Hill, who has done perhaps more than any one else to give a scientific explanation of the air conditions of health, makes another contribution to our pages this week in which he relates some interesting experiments on himself and other volunteers. They lead him to urge as the best means of combating the infection of influenza, the deep breathing of cool air brought about by exercise, and by sleeping in the open air—this last perhaps a counsel of perfection. The advice applies not only to influenza itself, but to the colds and catarrhs which, in the aggregate, are responsible for so much discomfort and loss of efficiency. A striking illustration has been related to us by Colonel C. T. C. de Crespigny, D.S.O., A.A.M.C. During August, 1918, a transport left Australia bound for Great Britain. The 1,200 troops which she carried were accommodated in four troop decks of about equal capacity. Three decks were well ventilated with windsails, but the fourth deck was in this respect very unsatisfactory. Early in the voyage a form of infective pharyngitis and epidemic catarrh broke out among the troops. The incidence of the infection was ten times greater among the men occupying the badly ventilated decks than it was among the others. In all other respects the men were exposed to precisely similar conditions; they wore the same clothes, ate the same food, and all of them slept in hammocks slung very close together. Thus the experience has the value of a carefully planned experiment in showing the effect of freely moving air as a preventive of infections of this nature. Another striking instance, recorded by Colonel Adami, F.R.S., in the first volume of his book on the *War Story of the Canadian Army Medical Corps*, was noted in the review published in the first number for this year. The winter of 1914-15 was very wet, and the troops under canvas on Salisbury Plain suffered extreme discomfort, but nevertheless continued in excellent health. When, after some six weeks, the discomfort of tent life and the increasing cold of winter induced the authorities to replace the tents by huts, then influenza and throat troubles began to spread at once and rapidly, and, what was worse still, a series of cases of cerebro-spinal fever occurred.

THE STRENGTH OF THE R.A.M.C., 1914-1918.

GENERAL SIR WILLIAM ROBERTSON, in his speech at the Hunterian Festival, gave some figures with regard to the growth of the army medical service during the war. They were in round numbers, and on one point he was not clearly heard. We are therefore glad to be in a position to give the precise figures in August, 1914, and in October, 1918:

	August, 1914.		October, 1918.	
	Officers.	Other Ranks.	Officers.	Other Ranks.
Regular ...	1,279	3,811	10,289	102,312
T.F. and T....	1,889	12,520	2,863	30,605
Totals ...	3,168	16,331	13,152	132,917

The officers enumerated in 1918 included 820 dental surgeons. The total number of officers and other ranks among all the military forces and for all the theatres of operations who were wounded and survived was stated by Mr. Bonar Law, on February 24th, to be approximately 2,047,211. The total number of killed was 673,943, but

this includes those who died from wounds or other causes. These figures do not include the Royal Navy nor the Royal Air Force from April 1st, 1918.

We publish in the SUPPLEMENT this week an account of the steps taken by the Central Medical War Committee to protect or promote the interests of members of the medical profession who have been on service.

Medical Notes in Parliament.

The Ministry of Health Bill.

THE Ministry of Health Bill had second reading in the House of Commons on February 26th after a debate which extended through the sitting, but was of a friendly character, nearly all who took part, indeed, welcoming the proposal and promising sympathetic support, though a few were critical of details. Earlier in the afternoon the Secretary for Scotland had announced that at the unanimous wish of the Scottish members a separate bill would be introduced for Scotland, and the present bill, framed to apply to England, Wales, and Scotland, would be remodelled accordingly. Dr. Addison, in the course of the speech in which he moved the second reading, intimated that he was willing that the provisions of the bill should be applied as far as practicable to Ireland. After the second reading an instruction was carried, on the motion of Captain Craig, that Grand Committee should have power to extend the bill to Ireland.

Dr. Addison covered familiar ground in explaining the scheme of the measure. The work of the Central Medical Research Committee was, he said, to be subject to the Privy Council, because the new Ministry would have authority only over part of the United Kingdom—that is, England and Wales—and medical research should be as wide as possible in its survey. Major Astor (the Parliamentary Secretary to the Local Government Board), in an eloquent summing up at the end of the discussion, added that the work of the Research Committee would embrace the Empire and greatly gain thereby.

In reply to Sir Philip Magnus, Dr. Addison stated that the Local Government Board, as well as the National Insurance Commissioners, would cease to be on the passing of the Act. On another point he said that housing must come under the control of the Ministry of Health, as the aim of the Department would be to serve, not only remedially, but preventively.

Sir Watson Cheyne, after congratulating the Government on bringing in the bill, said that the Ministry should have an executive branch to carry out the plans which emanated from the thinking body. The Minister should have an advisory body meeting at definite times, not only to consider the proposals set before it by the Minister, but also to initiate proposals, and should have direct access to the Minister. He could not contemplate a Ministry of Health without a research department. Dr. B. Macdonald (Wallasey) regretted that the Research Committee was to be handed over to the Privy Council. Major Farquharson, speaking as one who had spent the greater part of his professional life among miners, thought that it would be well within the scope of the Research Committee to determine scientifically the amount of labour a worker could afford to give without endangering his physical health. Captain Elliott thought the cutting out of the functions of the Medical Research Committee was unsound, and protested that £60,000 a year was far too small a sum for research. Colonel Raw hoped that the Ministry would have complete charge of the milk supply, and thought a Ministry of Health without a Research Committee would be incomplete. He considered the treatment of mental disease ought to be a primary duty of the Ministry.

The Demobilization of Medical Men.

Replying to Sir Kingsley Wood, Major Astor said, on February 24th, that the number of practitioners working for the Insurance Committees in England on October 1st, 1918, was 8,084, besides a certain number holding commissions in the R.A.M.C., who were free to do some part-time work for these Committees. Since November 11th the number of insurance practitioners on panels in England who had been notified by the War Office as definitely

released was 647. The responsibility for arranging with the Navy, Army, and Air Force authorities for the demobilization of doctors rested with the Ministry of National Service. The Insurance Commissioners made periodical representation to that department for expediting the rate of release for civil needs and for securing the release of particular doctors required for specially urgent necessities in individual areas. The Commissioners were in constant communication with the various Insurance Committees as to the needs of areas.

Assistant Medical Officers in Public Asylums.—Sir Watson Cheyne asked the Home Secretary whether he was aware that assistant medical officers of public asylums were not allowed to marry, and, if so, whether that rule would be rescinded. Mr. Shortt stated in reply that the rules governing service by medical officers of asylums were made by the visiting committees. He was informed that there was no general rule preventing the marriage of assistant medical officers, but the possibility was largely dependent on the nature of the residence provided; in a large number of cases the accommodation was suitable only for an unmarried officer. The Board of Control had used its influence in the direction of securing such accommodation as would enable the senior assistant medical officer, and in large asylums the second assistant medical officer, to marry. Separate houses had been provided with this object in the grounds of some ten county asylums, including four of those belonging to the London County Council.

Insurance Benefits for Discharged Soldiers and Reservists.—In reply to Mr. Devlin, Sir James Craig, on February 19th, said that in Great Britain all men, whether insured or not, who were invalided from the forces or certified on demobilization to be in failing health by reason of their service, were entitled to free medical benefit under the National Insurance Acts—that is, to the services of a general medical practitioner and the supply of medicines, except in the case of uninsured men whose total income exceeded £160 a year. By special arrangements with the Irish Insurance Commissioners which came into force in October, 1918, similar provision was extended to Ireland so far as invalided men were concerned, and the question of extending the arrangements to men in impaired health on demobilization was under consideration. On the same day Mr. Pratt stated that a soldier, discharged to the Reserve for civil work, was entitled to sickness benefits under the Insurance Acts so long as he remained in the Reserve and continued to be an insured person. If, however, he was recalled to the army, sickness benefit ceased to be payable.

Specialist Attendance for Insured Persons.—Mr. Pratt stated, on February 24th, that the supplementary estimates before Parliament in the summer of 1914 provided for the services of medical specialists when the panel practitioner considered it necessary. The matter had been suspended during the war, but was now having attention.

Rabies in Cornwall.—Sir A. Griffith-Boscawen, in reply to Mr. Carew on February 19th, stated that the last case of rabies in Devon and Cornwall was confirmed on February 11th; there were still a number under investigation. The total number of cases to date was 118, of which 94 had occurred in Devon and 24 in Cornwall; 18 civilians, 2 soldiers, and one sailor had been bitten, and had undergone the Pasteur treatment for hydrophobia. Mr. Lambert asked whether generally rabies in these counties was decreasing. Sir A. Griffith-Boscawen replied that it had been better recently, but was by no means stamped out.

THE WAR.

ZEEBRUGGE AND OSTEND.

WHEN the U boat menace was growing more serious, the sinking of passenger and hospital ships more frequent, and the German boasting louder and more confident, some of us asked in our hearts why the navy did not seek out the wolf in his lair, but were silent partly because we assumed the navy knew its own business best, and partly because we had been shamed by Mr. Churchill's bombast about digging the German navy out of Wilhelmshaven. We now know that the British navy had been thinking about the matter very seriously even so early as October, 1914, when the German armies first occupied the Belgian coast. Lord Jellicoe and Admiral Sir Lewis Bayly had then advised the Admiralty that it was possible to block Zeebrugge by sinking ships across the channel. "It was not considered practicable by the Admiralty." That the Admiralty was wrong is proved beyond peradventure by the fact that in April, 1918, after the enemy had had three years and a half to enlarge his defences and strengthen his batteries, the thing was done, and done at the cost of relatively few casualties, and of the loss of one destroyer and two motor launches. We get no hint of who turned the suggestion down in 1914, but in war, as in medicine, the "Minister responsible to Parliament for expenditure" sometimes takes it upon himself to make decisions which involve the

country in great loss of money as well as life. It would appear that the then First Lord of the Admiralty (Mr. Churchill) was anxious for an attack on Heligoland. The idea was unanimously condemned by every flag officer, but was not finally abandoned for some time.

THE PREPARATIONS.

When Lord Jellicoe went to the Admiralty as First Sea Lord in 1916 the idea of blocking Zeebrugge was again mooted, but as the army then hoped to drive the enemy from the Belgian coast nothing was done. By September, 1917, it had become clear that the driving could not be done that year. Sir Roger Keyes was instructed to get out plans for blocking the canal at Zeebrugge and at the same time attacking the Mole as a diversion and in order to destroy enemy destroyers. The scheme was sanctioned in November, 1917, and the dispatch of Sir Roger Keyes, Vice-Admiral Dover Patrol, published in the *Gazette* of February 19th, tells how the enterprise was carried through.

Volunteers were called for, and from the very large number who responded were picked as many officers and men as were wanted. They were drawn from the Grand Fleet, the three Home Dépôts, the Royal Marine Artillery and Light Infantry, the Dover Patrol, the Harwich Force, the Royal Australian Navy, the Admiralty Experimental Stations, and the French Navy. The blocking ships and the storming forces were assembled towards the end of February, and after April 4th received special training in the plan of operations. After two postponements, owing to unfavourable weather, the main force started from its point of concentration at 4.53 p.m. on April 22nd. The distance was sixty-three miles and the time allowed seven hours.

THE BLOCKING OF ZEEBRUGGE.

Vindictive, coming out of a smoke screen four minutes before midnight, saw the Mole 300 yards off, and at one minute after midnight on April 23rd was alongside it. Then followed three or four minutes, "a very trying period," until the Liverpool ferry boat *Daffodil* arrived to push the ship against the Mole. Until this was done it was impossible to land on the Mole, and many casualties occurred during the wait. The viaduct from the Mole to the shore was blown up by submarine C3, whose crew were got away with few casualties. The landing parties from *Vindictive* attempted to storm the defences of the Mole, but, partly because the ship had overshot its allotted station, with only partial success.

The main object of the whole operation was to block the Bruges ship canal at its entrance into Zeebrugge harbour, and when this had been done by *Intrepid* and *Iphigenia*, the signal to retire from the Mole was given at 12.50, and at 1.10 *Vindictive*, her bow being pulled away from the Mole by *Daffodil*, turned under her own helm, and reached Dover under her own steam at 8 a.m. *Thetis*, the first block ship to enter, was badly holed and grounded in the harbour, but her crew, together with those of *Iphigenia* and *Intrepid*, were taken off by motor launches handled with splendid daring and initiative. One of them brought out 101 people from the two block vessels first named; some were killed in the launch and others wounded before they could be transferred to *Warwick*, Vice Admiral Keyes's flag-ship. The crews of the block ships suffered unexpectedly few casualties. Most of the casualties suffered by the expedition occurred on the Mole or on *Vindictive*. Of her we read: "Half an hour after the storming of the Mole had been commenced, the captain visited the decks below and found Staff Surgeon James McCutcheon and the staff under him working with great energy and care. A constant stream of casualties were being brought down every hatch, yet there appeared to be no delay in dealing with each case."

The attempt to block Ostend failed on this occasion, both block ships going aground about a mile and a half to the east of the canal. Their crews were taken off by motor launches under heavy fire.

Casualties.

The casualties to officers and men on April 23rd were: Killed 176, wounded 412, missing 49 (of whom 35 are believed to have been killed). The final paragraph of the dispatch is as follows:

XIV.—MEDICAL ARRANGEMENTS.

"In conclusion, I desire to make a special reference to the praiseworthy manner in which the medical officers and their staff

and volunteer helpers devoted their skill and sympathy to those who were wounded in these operations. Fighting at such close quarters the casualties were bound to be numerous, and the wounds likely to be severe. Staff Surgeon James McCutcheon, M.B., was the senior medical officer of the force. In an able report that officer outlines the work of his staff and the circumstances in which it was done, and I trust that the Lords Commissioners will agree with me in thinking that no branch of the naval service surpassed in zeal and ability the efforts of the medical branch to prove itself worthy of its profession and of the occasion. I have selected with difficulty from a number of very deserving officers the names of three to be representative recipients of such promotion as their lordships may be able to award for these operations to the medical branch of the Royal Navy."

THE SECOND ATTEMPT TO BLOCK OSTEND.

The second expedition to Ostend was so far successful that *Vindictive* was sunk inside the harbour, partially blocking it. Her crew, including wounded, were very gallantly taken off by motor launches to the *Warwick*. She struck a mine, and, though she got back to Dover, it was considered wise to transfer the wounded to *Velox*. The casualties were 8 killed, 30 wounded, and 11 missing (believed killed).

"A FEAT OF ARMS."

Mr. Kipling, in ironic allusive mood, once wrote: "It is the disgrace of our navy that we cannot produce a commissioned officer capable of writing one page of lyric prose." Who reads the following passage in the Zeebrugge dispatch will judge the navy capable of elegiac prose: "I cannot close this brief summary without reference to those gallant souls who did not live to see the success of their endeavours. It seems almost invidious to mention names when every officer and man who took part was animated by one spirit, ardently welcoming the opportunity of achieving a feat of arms against odds in order that honour and merit might be added to that which our Service has gained in the past."

A MESOPOTAMIAN DISPATCH.

THE weather—the cold rain in spring and the oppressive heat in summer—is the recurring note of the dispatch in which Lieutenant General Sir W. R. Marshall, K.C.B., describes the operations of the Mesopotamian Expeditionary Force from April 1st to September 30th, 1918 (*London Gazette*, February 20th, 1919).

It opens with a dryly humorous story of how the holy Ulema and the notables of Nedjef arrived at the conclusion that the leaders of "The Committee of Rebellion," organized with German money, ought to be handed over to British justice. It relates the fighting to drive the Turk from his main position, some of it, in May, done in torrential rain that caused heavy floods. It describes the occupation of Baku, and how on its hurried evacuation the force was able to embark all its sick and wounded.

During the inactivity of the summer everything possible was done to give the men opportunities for physical training and recreation. The results were excellent, and must have greatly assisted the medical service in caring for the health of the force. Of the medical service General Marshall writes:

The period April 1st to July 13th shows a distinct improvement in the health of the troops as compared with the corresponding weeks of last year:

	Last Year.	This Year.
Average weekly admissions on account of sickness. Ratio per cent. of ration strength	1.73	1.45
Average weekly wastage (death and invaliding) on account of sickness. Ratio per cent. of ration strength	0.31	0.16

These figures indicate a very considerable saving to the force, which has been achieved by unremitting care paid by the medical authorities to sanitary and medical requirements, and to the constant devotion to duty shown by the nursing services.

Special thanks are given to the Indian Comforts Fund and other organizations in India, to the Mesopotamian Comforts Fund, the Indian Soldiers' Fund, and the Shanghai Comforts Fund.

The agricultural development of the country is going on, and some 70 per cent. of the cereals available for the force are derived from the Hilla district, being transported on a broad-gauge railway. The harvest in 1918 was late but

bountiful, and it is expected that in future the force will be self-supporting as regards barley and fodder.

A special supplement to the *London Gazette*, dated February 21st, contains a list of names mentioned by Lieut.-General W. R. Marshall for "distinguished and gallant services and devotion to duty." The list includes 54 officers of the A.M.S. and R.A.M.C. (Regular, Special Reserve, and Territorial), 25 Officers of the I.M.S., and 9 of the Indian Medical Departments. In addition, it contains 70 warrant and non-commissioned officers and privates of the R.A.M.C. (Regular and Territorial), and 17 of the Indian Medical Department.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON LIEUTENANT R. A. HOBBS, R.N.

Surgeon Lieutenant Roland Augustus Hobbs, R.N., died of pneumonia, on February 13th, at the Royal Naval Hospital, Haslar, aged 33. He was the second son of Mr. F. A. Hobbs of High Wycombe, Bucks, and was educated at St. Mary's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1908. After filling the post of house-surgeon and anaesthetist at the Royal Surrey County Hospital, Guildford, he went into practice at High Wycombe, where he was honorary medical officer to the High Wycombe and Earl of Beaconsfield Memorial Cottage Hospital. He joined the navy as a temporary surgeon in 1914. He was recently in charge of the Royal Naval Hospital at Hull.

ARMY.

Died on Service.

MAJOR H. G. GIBSON, R.A.M.C.

Major Howard Graeme Gibson, R.A.M.C., died at No. 2 Stationary Hospital, Abbeville, on February 12th, aged 35. He was born on May 20th, 1883, educated at Felsted School and at Guy's Hospital, where he was in the Rugby XV, and took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1907. Entering the R.A.M.C. as lieutenant on January 28th, 1907, he became captain on July 28th, 1910, and brevet major on January 1st, 1918. He went out to France with the original Expeditionary Force in August, 1914, served with the 12th Lancers in the retreat from Mons, and was severely wounded at the first battle of Ypres. He was then stationed at the Army Medical College for two years, and returned to France in November, 1917.

CAPTAIN R. C. DAVIE, R.A.M.C.

Captain Robert C. Davie, R.A.M.C., died of pneumonia after influenza on February 4th, at Largs, while on leave from France, aged 32. He was educated at Glasgow High School and University, where he graduated M.A. with first class honours in 1907, and B.Sc. in 1909, and received the honorary degree of D.Sc. in 1915. At Glasgow University he gained the Dobbie-Smith gold medal and the Donaldson scholarship in botany, and was appointed assistant in the botanical department. In April, 1913, he was appointed lecturer in botany at Edinburgh University, and in 1914 made an expedition to Brazil to carry out botanical research. He took a commission as lieutenant in the R.A.M.C.(T.F.) in the 1st London Sanitary Company on May 29th, 1917, and was promoted to captain after a year's service. He had been in charge of the sterilizing section of a water-tank company at the front.

CAPTAIN J. J. DWYER, D.S.O., R.A.M.C.

Captain James Jameson Dwyer, D.S.O., R.A.M.C., died of pleurisy at No. 30 General Hospital, Calais, on February 19th. He was educated at the Catholic University, Dublin, and took the diplomas of L.R.C.S.I. and L.R.C.P.I. in 1909, after which he filled the posts of clinical assistant at the Chelsea Hospital for Women, and of house-surgeon at the West Kent General Hospital, Maidstone. He took a temporary commission as lieutenant in the R.A.M.C. on December 1st, 1914, and was promoted to captain after a year's service. He received the D.S.O. on June 4th, 1917.

LIEUTENANT W. M. CROMBIE, I.M.S.

Lieutenant William Maurice Crombie, Indian Medical Service, died at the Albert Docks Hospital, London, from influenza following illness contracted at Bagdad, on February 17th. He was the oldest and only surviving son of

the late Dr. J. Crombie of Sidcup, Kent, was educated at St. Thomas's Hospital, and graduated M.B. and B.S.Lond. in 1916, also taking the diplomas of M.R.C.S. and L.R.C.P. Lond. in that year. After acting as senior obstetric house-physician at St. Thomas's, he took a temporary commission as lieutenant in the R.A.M.C. on May 22nd, 1916. On January 23rd, 1917, he was appointed to be a permanent lieutenant in the I.M.S., his commission subsequently being antedated to May 22nd, 1916, and after a year's service to a temporary captaincy.

DEATHS AMONG SONS OF MEDICAL MEN.

Bamber, Claude Charles, Captain 2nd Battalion Warwickshire Regiment and Machine Gun Corps, eldest son of Colonel C. J. Bamber, I.M.S.(ret.), died at Kohat on January 26th. He attained the rank of captain on December 26th, 1914, and at the time of his death was serving with the 3/9th Gurkhas.

Burton-Fanning, Newell E. E., Captain Royal Marine Light Infantry, eldest son of Dr. Burton-Fanning, of Norwich, reported missing on April 24th, 1917, now presumed killed on that date. He was educated at King Edward's School, Norwich, and at Repton, and had entered at Christ's College, Cambridge, before the war, but instead of joining took a commission in the R.M.L.I. He served in Gallipoli, taking part in the landing on Y Beach in April, 1915, at Salonica, and since 1916 in France. He was promoted to captain in May, 1916, and was killed at Gavrelles, near Vimy.

Garrod, Basil Rahere, Lieutenant Loyal North Lancashire Regiment, youngest and last surviving son of Colonel Sir Archibald Garrod, K.C.M.G., A.M.S., physician to St. Bartholomew's Hospital, died of pneumonia on February 4th at No. 36 Casualty Clearing Station, aged 21. He was educated at Marlborough, got his commission from Sandhurst in December, 1915, and was promoted to lieutenant on June 30th, 1917. He went to France in January, 1917, was invalided for trench fever in July, 1917, was attached to the Royal Flying Corps in November, 1917, and returned to France in May, 1918. His two elder brothers, Lieutenant A. Noel Garrod, R.A.M.C., and Second Lieutenant Thomas M. Garrod, were both killed in France.

Grant, James Gibson, late Second Lieutenant 2/10th King's Liverpool Regiment (Liverpool Scottish), son of the late Dr. Grant Bey of Cairo and Aberdeen, died at Ranchory, of illness contracted on active service, on February 19th, aged 27.

Holden, James, youngest son of the late Dr. Holden of Whitby died at the Royal Naval Hospital, Larbert, of pneumonia recently, aged 25.

Hooley, Arthur Wellesley, Lieutenant Army Service Corps, only son of Dr. A. Hooley of Cobham, Surrey, accidentally killed in France, dying at No. 50 Casualty Clearing Station on February 9th. His commission was dated September 11th, 1916. Since January 10th, 1918, he had been attached to the Queen's Royal West Surrey Regiment.

Hooper, P. J., Private Canadian Forces, second son of Dr. Hooper of Burton-on-Trent, died in hospital at Bramshott recently, after prolonged service in France. His elder brother, a surgeon in the navy, was lost in H.M.S. *Natal* about three years ago.

McGeagh, William Morice, Lieutenant 3rd (Reserve) Battalion South Lancashire Regiment (Prince of Wales's Volunteers), younger son of Dr. R. T. M. McGeagh, died of pneumonia after influenza at Mona Lodge, Ramsey, Isle of Man, aged 22, on February 10th.

Ogston, Alexander Lockhart, Captain Royal Marine Artillery, fourth son of Sir Alexander Ogston of Aberdeen, past president of the British Medical Association, died of pneumonia on February 8th.

Spencer, Hermann E., eldest son of Dr. Frederic Spencer of Highgate, died at Maghull Military Hospital on February 13th. He was at Jesus College, Oxford, before he joined the army.

Sturge, Captain Edmund, 10th Middlesex T.F., died, aged 23, on February 8th, at No. 79 General Hospital, Taranto, Italy, on his way home, after serving continuously through the campaigns in Mesopotamia and Palestine. He was the younger son of Dr. H. H. Sturge of Elgin Avenue, W., formerly Representative for the Kensington Division. On the declaration of war against Germany on August 4th, 1914, 2nd Lieutenant E. Sturge, together with all his brother officers and 80 per cent. of the men volunteered for active service anywhere. The regiment left for India that October. In India Lieutenant Sturge passed out fourth in a class for signalling, and learnt to speak Hindustani. When General Townshend's army was captured, he volunteered to go to Mesopotamia. He served throughout the campaign under General Maude, was promoted to captain when 20, and his name was included among those given by Sir Stanley Maude as deserving of special mention. Later he was attached to the 3rd Indian Divisional Signal Company, was transferred to the Holy Land, and took part in the strenuous conquest of Palestine under General Allenby. After four and a half years' service he received leave in January, but on the way home was admitted to hospital at Taranto, where bronchopneumonia developed after influenza and proved fatal. He was educated at Merchant Taylors' School as a boy. Captain Sturge was a keen member of the O.T.C., and played Rugby for the 1st XV. When writing home to announce he had volunteered for Mesopotamia he wrote: "I have been carefully trained and it is my duty to go; and, besides, I go gladly."

HONOURS.

The following is a continuation of the list published in the issue of February 22nd of awards to medical officers in recognition of their "conspicuous gallantry and devotion to duty" in the field:

Military Cross.

Temporary Captain Charles Humphrey Lloyd, No. 8 Field Ambulance, R.A.M.C.

For great courage in guiding squads with wounded through Masnières and the ground southeast of Rumilly on the night of October 1st-2nd, 1918. He dressed a wounded officer in the open during a heavy burst of fire, and got him away to safety. On October 3rd he searched for wounded officers under fire, dressed their wounds, and brought them in.

Temporary Captain George Barton McCaul, R.A.M.C. (Salonica.)

His battalion took up an advanced position of readiness in Jackson's Ravine early on September 19th, 1918, and was for several hours exposed to concentrated shell fire. During this period he moved freely about attending to wounded, both of his own battalion and another unit, and showing total disregard for his personal safety. During the entire day his conduct was most exemplary, and he undoubtedly saved many lives.

Captain Alexander Edward MacDonald, C.A.M.C., attached 3rd Battalion Canadian Infantry, 1st Cent. Ontario Regiment.

During the attack on Upton Wood on August 30th and 31st, 1918, he worked in the open, under heavy fire, attending to and dressing the wounded, remaining at his duty until all the wounded were cleared, in spite of the heavy shelling. On one occasion a shell fell close to him, killing two men and severely shaking him, but he at once pulled himself together and went on with his work. His gallantry and composure were most marked.

Captain Herbert Bruce MacEwen, C.A.M.C., attached 5th Battalion, Mounted Rifles, Quebec Regiment.

While near Monchy from August 25th to 28th, 1918, he kept in close touch with the battalion in the advance, attending to the wounded in the open under heavy shell fire. He worked continuously, mostly in the open, for thirty-six hours, and was largely responsible for the small percentage of killed in the unit.

Temporary Captain James Taylor Rogers MacGill, R.A.M.C. (Salonica.)

On September 19th, 1918, he carried in wounded and dressed them, under intense machine-gun and artillery barrage. Later, on Sugar Loaf, for four hours he helped to carry in wounded after his stretcher-bearers were wounded. His courage and energy were the means of saving many lives.

Temporary Lieutenant Rob Roy MacGregor, R.A.M.C., attached 2nd Battalion Worcester Regiment.

Throughout the fighting of September 29th, 1918, south of Villers Ghistain, he worked untiringly under heavy shell fire, and, though suffering from gas, attended over 200 cases. He had to carry out his work in the open, there being no available shelters.

Captain Archibald Lang McLean, A.A.M.C., attached 17th Battalion, Australian Infantry.

During the attack on August 8th, 1918, east of Villers Bretonneux, near Amiens, he followed the attacking troops with his section, tending and dressing wounded under fire on the way. Almost immediately after the objective had been taken he established his regimental aid post in the village of Warfusse, where he worked continuously under great difficulties. Later, during the advance on the following day, he established his regimental aid post almost on the jumping-off line, where he tended and cared for wounded under heavy artillery fire. His energy and zeal saved many lives.

Captain John Davis Marks, N.Z.M.C., attached 2nd Battalion, Canterbury Rifles.

During operations near Ruyaulcourt on September 4th to 5th, 1918, while his regimental aid post was twice heavily shelled and several casualties occurred, he continued at duty, binding men up and shifting them to shelter in spite of the heavy bombardment. Again on September 7th, when the regimental aid post had been established on the edge of Havrincourt Wood, near Quotient Avenue, the enemy bombarded the place heavily. Under this fire, which had inflicted a number of casualties, he continued with his work. On both occasions his devotion to duty was admirable.

Captain Christopher Norman Matheson, 7th Field Ambulance, A.A.M.C., attached 27th Battalion, Australian Imperial Forces.

In the attack east of Mont St. Quentin, on September 2nd, 1918, he pushed forward behind the first waves, attending the wounded under heavy artillery and machine-gun fire. Later he established a forward post, and through his gallantry and his untiring exertion he saved many lives by getting their wounds expeditiously dressed and evacuating them quickly.

Captain Alexander Paterson Murphy, 1st Field Ambulance, A.A.M.C., attached 12th Battalion, Australian Infantry.

While near Peronne, from August 23rd to 26th, 1918, as regimental medical officer of a battalion, he placed his aid post in a railway cutting, where he dressed the wounded of his own and other units under machine-gun and shell fire. When all our wounded had been cleared he went out and attended to the enemy in the open; while doing so a shell burst in their midst, killing his orderly, a stretcher-bearer, and several wounded, and wounding him. He continued at work for another twenty-four hours before reporting for relief.

Captain Edgar Llewellyn Foot Nash, R.A.M.C.(S.R.), attached 1st Battalion, Essex Regiment.

For contempt of danger in caring for wounded under heavy shell fire at Achiet-le-Grand on August 23rd, 1918. He moved about in the open under heavy shelling, dressing men's wounds and preparing them for immediate evacuation with the greatest coolness, setting a very fine example to his staff and to the bearers. It was due to his untiring efforts that the wounded were so successfully and quickly evacuated.

Captain Reginald Edward Nowland, A.A.M.C., attached 157th Brigade, R.F.A.

On September 27th, 1918, near Ypres, the leading battery came under heavy shell fire and suffered many casualties. Ignoring all danger, he established an aid post on the roadside and attended to the wounded. Later in the day, when the batteries moved further forward, he visited all the gun positions and attended to the wounded.

Captain Laurel Cole Palmer, 13th Field Ambulance, C.A.M.C.

During operations from September 2nd-4th, 1918, near Arras, while in charge of squads evacuating wounded, he kept close up to the advancing infantry, directing the collecting and dressing of casualties. The enemy shelling and machine-gun fire was intense, but time after time he went through the barrage with a total disregard of personal safety. On the night of September 2nd the relay post was heavily shelled with gas, but he kept at his work, protected his wounded, and got them to a place of safety. He showed great courage and devotion to duty.

Temporary Captain (acting Major) Donovan Blaise Pascall, No. 11 Field Ambulance, R.A.M.C.

During the operations astride the Arras-Cambrai canal on September 2nd, 1918, he was in charge of the evacuation of casualties from the front, and repeatedly made journeys over the shell-swept area around Dury and Eteripigny, locating and maintaining touch with regimental aid posts and bearer posts. Through his disregard of danger the casualties were speedily evacuated.

Captain (now Major) William James Ellery Phillips, 11th Field Ambulance, A.A.M.C.

On September 6th and 7th, 1918, during an advance on Roisel, he worked continuously for forty-eight hours in charge of the evacuation of the wounded from the forward aid posts. Although the area was heavily shelled, he got his ambulance cars right up and cleared the wounded with great rapidity. His energy and perseverance set a splendid example to those working with him.

Temporary Captain Harold John Pickering, No. 15 Field Ambulance, R.A.M.C.

For conspicuous gallantry and devotion to duty from September 25th to 30th, 1918, near Cambrai, especially one night, when, hearing that there was a congestion of wounded at a regimental aid post, he went forward through heavy shell fire and remained all night, collecting bearers from every available source and supervising the clearing of the post. Throughout the whole period he only had one other officer to assist him in the forward area. He inspired his men with his own cheerfulness, energy, and endurance.

(To be continued.)

The King has approved of the award of the Distinguished Service Cross to Surgeon Lieutenant Walter Grimshaw Bigger, R.N.

For services with the Royal Marine Artillery Siege Gun Detachment in Flanders. On May 29th, 1918, while he was attending to the wounded in "Carnac" gun position a second shell burst in embrasure. Surgeon Lieutenant Bigger continued his work with noteworthy calmness and devotion to duty. The coolness under fire displayed by this officer on other occasions has gained for him the confidence of the officers and men under his medical charge.

The President of the Portuguese Republic has conferred the Military Order of Avis—Third Class—upon Surgeon Lieutenant Commander Basil Taylor, R.N., for distinguished services rendered during the war.

Ireland.

MINISTRY OF HEALTH FOR IRELAND.

The Irish Branch of the Medical Council has issued a memorandum giving some reasons why Ireland should be included in the Ministry of Health Bill. The limitations of the powers of the county councils and urban sanitary authorities are set forth with the explanation that "Irish public health legislation is nearly all permissive and is therefore largely ignored." The state of many of the county and union infirmaries is dealt with, as well as unsuitable dispensary depôts. The memorandum contains the following passages:

There are approximately 1,000 practitioners engaged in the Poor Law and county infirmary medical services, elected to their posts by the boards of guardians and committees, without any regard to their professional qualifications; the dispensary doctor being *ipso facto* medical officer of health for the district. . . . If the Ministries of Health Bill is applied to Ireland, with necessary alterations, the entire public health, medical and hospital services must be recast; medical relief must be separated from the relief of pauperism and destitution. All health legislation must be made obligatory. The medical and hospital services must be co-ordinated, and together be put under the control of either a special health board, composed chiefly of medical men, or remain under the control of a department of the Local Government Board, reinforced by the addition of several medical members, to either of which the administration of the sanatorium benefit of the Insurance Act should be transferred.

The proposed remedies include the appointment of a central authority directly responsible to Parliament; a statutory committee; and the establishment of a national or State medical service. Other alterations suggested

refer to notification of infectious diseases, the cure and prevention of tuberculosis, and provision for the medical inspection of school children.

QUEEN'S UNIVERSITY, BELFAST.

At the meeting of the senate of Queen's University, Belfast, on February 19th, Colonel Thomas Sinclair, C.B., F.R.C.S. Eng., Professor of Surgery, lately Consulting Surgeon, B.E.F., France, was unanimously appointed Registrar of the University in place of Dr. Johnson Symington, F.R.S., Professor of Anatomy, who has resigned through ill health. The registrarship is to a great extent an honorary post, and carries with it a seat on the Senate. The resignation of Professor Symington causes great regret, and much sympathy is felt for him in his illness; it was hoped at first that he might have been able to resume his full duties; but this proved impossible. We hope that his original anatomical investigations and researches, and his studies on brain sections will be carried on from time to time. The appointment of Professor Sinclair as registrar will be a most popular one, and his three years at the front will enable him to bring before the Senate first hand information of the spirit of the day, and of the requirements of the student as seen in France and in the army. He will be a source of strength to the Senate.

ROYAL VICTORIA HOSPITAL, BELFAST.

At the meeting of the Board of Management of the Royal Victoria Hospital on February 19th, Dr. J. A. Lindsay, F.R.C.P., Professor of Medicine in the Queen's University, Belfast, was elected chairman of the board in the place of Sir William Crawford, who had resigned through ill health. This is the first time that a member of the active medical staff has been put in this honourable and responsible position; it is evidence of the cordial good will that exists between the board of management and the medical staff. In the active times of reconstruction that lie ahead, a full and clear understanding, pleasant relations, and mutual trust between the two bodies will be of enormous importance and help. Sir William Crawford, who has been twice elected chairman for five years, sent a cheque for £1,000 as a donation to the funds of the hospital with his letter of resignation.

ULSTER MEDICAL SOCIETY.

At the meeting of the society on February 20th, when Dr. James Colville, President, occupied the chair, Professor Johnson Symington was elected an Honorary Fellow for his researches in anatomy. Colonel T. Sinclair, C.B., F.R.C.S., read a paper on the war surgery of the chest. He gave a full and lucid exposition of the subject and stated the results of his experience during his three years' work in France. A large number of Fellows expressed their thanks to Professor Sinclair for what many felt will prove the basis of a new era in the surgery of the chest.

Correspondence.

THE TREATMENT OF WOUND SHOCK.

SIR.—Dr. Leyton is quite correct in saying, in the issue of February 15th, that Pugliese used a weak solution of gum arabic in the course of experiments on animals whose blood pressure was low on account of section of the spinal cord. The rise of pressure he obtained was not more permanent than that which simple saline solutions are capable of producing. The fact that his solution was far too weak to do otherwise shows that the idea was of a totally different kind from that which lies at the basis of my work. Indeed, he speaks of an action of gum on the myocardium, and through the vagus nerves. Japelli had previously used gelatin solutions up to 20 per cent. in concentration to increase the viscosity of the blood: again another question. I believe that the addition of a small quantity of gum arabic to solutions for the perfusion of the isolated heart has been tried, but I am unable to find the reference. In this case, the idea seems to have been to provide some kind of nutrient. Knowlton's use of it in 1911, to prevent the diuretic action of saline, is the nearest approach to mine, as I pointed out in my original paper.

It is not my object, however, to deprive Dr. Pugliese of the credit of his experiments, which are of interest from another point of view; but it is of some importance, if gum saline is to be used for shock or haemorrhage in such a way as to be of value, that the reason of this value should be properly understood. It has been pointed out to me that I ought to state the course of the experiments and reasoning which led me to the selection of a particular strength of solution. I would therefore ask a brief space to do this.

In the course of certain experiments which were attended by a fall in blood pressure, it was my wish to be able to raise this pressure permanently so as to maintain the animal in better condition. In order to find a substitute for blood I removed a known volume by bleeding and then replaced it at once by an equal volume of various solutions. Naturally, the first to be tested was isotonic saline (Ringer's solution). It was found that the original pressure was only partially restored. This was clearly due to defective viscosity, since the peripheral resistance is proportional to the viscosity of the blood. It might have been overcome by injecting a larger volume. In any case, the low viscosity would not have been serious if the rise actually produced had been permanent. But the blood pressure had returned to its old level in half an hour or so. The saline solution had left the circulation, as could be shown by determination of the haemoglobin value of the blood. The saline solution was clearly of no value, as might, indeed, have been foreseen from the work of Sherrington and Copeman. Hypertonic saline was very little better, nor were additions of calcium salts or bicarbonate.

The cause of this rapid loss of mere salt solutions becomes clear on consideration of the work of Starling and of Scott on the permeability of the blood vessels. The reason why normal plasma does not leave the circulation is on account of the presence in it of colloids which have an osmotic pressure, together with the fact that the wall of the blood vessels is freely permeable to water and salts, impermeable to colloids. Hence the osmotic pressure of the colloids is effective in attracting water and thus balancing that lost by filtration. So that if a fluid injected is to remain, it must contain a colloid in sufficient amount to have an osmotic pressure equal to that of those in the blood. On testing various possible colloids I found that gelatin in 6 per cent. solution, or gum arabic in 7 per cent., were the only practicable ones, and there are well known objections to the use of gelatin. Since 7 per cent. gum arabic is not sufficiently concentrated to be isotonic with the blood corpuscles, it was necessary to dissolve it in 0.9 per cent. sodium chloride.

On replacing lost blood by 7 per cent. gum saline I found that not only was the arterial pressure restored to its normal value, owing to the viscosity of the solution being as great as that of blood, but that the effect was permanent—a matter of much more importance.

It was found that good samples of gum arabic are perfectly innocuous and devoid of any chemical or drug-like action. The effect is purely physical. I refer to this because it appears that there are mistaken ideas current that it has some sort of drug-like properties.

Since wound shock had been shown to be associated with decrease in the volume of blood in circulation, just as after haemorrhage, it was obvious that gum solutions should be tested in such conditions, experimental and clinical. The results were favourable, but need not be further referred to here.

It will be seen that the crucial factor is just the concentration of the solution, and that the use of weak solutions cannot in any sense be regarded as an anticipation of the correct method, which depends on having a colloidal osmotic pressure equal to that of the blood. The Italians have no cause of grievance. Indeed, it might be said that if Dr. Pugliese had made acquaintance with Starling's work on the production of lymph, he might have made important discoveries in his experiments. Hogan introduced a solution containing a small amount of gelatin, on the ground of its "combination" with water. But having missed the important property of osmotic pressure, his solution was ineffective.

If the normal impermeability of the vessel wall to colloids is damaged by prolonged asphyxia, this colloidal osmotic pressure is no longer effective. In such a condition, not only do gum solutions leave the vessels, but

blood plasma itself does. Hence in late stages of shock both gum saline and blood transfusions are useless—an unfortunate experience too often met with in the case of wounded men.—I am, etc.,

University College, London, Feb. 21st.

W. M. BAYLISS.

THE DEFINITION OF "PRIORITY."

SIR,—In your issue of February 15th there is a letter signed by Dr. A. S. Leyton quoting a suggestion made by Pugliese in 1912 to the effect that injections of "gum Ringer" might be useful in cases of considerable haemorrhage.

So far I have no quarrel with the author. When he implies that the credit of this treatment is due to Pugliese rather than to Bayliss, I must emphatically object.

As the number of workers in science grows it is inevitable that many minds must strike on the same idea. I contend for the principle that true priority goes to the man who is first in the quality of the work with which he supports his ideas. The whole quality of scientific work would deteriorate if the laurels of research were to go to the man who thrust his ideas upon the world when he should sit down to make them good. I have no special knowledge of the value of the treatment in question, but till Dr Leyton can bring forward on behalf of Pugliese some body of work comparable with that of Bayliss, I cannot but think that Bayliss should have the credit for the treatment.—I am, etc.,

London, S.W., Feb. 20th.

JOSEPH BARCROFT.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—The letter by Mr. Thomson Walker in your issue of February 15th comments on my article on the state of the ureters in gunshot wounds of the spine; but it passes from that to the larger question of the general treatment by British surgeons in France of the bladder in casualties with paraplegia, and it condemns our supposed indifference to Mr. Thomson Walker's suggestion of February, 1917, that early cystostomy should be the routine treatment for all such cases, so as to avoid the introduction by catheterization of an infection that sooner or later would prove fatal when it ascended to the kidneys.

The dangers of catheterization have long been familiar to all surgeons, and an early suprapubic cystostomy was advocated and practised, among others, by Sir Victor Horsley in civil injuries before the war. This procedure was considered at once when hospitals began work in France, and was soon laid aside as impracticable. It was again tried in 1917 in deference to the forcible arguments of Mr. Thomson Walker, and once more rejected owing to the practical difficulties of nursing such patients during the movements of active service.

The last method employed has been that of avoiding all surgical interference or catheterization, and of emptying the bladder by massage and pressure from without until a satisfactory evacuation was ultimately established by periodic reflex micturition. This treatment had often to be attempted in cases where infection of the bladder was present, and it therefore became necessary to know whether the bladder paralysis was associated with similar relaxation of the ureters and of their valved entrance to the bladder, because if any such paralytic dilatation existed at an early date, bladder massage would introduce danger by forcing infection up into the pelvis of the kidneys.

My paper was written purely in reference to this question. It was necessary to ascertain the condition of the ureteric valves and the power of the ureteric peristalsis at the early date when massage had to be undertaken. Mr. Thomson Walker objects to my quoting observations made within the first few days of the spinal injury—that is, at the very time when we wish to know what is occurring—and he disregards my observations on the existence of peristalsis. What I saw—and some of these observations were made in 1916, when these questions were under discussion in France—satisfied me that the ureter after paraplegia retained its power to shut off the renal pelvis from the contents of the bladder, and that in consequence massage was to that extent justifiable. This was only one small point in a general argument, but it was necessary to discuss it so that no point should be neglected.

Dr. Fearnside's excellent article in *Brain* is familiar to every one as being chiefly a review of all previous work, and a direct quotation from it hardly deserves blame as an attempt to ascribe to the reviewer the work of other men. I regret that Mr. Thomson Walker found occasion for protest in this detail; I am equally surprised that he should have found in my brief paper on the ureters occasion to criticize so harshly the surgical practice of myself and my colleagues in France, and to write on the detail of this paper a review that neglects the argument to which my paper was directed and incorrectly describes the progress of work and of thought in France.—I am, etc.,

France, Feb. 21st.

ANDREW FULLERTON.

PREVENTION OF VENEREAL DISEASE.

SIR,—The article on the treatment of venereal disease, by Sir Archdall Reid and Surgeon Commander P. Hamilton Boyden, R.N., which appeared in the *JOURNAL* for February 8th, is a contribution of great importance to the increasing evidence of the fact that the infections of syphilis and gonorrhoea can be immensely reduced by the careful and prompt use of a simple disinfectant. It shows conclusively: (1) That the element of the period of time which passes between exposure to risk and use of the disinfectant is of prime importance, greater even than that of the actual kind of disinfectant employed; (2) that the mode of application of the solution of permanganate recommended by the writers is simple and requires no special skill, thus disposing of the oft-repeated objection by those who oppose medical prevention, that the lack of special skill would render this practice futile.

Since, then, the good results of the earliest possible use of such a simple disinfectant as potassium permanganate have now been proved so successfully, surely this matter should be fully considered by a responsible body of medical experts before any public scheme is adopted to bring this necessary sanitary measure to the knowledge of the civilian community in a practical manner.—I am, etc.,

London, W., Feb. 24th.

H. BRYAN DONKIN.

ASYLUM MEDICAL OFFICERS.

SIR,—It is reported that at a recent conference of asylum authorities a recommendation was made that asylum medical officers should be required to take a diploma in mental diseases.

The asylum medical officer must take the diploma, presumably at his own expense in time, effort, and money, in order that the scientific tone and efficiency of the asylum service may be raised. And is he to get any reward for thus having better fitted himself to look after his patients? Not a penny. I hear of no recommendation to increase his salary or to remove any of his very real grievances. Consider his position:

1. He is actually forbidden to marry. I cannot believe that this is realized by the rest of the profession. Imagine what capital Labour would make out of such despotism!
2. He has, accordingly, to live an "institution life"—that is, an unnatural existence amid morbid surroundings which are much more depressing than those due to bodily disease only, and usually at some distance from any of the relaxations and amusements provided by town life.
3. His chances of becoming a superintendent towards the end of his days are about ten to one against.
4. His private life has about as much privacy as a goldfish's. Well, perhaps, I exaggerate just a little. I do not really think that he is under observation whilst in his bath, but in most asylums his comings and goings are under supervision and scrutiny. He must sign a book when he goes out and sign again when he returns. The time when he enters and leaves his wards is booked, so little is he to be trusted.
5. He sees bonuses and increases of salary being granted everywhere, but there is nothing for him. He has no union to look after his interest, no representatives to put his case before the Asylums Board, and consequently his salary remains at its pre-war level, on the assumption that "Thou as don't ask don't want."

The fact of the matter is, that if the asylum medical service is to take its place (even though it be the last place) in the march of progress and reconstruction, it will have to be made much more attractive and worth while to get the right men.

Is anything going to be done? I should like to sign my name, but it would be impolitic to do so. I feel confident.

however, that I am expressing the views of many colleagues who, like myself, are

February 24th.

"STICK IN THE MUD."

* * The reply of the Home Secretary to the question put in the House of Commons by Sir Watson Cheyne on February 20th will be found at p. 258.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on February 22nd the degree of Doctor of Medicine was conferred upon E. D. Adrian and J. F. Taylor.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on January 29th.

Dr. L. S. Dudgeon, C.M.G., late temporary Colonel A.M.S., will give a course of ten lectures at St. Thomas's Hospital on diseases met with in the subtropical war areas, on Wednesdays and Fridays, at 5 p.m., beginning on March 5th. The lectures, which are open to students of the university and to medical practitioners, will be illustrated by lantern slides, diagrams, and microscopical preparations.

The Lindley Studentship of £100 and the University Studentship in Physiology, value £50, will be awarded to students qualified to undertake research in physiology. Particulars can be obtained on application to the Academic Registrar.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary council was held on February 13th, when Sir George Makins, President, was in the chair.

Diplomas of membership were granted to sixty-two candidates found qualified at the recent examination, and diplomas in public health to seven candidates found qualified by the Royal Colleges of Physicians and Surgeons.

A donation of fifty guineas was made to the War Emergency Fund of the Royal Medical Benevolent Fund.

Dr. W. S. A. Griffith was reappointed to represent the College on the Central Midwives Board for the period of one year from March 31st, 1919, and Mr. G. Bellingham Smith the representative of the College on the Managing Committee of the British Hospital for Mothers and Babies, Woolwich.

Sir Charles Ballance was appointed Bradshaw lecturer for the ensuing year.

First Examination for the Fellowship: Amended Regulation.

In the first of a series of regulations recently made in connexion with this examination (BRITISH MEDICAL JOURNAL, February 1st, p. 145), the words "who hold or have held commissions" were deleted from the previous form, and the amended rule ran as follows:

"Notice is hereby given that surgeons who have done commendable surgical work in connexion with His Majesty's Forces during the war, may be admitted to the first examination for the diploma of Fellow on special conditions." (The word "surgeons" includes men and women.)

Election of Fellows into the Council.

A meeting of the Fellows will be held at the College on Thursday, July 3rd next, for the election of two Fellows into the Council in the vacancies occasioned by the retirement in rotation of Sir Berkeley G. A. Moynihan, and by the death of Mr. L. A. Dunn.

FIRST EXAMINATION FOR THE FELLOWSHIP.

JUSTICE (B.E.F.) writes: I see in your issue of February 1st a notice by the Royal College of Surgeons of England of a special examination for the Primary Fellowship in May, 1919. The examination is for those "surgeons who hold or have held commissions in His Majesty's Forces during the war and who have done commendable surgical work during such service." The notice continues by saying that "the questions asked will have a direct bearing on practical surgery, and will not include morphology, embryology, histological or chemical methods or practical examination in the use of the apparatus of the physiological laboratory."

The medical officers to whom these special regulations apply are those who have been lucky enough to have had opportunities of gaining surgical experience and to have escaped the majority of the risks of war during the past four years, because they must have done their work either at hospitals in England, base hospitals, or casualty clearing stations with one of the Expeditionary Forces. The medical officers who have served with battalions or field ambulances are obviously unable to enter for this special examination because, through no fault of their own, they have had no opportunity of gaining surgical experience or of doing "commendable surgical work."

Those latter, if they want to take the Primary Fellowship examination, will quite rightly have to do so under the usual peace-time conditions.

Why does the College give this section of medical officers such privileges when through their good fortune during the war they already have such a great advantage over their confrères

of the "forward area"? I appeal through your columns to all the members of the medical profession who have any idea of justice to exert their influence to prevent this very unfair special examination from being held. As I am not yet demobilized I enclose my card.

Obituary.

A. M. PATERSON, M.D. EDIN., F.R.C.S. ENG.,
LIEUTENANT-COLONEL R.A.M.C.,

Professor of Anatomy, University of Liverpool; Assistant Inspector
Special Military Surgery.

THE death of Professor Paterson, which took place rather suddenly on February 13th, has caused deep regret to all who knew him. Four days previously, in the course of his military duties, he had returned from London feeling indisposed; bronchopneumonia supervened, and he passed away.

Andrew Melville Paterson was born in Manchester in 1862, and was the son of a Presbyterian minister. He received his general education at Manchester Grammar School, and afterwards studied at Owens College. He graduated M.B., C.M. Edin. in 1883 with first class honours, and in 1886 became M.D., receiving the Gold Medal for his thesis on the spinal nervous system of mammalia. At the outset of his medical studies Professor Paterson was irresistibly attracted to anatomy. He held successively the post of a demonstrator of anatomy in the University of Edinburgh, and demonstrator of anatomy at Owens College.

In 1888 he was appointed to the newly-founded chair of anatomy in University College, Dundee, and held that post with distinction until in 1894 he was elected to the Derby chair of anatomy in the University of Liverpool, which he held at the time of his death. Under his guidance the anatomical school of the university made great progress, and the anatomical department was so greatly developed under his care that it may be described as his best memorial. He was untiring in making complete the teaching arrangements for the subject of which he was so brilliant an exponent. As a lecturer Professor Paterson made the "dry bones of anatomy live," and as a blackboard delineator was unrivalled. Indeed, it may be said he built up the subject matter of his lectures by rapid and graphic illustration before the eyes of his hearers. A good disciplinarian, he riveted the attention of the students by his force of character and his pictorial ability, and made his lectures always interesting and attractive. Professor Paterson was dean of the medical faculty from 1896 to 1903, and he played a prominent part in the development and arrangement of the structural additions to the university. In 1903 Professor Paterson as Hunterian Professor delivered three lectures on the development and morphology of the sternum, based on the results of his own researches carried out in the midst of his multifarious duties. In 1910 he was elected a Fellow of the Royal College of Surgeons of England. He was an examiner in anatomy at the Universities of Oxford, Cambridge, Durham, and London, for the Indian Medical Service, and for the Conjoint Board in England. He took a great interest in the establishment of the Liverpool Dental Hospital, and as treasurer was most indefatigable in raising funds for its maintenance. He always regretted that dentistry had not remained, as the other specialties, an integral part of medicine. Professor Paterson was the author of many anatomical papers, and was a past president of the Anatomical Society, contributed to Cunningham's *Text-book of Anatomy*, and wrote a *Manual of Embryology*.

At the beginning of 1917 Professor Paterson became assistant inspector of military orthopaedics, and as chief of staff to Major-General Sir Robert Jones was strenuously occupied up to the time of his death. A man of unbounding energy concentrated in not too strong a body, Professor Paterson could not remain inactive, and there is no doubt that his military duties hastened the end. Professor Paterson sought recreation in golf, and was a past captain of the Royal Liverpool Club.

In discussion he was forceful, a clear speaker and to the point, socially genial, and in matters in which he was deeply interested at times uncompromising in his views.

The funeral service took place at Mossley Hill Church, where representatives of the university, prominent citizens, and numerous friends were assembled to pay their tribute

to the memory of a well spent and all too short a life. Professor Paterson leaves a widow, a son and three daughters. One son, Lieutenant Paterson, lost his life in the battle of Jutland.

Professor WILLIAM WRIGHT of the London Hospital, in the course of an appreciation expressing the affection and esteem with which he regarded Professor Paterson, an intimate friend of fifteen years, writes: He thought rapidly, he formed his judgements rapidly, he wrote rapidly whether in rhyme or prose, he sketched rapidly, and moved rapidly. He was pre-eminently one who accomplished things, and he has left, in the University of Liverpool, an anatomical department, in my opinion, second to none in equipment, arrangement, and endowment. As an anatomist he was most regular in his attendances at the meetings of the Anatomical Society, and one of the most frequent contributors to its proceedings. Paterson did not perhaps quite fulfil the brilliant promise of his early days—a fact which he was not slow to acknowledge, and which he regretfully explained as due to his having allowed himself to become engrossed in administrative duties and in academic and polemical discussions. Still, he has a large number of original, thoughtful, and highly important papers on anatomy to his credit, his contributions to our knowledge of the sternum, the sacrum, and the limb plexuses being of special value. As an anatomist he formed, too, an interesting link with the past, having served as a demonstrator to the late Professor Morrison Watson of Manchester, the earliest occupant, I believe, in the provinces of a chair of human anatomy. Finally, no mention of Paterson would be anything but incomplete which did not refer to the warm generosity which he showed for any cause in which his interest and sympathy had been enlisted. Altogether he was a man who inspired warm and lasting affection, and he will be long and deeply mourned by an unusually large circle of friends.

HARRY BLAKEWAY, M.S., B.Sc.LOND., F.R.C.S.,
Resident Assistant Surgeon St. Bartholomew's Hospital.

We regret to announce the death from pneumonia, on February 15th, at the early age of 35, of Mr. Harry Blakeway. Not many weeks have passed since St. Bartholomew's Hospital had to mourn the loss of one of the most brilliant members of its younger medical staff in the person of Dr. A. E. Stansfeld, and now the school has received yet another blow by the death of Mr. Blakeway, who was surgical registrar and resident assistant surgeon. Mr. Blakeway had had a brilliant professional career, and there was every prospect of his adding lustre to it as the years went by. He took the B.Sc. degree of the University of London in 1905 and the M.B. and B.S. degrees in 1908. In 1910 he became F.R.C.S. Eng., and took the degree of M.S. London. In his student days he won almost every available scholarship and prize open to the men of his school and year, and he filled all the appointments at St. Bartholomew's leading up to those which he was holding at the time of his death. He was also assistant surgeon to the Victoria Hospital for Children and to the London Truss Society. He contributed freely to medical literature, and delivered a brilliant Hunterian lecture on the operative treatment of hare-lip and cleft palate in 1915.

During the last years of his life it fell to Blakeway's lot to be one of those who, by unceasing zeal and labour, kept the flag flying at the school of his adoption. As resident assistant surgeon much surgical work came his way, and he developed the highest standard of professional efficiency. And now, in the prime of his life and the strength of his manhood, he has been taken from us. For those who knew him intimately as a good and genial friend—an ardent and untiring enthusiast—his place can never be filled. His school mourns deeply the loss of another of her brilliant younger sons.

R. M. V.

We are indebted to Professor ARTHUR KEITH for the following appreciation:

Mr. Blakeway, if his life had been spared, would have continued the line of surgeon-anatomists which has been produced in the dissecting room of St. Bartholomew's Hospital since the time of Percival Pott onwards. Realizing that there was still much to be done before our surgical measures for the remedy of congenital clefts of the palate and lip could be counted perfect, he set out to reinvestigate the anatomy and physiology of the parts

concerned. The result of that investigation appeared in the *Journal of Anatomy and Physiology* (1914, vol. 48, p. 409)—(now the *Journal of Anatomy*, the organ of British anatomists). The article is illustrated from his own dissections, which were excellently conceived and most skilfully executed; altogether that article of Mr. Blakeway's is one of the best sources of information relating to the practical anatomy of the palate. While serving as a demonstrator of anatomy in the school of his hospital, under Dr. Macphail, he joined the Anatomical Society of Great Britain and Ireland and took an active share in its business and proceedings. Only a year ago he brought before the society one of the most remarkable cases of abnormality of the heart ever recorded. It was the case of a child in whom the aortic orifice had become blocked up during development, so that the blood in the left ventricle had no means of escape. By some obscure process the lumen of the anterior interventricular artery came to open on the wall of the left ventricle; by this new communication the ventricle pumped blood into the aorta through the left coronary artery. The case illustrates an extraordinary adaptive modification, the importance of which Mr. Blakeway was quick to perceive and, fortunately, also qualified to record in a full and precise manner. His death is a loss to British anatomy as well as to British surgery.

RAPHAEL BLANCHARD,
Professor of Parasitology, Paris.

PROFESSOR RAPHAEL BLANCHARD, who died suddenly on February 10th, at the age of 62, graduated M.D. at the University of Paris in 1882, and after working as demonstrator to Charles Robin and Paul Bert became *professeur agrégé* in 1883; he was elected to the Academy of Medicine at the age of 37, and during the last seven years had been its annual secretary. He became professor of medical natural history in 1897. In addition to his life work, which he devoted to what he himself called "medical zoology," he wrote much on anthropology and the history of medicine, illustrating the latter subject by a volume entitled *Corpus Inscriptionum*. He established the *Archives de parasitologie* in 1898, and in 1902 founded the Institute of Colonial Medicine. In 1905 he published a volume entitled *Histoire naturelle et médicale des Moustiques*, which had a great success. It is to be noted that in the following year the title of his chair was changed to that of parasitology. All these activities did not exhaust his energies; he was one of the founders of the Zoological Society of France, and its secretary-general for twenty-two years; he was one of the organizers of the international congress of zoology, which adopted rules for zoological nomenclature, and in 1898 he was president of the international commission on this subject.

We are indebted to Sir PATRICK MANSON for the following tribute to Professor Blanchard's memory and achievements:

Not a few of us in this country have read with feelings of personal loss the intimation of the death of Professor Raphaël Anatole Blanchard. His record as a zoologist, and more particularly as a writer and investigator in zoology having special bearings on medicine, was a remarkable one. His book *Zoologie Médicale* was for long the great textbook on the subject, and although somewhat out of date cannot be dispensed with even at the present day. Naturally, recent developments in tropical medicine, which to all intents and purposes is tropical parasitology, brought Professor Blanchard into prominence in this as in other countries interested in that subject, and Professor Blanchard was looked upon by the profession in this country as *par excellence* the referee in any matter relating to tropical parasitology. Apart from his accomplishments in this field of science, Professor Blanchard, from his *bonhomie*, his gifts as a public speaker, his friendliness towards this country, his hospitality to our countrymen who visited Paris, and in many other ways, gained a large circle of friends in Great Britain. No one was more welcome in this country—particularly among the votaries of tropical medicine—than Professor Blanchard, and public and social gatherings were regarded as incomplete unless he was present. To listen to one of his after-dinner speeches, or to one of his disquisitions at any of our societies, was a treat.

There was no French writer who could express himself as lucidly on an obscure zoological or pathological subject

as Professor Blanchard, and there was no French orator who could carry his audience with him so easily and so enthusiastically as Professor Blanchard; the merest tyro of a French linguist could understand and follow him. His personal appearance, his gestures, his voice, and his simple logical language were a treat to witness and to hear. He made many visits to this country, and was always a welcome guest in houses and at social gatherings, and it is with feelings of great regret that we know we shall see him no more.

We regret to see the announcement of the death from influenza of Professor Chantemesse, the incumbent of the chair of hygiene in Paris, and well known as an authority on infectious diseases.

DEPUTY INSPECTOR-GENERAL GEORGE BELL MURRAY, R.N. (retired), died at Moffat on February 4th, aged 76. He was educated at Edinburgh University and in the medical school of the Edinburgh Royal College of Surgeons. He took the diplomas of L.R.C.P. and S.Edin. in 1865, and entering the navy as assistant surgeon attained the rank of fleet surgeon on September 16th, 1888, and retired with the honorary rank of D.I.G. on December 24th, 1897. He received a Greenwich Hospital pension on February 28th, 1914. He served in the Zulu war of 1879 with a battalion of Royal Marines.

Medical News.

THE annual meeting of the Royal Medical Benevolent Fund will be held at 11, Chandos Street, W.1, on Tuesday, March 11th, at 4.15 p.m.

SIR NESTOR TIRARD has been appointed consulting physician to King's College Hospital, and has been elected Emeritus Professor of Medicine by the Council of King's College, London.

WE regret to record the death, on February 24th, of Dr. William Stephenson, Emeritus Professor of Midwifery in the University of Aberdeen, in his 82nd year, and hope to publish a short biography in a subsequent issue.

THE National Birth Rate Commission has appointed a watching committee of the Ministry of Health Bill, which includes Colonel C. J. Bond, C.M.G., A.M.S., and Dr. Amand Routh as two of the representatives of the Mothers' Union.

DR. T. A. HENRY, late superintendent of the laboratories at the Imperial Institute, London, has been appointed director of the Wellcome Chemical Research Laboratories, London. Dr. F. L. Pyman, the former director of these laboratories, has accepted the professorship of technological chemistry in the Manchester Municipal College of Technology, and in the University of Manchester.

AT its meeting on February 24th, 1919, the Executive Committee of the General Medical Council considered the advisability of withdrawing the temporary alterations in the *British Pharmacopoeia* published in the *Gazettes* of July 27th, 1917, and March 29th, 1918, arising out of the scarcity during the war of sugar, glycerin, and certain oils and fats. It decided to revoke the alterations and amendments, which will be withdrawn on and after April 30th, 1919.

AT a meeting of the council of the Medical Defence Union on February 20th, when Sir John Tweedy was in the chair, resolutions relating to the notification and prevention of venereal diseases were adopted. The first urged the medical profession to resist, because it would be a breach of confidence between patient and doctor, and would lead to concealment of disease. The second advised the profession to recommend patients to adopt the very simple and easily carried out measures of prophylaxis proved to be effective in the army and navy.

WHEN the beds reserved in St. Andrew's Hospital, Dollis Hill, for military cases are no longer required by the War Office the hospital will wholly resume the work for which it was chiefly founded—namely, the gratuitous medical and surgical treatment of gentlepeople of limited means, with nursing and maintenance at as moderate a charge as possible. The hospital is well situated, and is served by the Brondesbury and Willesden Green stations of the Metropolitan Railway from Baker Street. The administrator and treasurer of the hospital is Mgr. M. E. Carton de Wiart, Archbishop's House, Westminster, and the medical committee consists of Dr. Norman Moore, Mr. Gordon Watson, C.M.G., and Dr. W. P. S. Branson.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

THE postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Attitology*, Westrand, London; telephone, 2631, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

THE address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

M.O.H., whose son has undergone amputation in the lower part of the left forearm for wound in action, asks for advice. The young man was about to enter the medical profession when the war broke out. His father asks for opinions as to the desirability of his now attempting to qualify.

LETTERS, NOTES, ETC.

THE TREATMENT OF PNEUMONIA.

DR. J. BEARD, D.Sc. (Edinburgh) writes: As it is a matter of life and death to multitudes of people and since the medical profession would appear to be quite helpless in face of this fell disease, I hope very earnestly that you will allow me to state the scientific conclusion at which some years ago I arrived concerning the proper treatment of pneumonia. For the grounds of my conclusion I refer any one interested to a paper of mine, "On the occurrence of dextro-rotatory albumins in organic nature" (*Medical Record*, March 29th, 1913; also in *Biologisches Centralblatt*, vol. 33, 1913, for the scientific grounds. A year or two before the recent war I was discussing with a medical friend certain cases of a tropical disease (malaria), which he had treated by means of injections of pancreatic ferments (Fairchild). At the time he was playing on the piano one of Brahms's pieces. "Of course," I remarked, referring to one case complicated by pneumonia (which he had not treated while the patient was suffering from the pneumonia), 'the pancreatic ferments would cure pneumonia.' He turned from the instrument and said: "We'll soon try that." This conversation took place at least five years ago, and so far as I am aware the promise has never been fulfilled. However, the death-rate from pneumonia is at present quite appalling, and it is my firm conviction that this death-rate would be considerably decreased, if not abolished, by the administration of, say, six injections of the trypsin-amylopsin powder (Fairchild). Intramuscular injections might suffice, but intravenous would be preferable. This treatment would not kill the patients, though in very many cases the pneumonia seems to have got into the way of doing so.

THE SAPPER'S LEAVE.

LIEUTENANT R. WARING TAYLOR, R.A.M.C., writes: When in York yesterday I saw the following telegrams:

"Chief of Police, Liverpool. Sapper — states mother seriously ill. Please confirm. Capt. — C.O. — unit. Reply paid."

"From Chief of Police. Sapper — confined yesterday. Both progressing favourably."

I thought that this slight touch of careless humour might be worth a corner in the *JOURNAL*. I did not hear whether he got the expected leave on the strength of his heroic effort.

THE following appointments of certifying factory surgeons are vacant: Sheffield (Bedford), Woburn Sands (Bedford), Bea-minster (Dorset), Teignmouth (Devon).

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Observations ON HYPERGLYCAEMIA AND GLYCOSURIA.*

BY

H. J. HAMBURGER, D.Sc., M.D., LL.D., F.R.S.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF GRONINGEN,
HOLLAND.

I. INTRODUCTION.

SINCE the time of Claude Bernard it has been known that sugar is never absent from the blood, and that it rarely if ever appears in the urine of normal individuals. What is the cause of this, and why does sugar appear in the urine when its presence in the blood exceeds a certain limit? These are questions which should be of interest not only to the physiologist but also and especially to the clinic.

Several possibilities that would explain the absence of sugar in the normal urine have been considered. In the first place, that, in a normal individual, glucose passes through the glomerular membrane and is farther burnt up in the kidney. This supposition seems to me to be very improbable. It is true that in the kidneys the oxidation is very powerful, but, on the other hand, if the question is viewed in the light of efficiency, it is difficult to bring oneself to agree with this conception. For is not sugar the nearest source for muscular work?

In the second place, it may be imagined that the glucose, after having made its way through the glomerular membrane into the intercapsular space, is there resorbed by the surrounding blood vessels. Neither is this suggestion acceptable, for here we would have to do with a waste of energy.

Thirdly, there may be the possibility that the sugar cannot pass through the glomerular epithelium, the reason being that it is present in the blood plasma as a colloidal compound—a compound of glucose, which is of itself not a colloid—with a substance which occurs in the blood plasma. If the quantity of glucose in the plasma has become so great that there is an insufficiency of the other substance to bind it all, free glucose will circulate with the blood plasma, and so pass through the glomerular epithelium into the urine; the result is glycosuria. Especially have Lépine and his co-workers defended this theory very ably. The compounded sugar he called *sucre virtuel*, and the free sugar *sucre actuel*.

In the meantime difficulties have been raised in connexion with the retention of the sugar in the colloidal state. Asher and Rosenfeld, and later, by an improved method, Michaelis and Rona, showed that when serum containing glucose is brought into a tube of parchment paper the sugar diffuses through it. This would not have taken place if the sugar had been in the form of a colloidal compound. From this they concluded that sugar does not occur in the blood as a colloid.

John Abel comes to the same conclusion with his so-called vividiffusion experiments. In his researches a connexion was brought about between an artery and its accompanying vein by means of a collodion tube, which he surrounded with a wider glass tube containing an isotonic salt solution. It appeared that through such a collodion membrane sugar diffused. These experiments have created a deep impression, and it appeared as if by them there had come a dead stop.

Still it seemed to us that the presence of a colloidal compound in the blood plasma had not been absolutely disproved by these experiments, because there is always the possibility that the writers erroneously took that which passed through their membranes for simple sugar, although it gave the tests for sugar. Moreover, it is not admissible to consider the permeability of collodion and parchment, as such, as being the same as that of the glomerular epithelium. Has not Bechhold taught us that some colloidal substances are let through and others not by the same membrane, and vice versa, that the same colloidal substance can pass through a particular mem-

brane and not through another? We recall the researches of W. Brown published in the *Biochemical Journal*, 9 (1915), on the different permeability of collodion membranes even to different inorganic salts. We could therefore not accept it as being definitely proved that sugar occurs in the blood in an absolutely free state. Consequently we considered it desirable to investigate systematically whether, notwithstanding the results of the diffusion experiments, the theory of a colloidal sugar compound was not after all correct.

Does the Kidney Allow the Passage of Free Glucose?

With this end in view, we decided in the first place to answer the fundamental question, which had up to this not yet been considered: whether the kidney allowed free glucose to pass through or not.

Experiments were made with the isolated kidney. To ensure that the perfusion liquid contained exclusively free sugar, Ringer's solution containing sugar was taken. If it proved that the concentration of sugar in the so-formed artificial urine was the same as that of the original liquid, the conclusion could be drawn that the kidney is permeable to glucose. After this it could be determined whether the addition of serum would cause a retention of sugar. Should this be the case it would be practically certain that there is present in the serum a substance which binds the sugar and brings it into a form that the glomerular epithelium does not allow to pass through, and eventually it could be investigated what this substance in the serum is.

With these investigations Dr. Brinkman and I have kept ourselves busy for more than two years. Through them we have come to the most unexpected results, which now and then led us on to sidepaths which, considered from a general point of view, were important in themselves.

II. SOME TECHNICAL DETAILS.

Frogs were exclusively used for the experiments. The conditions for experiments on these animals are much simpler than for warm-blooded animals; later, when circumstances will allow a normal use of gas, we shall be able to make experiments on warm-blooded animals also. Big masculine specimens of *Rana temporaria* were used. After the head has been severed with a pair of scissors the spinal marrow is destroyed by means of a long needle, and all the organs, except the kidneys, testes, and bladder, removed. A fine injection needle is then inserted in the aorta communis, and a fine glass cannula with a bulb into the ureters. This bulb serves as a receiver for the artificial urine, but is not necessary. The liquid which passes through the blood vessels must contain a large amount of oxygen. This bubbles all the while through the perfusion liquid, which stands at a level of 60 cm. above the body of the frog. In this way approximately 150 c.cm. flow through the kidneys per hour.

The "urine" is to be considered as a product of the glomeruli.

To grasp this a knowledge of the way the blood vessels run in the frog is needed. In contrast to what we find in warm-blooded animals, the arteria renalis supplies the glomeruli and to a very small extent the tubuli, while the latter get their blood supply almost wholly from the vena porta renalis, which carries off the greater part of the blood from the hindquarters. It now appears that if a liquid is made to flow through this vessel under a pressure of 60 cm. not a drop of urine is excreted. Excretion takes place only under a much higher pressure, and even then very slowly. It is therefore clear that in our experiments, where the liquid is made to flow through the arteria renalis, the urine can be derived from the glomeruli.

The fact that it is possible to separate the products of the glomeruli and tubes so well from each other makes the frog an admirable object for the study of the formation of urine.

The perfusion liquid consisted, as has been said, of Ringer's solution, to which had been added a known quantity of glucose. Great care must be bestowed upon the preparation of the solution. Every trace of carbon dioxide must be removed from the water. The flask in which it is kept must be waxed on the inside to prevent the glass from spoiling it. Care was further taken that no carbon dioxide was carried along with the liquid as it flowed from the flask. None of these precautions may be

* This article is a summary of a series of researches that have been conducted during the course of the last three years in the physiological laboratory here in co-operation with Dr. R. Brinkman, assistant in the laboratory. A considerable part of it has already been published *extenso* (see Bibliography), but in periodicals which are not easily accessible to the majority of readers of this JOURNAL. Part V, which treats of the toleration of the kidneys for sugar, and Part VI, of the behaviour of the kidneys towards some isomeric sugars, have not hitherto been published.

neglected. Lack of knowledge in this connexion has led to repeated failures of experiments. The glucose in the perfusion liquid and the product formed from it by the kidneys was determined by the excellent micro-method of Bang (1916). This method ensures an accurate determination of the amount of glucose present in 1 c.cm. of a liquid up to 0.006 per cent.

III. THE PERMEABILITY OF THE FROG'S KIDNEY TO FREE GLUCOSE.

The Significance of the Concentration of Calcium and Potassium.

As has been said before, the fundamental question, which had not yet been inquired into, had to be answered—namely, whether the glucose concentration of the urine would be the same as that of a Ringer's solution containing sugar which is passed through the kidney, and from which it is formed. The Ringer's solution had the usual composition: NaCl 0.7 per cent., NaHCO_3 0.02 per cent., KCl 0.01 per cent., CaCl_2 0.0075 per cent. Repeated experiments showed that the concentration of glucose in both liquids was absolutely the same, and therefore that the kidney was perfectly permeable to free glucose. It was now expected, in accordance with the idea entertained by Lépine about a colloidal sugar compound, that, by the addition of serum to the Ringer-glucose mixture, glucose would be retained, and that there would be less sugar present in the urine than in the original perfusion liquid. This, in fact, proved to be the case. Then there suddenly followed a surprise. It appeared that in a mixture of serum with a sixfold quantity of Ringer's solution a considerable quantity of sugar was retained, while with an eightfold quantity none.* This astonishing observation had to be explained, and led to a circumstantial investigation, which finally exhausted the whole supply of Ringer's solution. A fresh solution had to be made therefore. This brought us face to face with another surprise: for when, for safety's sake, the experiment was started from the beginning again with this new solution to which no serum had yet been added—this being reserved for a later stage—it was found, in contradiction to the results obtained previously, that now glucose was retained. We thought that very likely something was altered in the composition of the Ringer's solution—perhaps the amount of calcium. One is so apt to make a mistake between the anhydrous CaCl_2 and that still containing the water of crystallization. Thus only the amount of CaCl_2 had been altered in the Ringer's solution. Systematic investigations now proved that, when 0.0075 per cent. CaCl_2 was used, the "urine" contained 0.07 per cent. sugar; consequently that of the 0.1 per cent. glucose in the solution 0.03 per cent. was retained, while when 0.005 per cent. and 0.010 per cent. CaCl_2 was used—that is, less or more than 0.0075 per cent.—the glomerular epithelium allowed all the sugar to pass through.

It appeared consequently that the permeability was to a large extent dependent upon the concentration of CaCl_2 in the perfusion liquid.

This influence of calcium upon the permeability of cells need not surprise us when we recall the experiments made by Chiari in connexion with artificial conjunctivitis. By dropping a solution of CaCl_2 into the eye, inflammation is brought to a standstill, and after a minimum of time ceases completely. Again, the haemolysis of red blood corpuscles is prevented by calcium. Calcium has, if it be permitted to call it so, a "densifying" effect on the surface of the cell.

After these systematic investigations in connexion with the influence of calcium, similar experiments were made with potassium; only the concentration of KCl in the Ringer's solution was changed. It then appeared that a certain concentration of potassium chloride always answers to a fixed concentration of calcium chloride, and vice versa. If the one is changed then the other has to be changed accordingly. They balance each other.

This does not sound inconceivable when it is remembered that potassium has a weakening effect even on gelatin. As has been said, calcium acts astringently. Especially in the case of the frog does potassium act strikingly. In a series of experiments we saw the red blood corpuscles swell up in a solution of KCl which was isotonic with serum. This swelling is totally absent in an

isotonic solution of NaCl. The kidney also shows a considerable swelling in an isotonic KCl solution.

Radium and Uranium and Mesothorium Rays.

Let it be remarked, by the way, that, perfectly in accordance with the researches of Zwaardemaker and his co-workers in connexion with the heart, here also the radio-active uranium and radium could be substituted for potassium, and that the quantities of uranium and radium are not regulated by the atomic weights of these elements—that is, are not equivalent to each other in a strict chemical sense, but are regulated by the radio-activity of these substances, and this radio-activity is quite independent of the atomic weight. Since radium is radio-active to a great degree and potassium much less, and uranium takes an intermediate position between these two, it is not surprising that an exceptionally small quantity of radium can be substituted for potassium, while the amount of uranium again takes an intermediate place. For retaining the maximum amount of sugar—namely, 0.03 per cent.—there was necessary a solution of uranium nitrate of 0.00015 per cent., and one of radium bromide of 0.0000005 per cent.; in the presence of more or less of both salts in the Ringer's solution the retentive power for glucose was *nil*. The same was observed with regard to the concentration of KCl. If with a concentration of 0.0075 per cent. CaCl_2 that of KCl was 0.01 per cent., then the urine contained 0.03 per cent. less glucose than the perfusion liquid. If a stronger or weaker concentration than 0.01 per cent. was used, then the power of retention was wholly, or almost wholly, lacking.

A simple subjection to mesothorium rays serves the same purpose as KCl. A subjection to these rays brought about also a considerable swelling even of the kidney.

The "balance" idea makes it clear that by application of uranium the so-called uranium glycosuria can be brought about (Pollack), while on the other hand Hughes, and also West, administered with success small quantities of uranium in cases of diabetes.¹

IV. THE CONCENTRATION OF NaHCO_3 IN THE PERFUSION LIQUID.

So far experiments had taught that from the liquid considered the most suitable perfusion liquid, and containing 0.1 per cent. glucose, a "urine" containing at least 0.07 per cent. glucose was formed, and that at the most 0.03 per cent. glucose could be retained. To our surprise this retention became still smaller when the concentration of glucose in the solution was weaker. For there was reason to expect if a solution containing 0.03 per cent. sugar was passed through the kidneys the urine formed would be free from glucose. This, however, was not the case. We could not obtain a glomerular filtrate that was free from sugar.

Seeing that the normal concentration of glucose in the frog's blood is from 0.03 to 0.05 per cent. and the urine of the frog is free from sugar, we put to ourselves the question, whether the Ringer's solution hitherto used was indeed the most physiological. We endeavoured therefore to improve the solution. The influence of CaCl_2 and KCl had already been studied. The obvious course was now to proceed to study the influence of the concentration of the NaHCO_3 .

Since the time of S. Ringer it has been generally accepted that the NaHCO_3 is indispensable for perfusion. Also we had found in the experiments in question that it was necessary for the perfusion liquid. Not a trace of glucose was retained in the absence of NaHCO_3 . It is known that amongst others the function of the NaHCO_3 is to preserve a certain alkalinity of the body fluid, which would otherwise, in consequence of the constant acid formation, become acid. The sodium phosphate and sodium protein also take a part in this. In this connexion these substances are consequently called tampons, buffers, regulators or moderators. Most investigators use 0.02 per cent. NaHCO_3 , and we have done the same. It has appeared to us, however, that this concentration is too weak for perfusion through the frog's kidney, for if to the solution made up of NaCl 0.6 per cent., NaHCO_3 0.02 per cent., KCl 0.01 per cent., CaCl_2 0.0075 per cent., a little neutral red, which is known to be harmless to life, is added, then the alkaline perfusion liquid is orange-yellow, but the "urine" becomes red, proving that it has become acid.

* Compare for the explanation of this especially Section IV.

What now is the case with the reaction of the normal urine of the frog? If a little of this is pressed out of the bladder of a normal animal, it shows a weak alkaline reaction with neutral red. From this it appears that the buffer concentration of 0.02 per cent. was too weak to keep the reaction a weak alkaline one, as is the case in the normal urine of the frog.

But, what is still more important, as the urine becomes acid the retentive powers of the kidneys for sugar grow considerably weaker and finally disappear altogether.

Increased Concentration of NaHCO_3 .

The best thing, therefore, to do was to make the concentration of the NaHCO_3 gradually stronger. By degrees it was brought up to 0.09 per cent. The urine now did not become red, but remained colourless, because the neutral red was held back by the glomerular epithelium. Still it proved to be alkaline, for the addition of a little neutral red to the excreted urine brought about a faint orange colouring. Moreover, the retention of glucose was raised to more than 0.06 per cent., but for this it was necessary to increase the concentration of CaCl_2 in the perfusion liquid from 0.0075 per cent. to almost double that percentage. This can be understood, because the NaHCO_3 weakens the concentration of the Ca ions of the CaCl_2 , and it is on these that it greatly depends.

The question was now: Was the increase of the concentration of NaHCO_3 to 0.09 per cent. sufficient?

To investigate this the alkalinity of the frog's serum was determined by the titration method of Snapper with neutral red paper as indicator. It appeared that this corresponded to a NaHCO_3 solution of 0.285 per cent. Consequently, a Ringer's solution containing 0.285 per cent. instead of 0.09 per cent. NaHCO_3 was prepared. Under these conditions it appeared that often more than 0.08 per cent. glucose, sometimes 0.12 per cent., was retained. But then also the concentration of Ca had to be brought from 0.0075 per cent. to more than double that percentage.* The concentration of NaCl was lowered also because otherwise the Na concentration would have been too strong.

At this stage the question arose whether it would now be possible to obtain a sugar-free urine. According to Bang, the blood of the normal frog contains from 0.03 to 0.05 per cent. glucose. Would, therefore, the kidney be able to hold back all the glucose in a Ringer's solution which held 0.05 per cent. glucose and was rich in NaHCO_3 ? The correspondence between the results of ten experiments showed that this was indeed the case; the urine was perfectly free from sugar. All sugar was held back, even when the Ringer's solution contained 0.08 per cent. glucose.

The glomerular epithelium is thus impermeable to free sugar. It is therefore quite unnecessary to suppose the sugar to be present in the blood serum in the form of a colloidal compound in order to explain the fact that the urine of normal individuals is free from sugar (*sucre virtuel* of Lépine), a compound which as a matter of fact it has never yet been possible to isolate.

V. THE TOLERANCE OF THE KIDNEYS TO GLUCOSE.

We come now to the second question which we put ourselves at the commencement of this article—namely, Why does sugar appear in the urine when the quantity of sugar in the blood exceeds a certain limit? or, to put it differently, What relation does there exist between hyperglycaemia and glycosuria? If we desire to make this out, we have to take account of the fact that glycosuria does not depend upon the quantity of glucose in the blood as a whole, but only on that fraction of it which occurs in the plasma. One is apt to lose sight of this, and take it for granted that these two quantities are one and the same. Without further thought it is assumed that if the blood contains a per cent. glucose, the same is true for the plasma. This is true only when the sugar is distributed equally between plasma and blood corpuscles. As a general

rule this is not the case, and certainly not in man.† Should the blood corpuscles contain no sugar at all, and the sugar thus be present exclusively in the plasma then the plasma has to be considered as containing more than a per cent. glucose. The concentration of glucose in the plasma could then be determined from the relative volumes of blood corpuscles and blood plasma. Let us consider, for example, that 30 per cent. of the blood consists of blood corpuscles, the remaining 70 per cent. being plasma; then the plasma would contain $(\frac{70}{30} \times a)$ per cent. glucose.

In consideration of these facts a large number of experiments have been conducted in connexion with the distribution of sugar in the blood of man, rabbit, and frog. We shall come back to this later. Suffice it to say here that the blood corpuscles in the circulating blood of the frog are quite free from sugar,‡ and that the concentration of glucose in the plasma of the frog varies from 0.045 to 0.075 per cent., and that in the frog's blood as a whole from 0.03 to 0.05 per cent. These last figures correspond to those found by Bang.

In connexion with what has been discussed in the previous paragraph it may be expected that from a Ringer's solution containing 0.045 per cent. glucose a urine which is free from sugar will be obtained, and this proves to be the case. Is it justifiable, then, to call a perfusion solution containing 0.06 per cent. glucose hyperglycaemic? No; because, as has been said already, there are frogs whose plasma contains 0.075 per cent. glucose. With regard to this there are considerable individual differences, and we have found that the season of the year also has a great influence on the concentration of the sugar in the frog's plasma. What can be said is that a Ringer's solution containing 0.1 per cent. glucose may be considered hyperglycaemic (better, hyperglucoplasmic). It appeared, in fact, that when that concentration of sugar was passed through the kidney a little of it was allowed to pass through with the urine.

The question now arose, How great would the retentive powers of the kidney become if the concentration of the glucose was raised above 0.1 per cent.? Experiments were conducted with solutions containing glucose concentrations of 0.11, 0.12, 0.15, 0.2, 0.25, and 0.3 per cent. respectively. From the results of these experiments it appeared that the stronger the concentration of sugar in the solution the less glucose could be retained. When the perfusion liquid contained 0.3 per cent. glucose, 0.3 per cent. was present in the urine as well; there was no retention of sugar in the least—a perfect glycosuria therefore. A similar result was obtained when the concentration of glucose was 0.25 per cent. With a concentration of 0.2 per cent. a very small quantity of glucose was retained—namely, about 0.02 per cent.

In general it appeared that the more hyperglycaemic the perfusion solution was, the less sugar was retained. If a perfusion solution containing 0.07 per cent. glucose was used, then in the majority of cases all the sugar was retained. I say in the majority of cases, not always, and that can be understood—first, because for some frogs a solution containing 0.07 glucose means a fairly strong hyperglycaemia; secondly, because the toleration of the kidneys of different frogs for glycosuria is not the same. For example, a frog whose blood contains 0.06 per cent. glucose will form urine free from sugar when a solution containing 0.07 per cent. glucose is passed through it. In the case of another frog under the same conditions sugar will pass into the urine. The toleration for hyperglycaemia is greater in the case of the first frog than in that of the latter.

As was said above, a Ringer's solution containing 0.3 per cent. glucose makes the glomerular epithelium perfectly permeable to sugar. One might say that the epithelium is sickened by it. The fact that a concentration of 0.3 per cent. glucose brings about a very slow formation of urine pleads for this view. We can put to ourselves the question, Is this change which the glomerular epithelium

* This concentration corresponds with the strength of that of the normal frog serum as found by Mr. de Waard by means of a micro-method worked out by himself. The description of this method will still appear in the *Biochemische Zeitschrift*. He found that the Ca concentration varied with the seasons of the year. To this variation must be ascribed the fact that at the commencement of our investigations the results of our experiments on retention were so different.

† In speaking of the concentration of sugar in the human blood this has therefore to be considered. It is customary, as has been remarked, to take for granted that the concentration of glucose in the plasma (serum) on which it mostly depends is equal to that of the blood as a whole. The fact is that neither in the case of man nor rabbit is the sugar equally distributed between blood corpuscles and blood serum. This has been proved in our laboratory by numerous experiments made by different methods, and also from calculations and experiments by others.

‡ On deffibrination sugar passes from the blood serum to the blood corpuscles (Brinkman).

undergoes of a lasting nature? It appears that when afterwards a Ringer's solution containing more or less the physiological quantity—that is, 0.06 per cent. of glucose—is passed through the kidney, the urine contains sugar for several hours after, and that to the extent of 0.06 per cent. Whether the glomerular epithelium recovers again later we could not make out by our experiments.

We must admit that before these experiments we had a different conception of the origin of glycosuria from hyperglycaemia. We had thought that when the perfusion liquid contained too much glucose the glomerular epithelium would remain impermeable to the sugar, but that the surplus would be excreted vicariously by the tubes. In this case the product from the glomerulus would be quite or nearly free from sugar. From the experiments, however, it appeared that this is not the case, and that, as has been said, in the case of strong hyperglycaemia, the glomerular epithelium allows even all the sugar of the perfusion liquid to pass through.

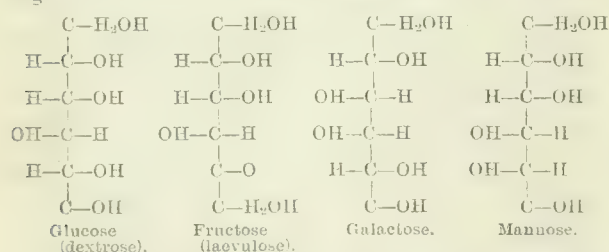
VI. THE BEHAVIOUR OF THE KIDNEYS TOWARDS SOME ISOMERIC SUGARS.

As was explained in part IV, under normal conditions glucose as such is retained by the glomerular membrane. If now we consider the fact that salts such as NaCl, which, like glucose, are also crystalline, pass through it, then arises the question, To what must this peculiar behaviour of glucose be ascribed?

In the first place we might imagine that the molecule of the monosaccharide glucose ($C_6H_{12}O_6$) is so large that that would hinder its passage. We thought that if this notion was correct, then disaccharides, like sucrose, maltose, and lactose, which have a still larger molecule ($C_{12}H_{22}O_{11}$), would certainly be retained as well. The experiments proved, however, that the glomerular epithelium is permeable to the three above-mentioned disaccharides to a great degree. It is even perfectly permeable to lactose; in fact, even raffinose ($C_{18}H_{32}O_{16}$) is allowed to pass through it completely.

If, then, the retention of glucose could not be ascribed to the size of its molecule, there was the probability that a characteristic structure or configuration of the glucose molecule had something to do with it. For this reason some sugars which were either isomeric or stereo-isomeric with glucose were experimented with.

For convenience I give the formulae of a few of these sugars:



And what proved to be the case? That the fructose was allowed to pass through completely, likewise the mannose, while a small quantity of the galactose was retained. The reader will not fail to notice how slight is the difference in the configurations of these four sugars, especially between the glucose and its stereo-isomeres galactose and mannose.

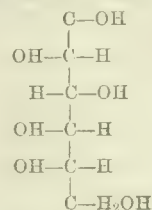
Glucose therefore occupies a very peculiar place amongst the isomeric monosaccharides with regard to the glomerular membrane; or, to express it differently, the glomerular epithelium has a power of separating glucose from the monosaccharides in a way which suggests the relation of sugars to ferments. It is an established fact that a particular ferment can break up a particular sugar and others not. Sugar and ferment fit each other, as Emil Fischer expressed it, like a lock and key. If we apply this representation to our case, we would say that the key (glucose) does not fit the lock (glomerular membrane) and that the other sugars which have so far been experimented with do fit.

It is deserving of attention that these investigations form a new illustration for the law of stereo-isomerism, but here it is not of a chemical, but of a physiological nature—lying, namely, in the domain of permeability.

Recently we have endeavoured to discover which group of the glucose molecule it is that imparts to this substance the peculiarity that causes it to be retained by the glomerular epithelium. With this end in view we have examined several other stereo-isomeric sugars, amongst others several pentoses.

At present we have a number of facts at our disposal, but we have not yet been able to make out to what glucose owes its "efficiency" of being retained by the glomerular epithelium. This property may well be called efficiency, for is it not an established fact that glucose is the most immediate source of muscular energy? It would be exceedingly inefficient if under normal conditions the sugar passed from the blood into the urine.

Be this as it may, we are certainly confronted here by a remarkable phenomenon when we consider that the laevo-rotatory glucose of the formula:



passes completely through the glomerular membrane. I will not dwell further upon these investigations, but make mention of only one fact, which is not without importance from a clinical point of view—namely, that when dextrose and laevulose are dissolved in the perfusion liquid, then the dextrose is again retained by the glomerular membrane, but the laevulose passes through. From this it is evident that the power of retention for dextrose is quantitatively not altered. The two sugars are simply separated from each other as through a filter; what is true for a mixture of dextrose and laevulose also applies to a mixture of glucose and lactose. The lactose passes completely into the urine and the glucose is retained by the glomerular epithelium to the same extent as when there is no lactose present.

VII. SOME FURTHER REMARKS OF A THEORETICAL-PRACTICAL NATURE.

In the first place these are concerned with potassium. From the experiments made with weak concentrations of $NaHCO_3$ —that is, with 0.02 per cent. (cf. parts II and III)—it appeared (I have not mentioned this yet) that the K could be omitted without the solution being affected for the worse. Both in the presence and absence of K, 0.03 per cent. glucose was retained. If, however, K was added, the quantity used had to lie within fixed limits. There had to be a definite relation between Ca and K. The question now was: Could the potassium also be left out of this new physiological perfusion liquid, in which the concentration of $NaHCO_3$ was 0.285 per cent. (part IV), and if so, would it then be necessary, if K was added to this solution, to balance it with Ca? It appeared that in this case K can be omitted, but that when it is added, the quantity is not of great importance to the retentive power. The accurate balancing between Ca and K is no longer necessary.

Several thoughts, not without importance from a clinical point of view, now urge themselves forward. In the first place one is disposed to think about the advanced stage of diabetes—the coma diabeticum. The patient suffers from acidosis. It is known that chiefly β -oxybutyric acid and aceto-acetic acid are formed, and these pass into the urine in the form of salts formed with the alkalis which they extract from the blood. It appears consequently that the alkalinity and also the concentration of HCO_3 ions in the blood is considerably diminished; or, to express it in a simple way, the concentration of $NaHCO_3$ in the blood plasma has become smaller, and consequently the human kidney is in the same condition as the frog's kidney through which a liquid that contains too little $NaHCO_3$ streams.

It will be remembered that the concentration of K does not oscillate between wide margins, as was the case where the concentration of $NaHCO_3$ in the perfusion liquid was normal (0.285 per cent.). It is known that in cases of diabetes the quantity of K in the urine is greater than with normal persons. This loss of K experienced by the

blood plasma must be restored. We now ask ourselves the question whether it would not be efficient to give such patients besides the customary NaHCO_3 some KHCO_3 also.

That the administering of K serves a good purpose is supported by the experience in connexion with the well-known oatmeal cure. According to the analysis of Bunge 1 kg. dried oatmeal contains 5 to 6 grams K_2O against 0.1 to 0.4 per cent. Na_2O . One thus succeeds in bringing large quantities of K into the body. This is also effected with the potato cure of Mossé. Dried potatoes contain per kg. no less than 20 to 28 grams K_2O against 0.3 to 0.6 gram Na_2O . Finally the following fact claims our attention: The ash of the normal pancreatic gland consists to a large extent of potassium phosphate; 100 grams dry ash contain 2.8 grams K_2O and 0.04 gram CaO . In the pancreas of a diabetic person, however, there is found to be present in 100 grams dry ash only 1.9 grams K_2O and 0.17 gram CaO . Here again K and Ca vary with respect to each other (Stoklasa).

From all this it may be gathered that the relation between K and Ca plays a part in glycosuria.

I could venture the following hypothesis, which, however, still requires extensive experimental control: As long as the concentration of NaHCO_3 in the blood plasma is normal, even a moderate hyperglycaemia will cause no glycosuria. If, however, the NaHCO_3 concentration is diminished, the glomerular epithelium has become sensitive to the proportions of Ca and K in the blood plasma. A deficiency in the K must be met artificially, but the excretion of sugar can be prevented also to a large extent by increasing the concentration of NaHCO_3 .

Be it finally said that Dr. Brinkman has made another investigation by the method described in connexion with the excretion of sugar in phloridzin diabetes. There is an extensive amount of literature on this form, and it is certain that phloridzin sets the normal kidney to excrete sugar even when the quantity of sugar in the blood is quite normal, and there is thus no question of hyperglycaemia. It is therefore renal diabetes. If this does not come about in patients after injection with phloridzin, then the tubular epithelium is looked upon as subnormal, for the normal tubular epithelium is regarded as possessing the power of absorbing the phloridzin and analysing it into glucose, which is excreted with the urine, and phloretin, which returns into the circulation, there to combine with more glucose forming new phloridzin. If the tubular epithelium is unable to analyse the phloridzin, the validity of the kidney leaves much to be desired.

Brinkman found that after the injection with phloridzin also the glomerular epithelium, in the case of the frog at least, takes an important part in the excretion of sugar.

If to the sugar-containing optimal perfusion liquid only 0.0004 per cent. phloridzin is added, then no trace of sugar is retained by the glomerular membrane. It is made perfectly permeable by it (the vena porta renalis was tied). In making out how much store can be set by the phloridzin experiment for determining the state of validity of the tubular epithelium one has thus henceforth to remember that phloridzin makes the glomerular epithelium (at least that of the frog) to a great degree permeable to sugar.

SUMMARY AND CONCLUSION.

I. The glomerular membrane has the power of retaining free glucose.

II. This power is governed by the influence of the chemical composition of the perfusion liquid upon the glomerular epithelium. If this be the usual Ringer's solution composed of NaCl 0.6 per cent., CaCl_2 0.0075 per cent., KCl 0.01 per cent., and NaHCO_3 0.02 per cent., and to it has been added 0.1 per cent. glucose, then a urine containing 0.07 per cent. glucose is excreted, 0.03 per cent. thus being retained. In the perfusion liquid the quantities of K and Ca with respect to each other can be altered in such a way that the retentive power need not be influenced by it. In such a case they balance each other. Instead of using K this balancing can also be effected by means of radium and uranium, that with doses which are determined not by equivalence in a chemical sense, but by the degree of radio-activity. The subsection of the kidney to mesothorium rays can be substituted for K.

III. If the concentration of NaHCO_3 in the Ringer's

solution is raised from 0.02 per cent. to 0.285 per cent., the quantity which is present in the frog's serum, then the kidney can retain from the sugar-holding perfusion liquid more than 0.03 per cent. The artificial "urine" becomes totally free from sugar.

IV. These results deserve attention both from a theoretical-clinical and from a general biological point of view. From a theoretical-clinical, because the fact that the urine of normal individuals is free from sugar is at present brought down to a phenomenon of very nicely regulated permeability, and the conception of the colloidal sugar compound (*sucra virtuel* of Lépine), which, as a matter of fact, has never yet been isolated, is needless. The results are not without importance from a general point of view, because one is here confronted by a new form of permeability—one, namely, where cells under physiological conditions, although quite permeable to salts, are yet impermeable to glucose, which like these is also a crystalline—a species of permeability not hitherto observed and *in casu* very efficient.

V. The question arises to what the crystalline glucose is indebted for this quality, which is so efficient for the body. There would be an inclination to seek it in the size of the molecule ($\text{C}_6\text{H}_{12}\text{O}_6$), but that lactose which possesses a still larger molecule ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$), and even raffinose ($\text{C}_{18}\text{H}_{32}\text{O}_{16}$), pass through the glomerular membrane. Nothing, then, remains but to consider the structure or configuration of the glucose molecule as being responsible for it. It has, indeed, appeared that the isomeric fructose and the stereo-isomeric mannose and galactose, and even the laevo-rotatory glucose (L-glucose) pass through the glomerular membrane. Thus the living glomerular membrane is able to distinguish normal glucose from other sugars. From a theoretical point of view these results are also interesting, because in them may be seen a physiological illustration of the doctrine of stereo-isomerism.

VI. From the point of view of diagnosis especially it must be remarked that when, besides glucose (dextrose), fructose (laevulose) occurs in the perfusion liquid, only the laevulose is let through. The two sugars are separated as by a filter. What is true for a mixture of laevulose and dextrose applies also to a mixture of dextrose and lactose. The lactose passes completely into the urine, the glucose is retained by the glomerular epithelium as though there was no lactose present.

VII. Regarding the relation between glycosuria and hyperglycaemia the experiments have made clear the following: If there is a hyperglycaemia of a certain degree then the glomerular epithelium sickens and allows glucose to pass through. The higher the degree of hyperglycaemia the stronger the permeability becomes. The toleration of the glomerular membrane for the sugar concentrations lying above the normal appears to be different for different individuals.

VIII. The investigations throw light on the customary therapeutic measures taken in cases of advanced diabetes and the mechanism of phloridzin diabetes (part VII).

To forestall any misunderstanding let attention be called to the fact that it is by no means my purpose to do away with the significance of the tubular epithelium. Thanks to the peculiar arrangement of blood vessels in the kidney of the frog, the investigations in question could only bear exclusively upon the behaviour of the glomerular epithelium.

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THE Spanish Government has under consideration a bill presented in the Senate providing that disability contracted in the exercise of professional work shall be regarded as an occupational accident and for the granting of pensions to widows and orphans of men who have died in consequence of inoculations and contagious diseases. The amount specified is 2,000 pesetas (£80) in towns of 200,000 or more inhabitants and 1,000 pesetas (£40) in towns of less than 10,000 inhabitants, with intermediate amounts.

NOTE ON "INFLUENZA" AND PNEUMONIA: FROM A FIELD HOSPITAL.

BY

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THE New Zealand Stationary Hospital acted as the infectious disease hospital for the Second Army, British Expeditionary Force, for the seven months May to November, 1918. Bacteriological examinations were made in 116 cases of "influenza" and pneumonia and in 67 healthy controls as follows: 17 "influenza," 17 healthy controls, and 10 pneumonia in the June epidemic, and 39 "influenza," 50 healthy controls, and 50 pneumonia in November. During the later period bacterial vaccines were used for prophylaxis and treatment.

Bacteriological Examination of Influenza and Pneumonia Cases.

In the "influenza" cases 17 blood cultures taken during the first few hours of the illness having proved negative and over fifty blood smears having shown nothing definitely abnormal they were discontinued, and post-nasal swabs were taken as soon as possible after admission. Sputum was examined in cases in which specimens could be obtained. In the pneumonia cases the sputum was always examined, post-nasal swabs only occasionally, as the patients were usually too ill to be troubled, and blood cultures and agglutination tests were also carried out.

Post-mortem swabs were taken from the heart, lungs, and other organs. All specimens were examined by direct smears and by culturing on tryptic agar plates of suitable reaction containing 5 per cent. of human blood, and the same medium and technique were used during both epidemics.

CULTURES.

"Influenza" Cases.

Organisms Isolated from Blood, Sputum, or Post-nasal Swab.	June Epidemic.		November Epidemic.	
	17 Cases.	17 Healthy Controls.	39 Cases.	50 Controls.
<i>B. influenzae</i> ...	9	3	32	13
<i>Pneumococcus</i> ...	6	5	32	7
<i>Streptococcus</i> ...	9	9	26	27
<i>M. catarrhalis</i> ...	13	14	25	40

Pneumonia Cases.

Organisms Isolated from Blood, Sputum, or Post-nasal Swab.	June Epidemic. (10 Cases.)	November Epidemic. (50 Cases.)
<i>B. influenzae</i> ...	10	37
<i>Pneumococcus</i> ...	10	50
<i>Streptococcus</i> ...	9	53
<i>M. catarrhalis</i> ...	2	27

The records showing the details of the findings of these organisms from sputa, post-nasal swabs, and necropsies, both from direct smears and cultures, in 183 cases and totalling over 1,600 results, would occupy too much space for reproduction here.

The influenza bacilli were indistinguishable in direct smears or cultures from other small delicate-growing Gram-negative bacilli such as the Koch-Weeks bacillus, and they frequently showed involution forms in culture.

Agglutination tests of the patients' serums with the influenza bacilli isolated from them showed little agglutinating power either in the early or late stages of the disease, the highest titre being 1 in 20; these tests, therefore, were not persevered with.

The results are not illuminating. The influenza bacillus was usually, though not always, to be found in the cases

of "influenza" and pneumonia, but it was also frequently present in the healthy controls. It was found in a smaller percentage of cases and controls during the June epidemic than during that of November.

Streptococci were very frequently found in the post-nasal swabs and sputa, but were noticeably predominant in the cases of bronchopneumonia.

The *pneumococcus* was found in every case of pneumonia and in every specimen post mortem, and was the constant infecting organism in lobar pneumonia; it was also found in the spinal fluid of seven meningitis cases admitted as cerebro-spinal fever, none of whom developed pneumonia, but only one recovered. All the pneumococci isolated from the blood or lungs of our pneumonia cases that I have been able to type with Rockefeller serums belonged to Types I and II, some of those isolated from the sputum were Types I and II; others were inagglutinable with those serums and were classed as of Group IV.

Complications.

1. *Double Pneumonia*.—An exceptional tendency to spread to the opposite base was noted.

2. *General Peritonitis* occurred in one case, the infection spreading downwards from the diaphragm.

3. *Terminal Empyema* occurred in one case.

4. *Enterica*.—In one instance only was there any such complication, due to paratyphoid B. No ulceration of the ileum or large bowel was found at any of the autopsies.

5. *Epistaxis*.—This was a marked feature of the onset of the pneumonia, and in two cases bowel haemorrhage occurred.

Post-mortem Findings in a Series of Twenty-four Cases.

In the majority of cases the post-mortem examination showed a lobar pneumonia at one or both bases with coincident congestion of the upper lobes. Apical pneumonias were uncommon.

Morbid Anatomy of a Typical Case.

Red hepatization in a lower lobe, with patches of grey hepatization forming in the old-standing cases. A certain amount of serous effusion. The upper lobes in the first stage (congestion); in about half the autopsies pus was found in the smaller bronchioles. The heart dilated, but valves normal, with no endocarditis present. In one case only was a lobular pneumonia found.

The striking feature of the cases was the intense toxic condition of the patients, out of all proportion to the simple lobar pneumonias revealed at autopsy.

Vaccine Treatment of "Influenza" and Pneumonia Cases.

Nature of Vaccine Used.—The vaccine consisted of *Pneumococcus* and *B. influenzae* prepared from organisms isolated from the blood or lungs of the most toxic cases, six suitable strains of each being used. In the case of pneumococcus two strains of each of three types—mixed, sensitized, and unsensitized—the types being I, II, and an inagglutinable type of Group IV. In certain cases of bronchopneumonia in which a *Streptococcus haemolyticus* was present, that organism was included in the vaccine in the same strength as the pneumococcus.

Dosage.—The first dose used in each case of "influenza" was 75 million pneumococci, consisting of 25 million of each of three types of *Pneumococcus*, and 100 million *B. influenzae*, and in the case of pneumonia 25 million of the three types of *Pneumococcus* and 100 million *B. influenzae*, and this was repeated or decreased in the next dose according to its effect in the particular case, and increased in later doses if necessary. These initial doses were maintained throughout in order to preserve some continuity of dosage, it being considered better to have results from 50 or 100 cases treated with the same initial doses than to dodge about from one dose to another.

Intervals.—The temperature, pulse, respiration, and condition of lungs and heart were considered in deciding the intervals. No untoward results could be attributed to the dosage except in two cases of pneumonia in which rigors occurred during the night following.

Vaccine Results.

Total "influenza" cases during November ...	327
Cases with respiratory complications...	132
Cases with pneumonia ...	40
Deaths ...	22

	Total Cases.	Developed Pneumonia. No. of Cases	Deaths.	Mortality per Cent. of Total Cases.
I. Inoculated against pneumonia immediately after onset of "influenza"	10	0	0	0
Not inoculated immediately after onset	317	50	27=54%	8.5
II. Inoculated immediately after onset of respiratory complications (but before pneumonia)	56	10	5=50%	9
Not inoculated immediately after onset of respiratory complications	76	40	22=55%	29
III. Inoculated only after pneumonia supervened	29	29	15=52%	52
Not inoculated (pneumonia)	11	11	7=63%	63

As far as can be judged from the small number of cases, the prevention of pneumonia by vaccine inoculations was successful, whether carried out before or immediately after the onset of "influenza," though it must be remembered that we were dealing with presumably sound and healthy individuals (apart from the attacks of "influenza"), and that such uniformly satisfactory results might not be obtained with the average man and woman. It is noticeable that the mortality rate increased in proportion to the seriousness of the condition when the vaccine was first administered, that the earlier it was given the better the result, but that in the cases in which pneumonia occurred the mortality was about 50 to 60 per cent., whether vaccine was, or had been, administered or withheld. It is quite possible that better results might have been obtained under conditions in which more attention could have been paid to individual cases than is possible in a crowded field hospital, or even with a different vaccine dosage or interval; but, as far as pneumonia is concerned, our results pointed to the success of vaccine in prevention, but to a very doubtful benefit in treatment once pneumonia was established. Unfortunately, no antipneumococcus serum was available for treatment.

One cannot help drawing the conclusion that the success of this treatment depends upon the early administration of the vaccine, and that the best results may only be expected when every "influenza" case is inoculated immediately, without waiting for the more serious secondary infections to declare themselves.

Prophylactic Inoculation.

During the June epidemic so many cases of "influenza" occurred in the staff that we had thirty-five orderlies in hospital at one time. Arrangements were immediately made to inoculate those who had not contracted the disease; the inoculations, however, were not compulsory.

Although the total staff numbered 250 not another case occurred in the unit from that time. This appears at first to be evidence of effective inoculation, but the records show that only six individuals volunteered for the injection!

At the end of October the epidemic had acquired so serious a nature that the whole of the staff was inoculated. Nine officers, fourteen sisters, and ninety-one other ranks were at once inoculated with the following vaccine:

N.Z.E.F. Mixed Catarrhal Vaccine Prepared by Captain Love and Dr. Eyre.

	Dose 1.	Dose 2.
Pneumococcus ...	50	100 million
Streptococcus...	10	50 "
B. influenzae ...	10	30 "
Staphylococcus aureus	200	500 "
M. catarrhalis ...	25	75 "
B. pneumoniae ...	50	100 "
B. septus ...	50	100 "

New Vaccine.

Meanwhile steps had been taken to prepare what was considered a more suitable vaccine.

In order that as far as possible the vaccine should provide adequate protection against the prevalent infection of the particular place and period, it was decided:

1. That the essential constituents were the *Pneumococcus*, *Streptococcus*, and *B. influenzae*.

2. That it was of fundamental importance that the pneumococci should include Types I and II, and, in the light of the experience of Major Borel of the French army, that it would be wise to add other types not included in those worked out by the Rockefeller Institute, but isolated from our fatal cases.

3. That several virulent strains of *B. influenzae* and *Streptococcus haemolyticus* isolated from our fatal cases should be included.

4. That it should be unsensitized and unheated.

5. That primary or secondary subcultures only should be used.

The vaccine was therefore prepared accordingly.

Dosage.

Fearing to use the massive dosage of Lister in case of getting very severe reaction in a staff that could not be excused duty after inoculation, and not wishing to use what was thought to be the small dosage of the N.Z.E.F. vaccine, the following scheme of dosage was drawn up and carried out:

	Dose 1.	Dose 2.
B. influenzae (12 strains) ...	500	1,000 million
Pneumococcus (3 types) ...	250	500 "
Streptococcus haemolyticus (12 strains) ...	250	500 "

Interval seven to ten days.

The total dosage is admittedly not as high as it might have been: it would have been safer to have given a third dose, but there are limits to what can be done in the way of inoculation in a busy hospital with a hard worked staff, and one must admit that all hands were "fed up" with the innumerable injections received during the last four years.

One officer, 23 sisters, and 109 other ranks were inoculated with this vaccine. There were numerous cases of moderate local reactions and malaise, but none were sufficiently severe to cause anxiety or admission to hospital, in fact no one "reported sick."

That relic of opsonic index days, the "negative phase," appears to be rather a bogey as far as prophylactic inoculations is concerned. The experience of the last four years indicates that when disease appears shortly after prophylactic inoculation it is more probably due to inappropriate vaccine or inadequate dosage than to infection during the "negative phase."

Of the 114 cases inoculated with the "N.Z.E.F. mixed catarrhal vaccine" supplied from London there were a few admitted to hospital with "influenza" or "cold," but none were seriously ill and none developed pneumonia. Of the 133 cases inoculated with the vaccine prepared in the hospital laboratory there were no cases of either "influenza," "cold," or pneumonia. Considering that during the epidemic the hospital received hundreds of cases of "influenza" or pneumonia, it seems wonderful that the staff should have escaped. The inoculations certainly appear to have afforded protection, but the numbers are small and an important factor no doubt was the excellence of the supervision, the masking of attendants, and the high standard of sanitation and hygiene; for not only did no nurse or orderly in the pneumonia ward develop pneumonia, but in the whole of the seven months that the hospital was acting as the infectious disease hospital for the Second Army not a single attendant in the Infectious Block contracted any infectious disease.

One of the difficulties experienced in recording observations during the recent epidemic is due to the nomenclature of the condition, as the name "influenza" has so long been loosely used to describe any of the various respiratory catarrhs due to *B. influenzae*, *Pneumococcus*, *M. catarrhalis*, *B. septus*, *Streptococcus*, etc. Whatever be the initial causative organism, there is no doubt that the infection quickly becomes a mixed one and that the appearance of secondary infection is concomitant with the graver symptoms. It is to be hoped that the etiology of the condition will soon be made clear, that some specific

name may be determined upon to distinguish the disease in its uncomplicated form, and so put an end to the present confusion of identities.

I have to thank the late Colonel C. H. Begg, C.M.G., D.M.S., N.Z.E.F., and Lieut.-Colonel C. H. Newton, D.S.O., O.C. the New Zealand Stationary Hospital, for permission to publish these notes.

FEBRILE ACIDOSIS IN SCARLET FEVER IN CHILDREN.

BY

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ACETONURIA has been found by Harris in 84.8 per cent. of cases of scarlet fever in children.¹ I have examined daily the urine of seven consecutive cases with moderate attacks, estimating the acidity, the proportion of urea and ammonia-amido nitrogen, and testing for acetone and diacetic acid, with the following results:

1. Acidosis lasting from three to twelve days, reaching its maximum on the third to fifth day of disease.
2. Acetone and diacetic acid not always, though generally, present.
3. Urine not alkaline during administration of sodium bicarbonate gr. 10 to gr. 15 every four hours.
4. One return of acetone, increase in ammonia nitrogen from 1.7 per cent. to 6.3 per cent., and rise in acidity from 2 per cent. to 68 per cent. N/10 acid, after halving the dose of soda.
5. Nephritis developed later in the two patients who showed the most severe acidosis.

Clinically none of the cases suggested diphtheria, but routine nose and throat cultures, to discover carriers, gave two positive results from the nose. I consider the acidosis in these cases was due to scarlet fever, although it has been shown to occur in diphtheria.²

Finding acidosis at the start of my examinations I at once gave sodium bicarbonate. As this did good in moderate and severe cases I have made it routine for all, with satisfactory results. I ask that it shall be given for a week to ten days to all children who have scarlet fever, the dose being regulated by the reaction of the urine. Further, I am so convinced that acidosis is present in every other acute febrile complaint of children that I plead for the giving of soda to them pending the proof of this contention.

Methods.

NH₃+NH₂ nitrogen = formalin (BRITISH MEDICAL JOURNAL, March 25th, 1909).

Urea = hypobromite.

Acetone = sodii nitroprusside } Depth of colour.

Diacetic acid = ferri perchlor. }

Acidity = N/10 NaOH with phenolphthalein indicator.

(Neutral potassium oxalate used if urine was high coloured.)

The two following cases had nephritis; one showed it associated with acidosis on the twelfth day, starvation doing harm; both suggest the possibility that acidosis aids in determining the complication, and that early administration of soda may reduce its incidence.

CASE I.

A boy, aged 7, was admitted on the fourth day of the disease, pale and listless; pulse 120, weak; temperature, 99.2°. His condition caused some anxiety. The culture from the throat was negative, that from the nose yielded the Hoffman bacillus.

Urine: Ammonia nitrogen rose to 13.9 per cent. on the fifth day, and fell gradually to 4 per cent. on the eleventh and twelfth days. Acetone and diacetic acid were never found. Nephritis developed on the twenty-fourth day and lasted until the thirty-fourth day. The urine on the twenty-fifth day contained a trace of albumin, and hyaline and granular casts; ammonia nitrogen 1.8 per cent.; no acetone or diacetic acid.

CASE II.

A girl, aged 6, was admitted on the tenth day of disease, peevish. Temperature 97.8°, pulse 116. She was given carbohydrate diet. On the eleventh day there was no albumin, but a trace was present on the twelfth day; the temperature was then 99°, pulse 120; she had vomited. By routine treatment she was given liquor ammonii acetatis and barley water only. On the thirteenth day the child was worse; pulse 130 to 140, irregular, weaker; she was still vomiting. The urine contained a trace of albumin, and hyaline and granular casts. Acetone and diacetic acid were present. Acidity = 100 per cent. N/10 acid; ammonia nitrogen 6 per cent.

Treatment consisted of barley water, milk 1½ pints with half an ounce of sugar, and sodium bicarbonate gr. 15 every three hours. On the fourteenth day her condition was improved. Milk 3 pints with half an ounce of sugar, and sodium bicarbonate gr. 15 every four hours. She was still better on the fifteenth day: ammonia nitrogen 4.8 per cent.; acidity = 72 per cent. N/10 acid; acetone was present. Carbohydrate diet; soda continued. On the sixteenth day there was no albumin; ammonia nitrogen 2.4 per cent.; acidity = 40 per cent. N/10 acid; there was a trace of acetone. On the seventeenth day she was much improved and was taking food well. Ammonia nitrogen 2 per cent.; acidity = 8 per cent. N/10 acid; no acetone. Soda reduced to a dose every eight hours. She made an uninterrupted recovery.

I have had only two cases in adults (males aged 17 and 23). Both had increased ammonia-amido nitrogen, the younger giving 11.3 per cent. on the fourth day of illness, with acidity = 125 per cent. N/10 acid. Neither had acetone or diacetic acid. They benefited by soda, and I consider all moderate or severe adult cases should be given it.

REFERENCES.

¹ Harris, *Lancet*, 1910, vol. i, p. 1346. ² Peters, *BRITISH MEDICAL JOURNAL*, 1918, vol. i, p. 10.

NATIONAL MEDICAL TREATMENT.

BY

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In view of the fact that health matters, including the treatment of sick persons, occupy a prominent position in the social reforms contemplated by the new Government, it is desirable that the medical profession should either have some definite views as to what future action will prove acceptable to it, or be prepared to submit a scheme, approved by the majority, for the consideration of the general public.

The views of the profession, and those of the general public as represented by the law makers, on a subject which is peculiarly technical in character, and which is hampered to a certain extent by tradition, are likely to be divergent, and the best opportunities for reconciliation are not afforded when a scheme, which represents in the main only the views of the latter section, has been prepared and submitted as part of a settled policy.

The subject is of so involved and intricate a character that it would be impossible for any single individual outside an interested Government department, to which all sources of information are available, to prepare a detailed scheme which would meet all difficulties, or which could be regarded as more than a basis for discussion.

Up to the present the chief efforts have been directed towards the elaboration of schemes which have advocated what is known as a whole time state medical service. To the generality of the profession such a scheme is not acceptable, but the difficulties associated with a part-time service have been such as have apparently rendered it difficult for those who favour such a service to formulate general principles which could be developed into a piece of efficient administrative machinery.

Alternatives.

If alterations or additions to the present method of state treatment—and the medical benefit under the Insurance Act may reasonably be included in such a term—are decided upon, one of three courses will probably be followed, namely: (a) Additional powers and responsibilities may be tacked on to the present panel system, or (b) a whole-time service may be created, or (c) a part-time service may be established based on experience gained in panel work.

The limitation of medical benefit to insured persons alone cannot continue. Another service has been added to the many competing classes of state treatment. The Insurance Act accepts no responsibility for the treatment of persons with physical defects at ages prior to the insurance age, but this would probably be met by inclusion of dependants. If such were included the intricate

problem of contribution or non-contribution would arise, not to mention the controversy as to whether they should receive the non-medical benefits.

The treatment of the uninsured and those requiring permanent medical treatment and maintenance, many of whom are now the responsibility of the Poor Law authority, would still remain a problem for solution. If insured persons and dependants were included in a state scheme of medical treatment, whether on a contributory basis or otherwise, the numbers remaining outside such a scheme would, comparatively speaking, be few. A reasonable estimate would be less than one-third and more than one-fourth of the total population. These various administrative difficulties would be of such magnitude that it would be necessary to consider whether it would not be sound policy to make the state service available for every member of the community who desired to use it. The question of contribution is likewise an important principle, and we think we might safely prophesy that present policy would be against charging weekly contributions to cover the cost of the medical treatment of dependants. The objections are obvious: only insured persons and their dependants would be provided with state treatment, and even for these there would be differential terms.

Universal Medical Treatment.

As the prosperity of the state, moreover, depends upon the health of its citizens, it seems reasonable to expect the state to make the provision necessary for maintaining health by arranging that medical treatment shall be available for everybody, and that the costs of such service shall be a central charge. In either direct or indirect manner such central expenditure will be made up in varying proportions by the different members of the community according to their taxable value—the state will provide the machinery, the community will pay the costs, and both ought to profit.

The treatment now provided under the Insurance Acts is on this basis, since the contribution of the individual insured person is more than absorbed by benefits other than medical benefit, the costs of the latter being furnished by employers' contribution and state subsidies. The direct weekly contribution of a man is 4d. and of a woman 3d., and an allocation¹ of these amounts is as follows:

	Men.	Women.
Sickness benefit	2.39d.	1.74d.
Disablement	0.78d.	0.81d.
Administration (say)	0.83d.	0.45d.
Total	4.00d.	3.00d.

No balance is left out of the insured's direct contribution for sanatorium benefit, maternity benefit, medical benefit, or the costs of administration of these benefits. There is therefore no new principle involved in the suggestion that medical treatment should be a state charge without direct contribution, whilst the extension of the privilege to every member of the community seems desirable on grounds of general policy.

If such a principle be accepted it follows that the best medical treatment should be available for every individual unit of the community, to effect which all medical services should be co-ordinated. The question of control then arises, and we suggest that it should devolve upon the new Ministry of Health. This central authority might with advantage delegate the executive powers to local bodies created *ad hoc*, or as additions to the powers of those already existing. There appears to be no reason why the same local body which administers sickness, invalidity, and unemployment benefit should administer and have executive powers over the organization providing medical treatment.

Administration.

The administration of benefits paid for should be undertaken by the contributors or by their elected representatives. It is not likely that sickness and invalidity benefits will be extended to every member of the community, and the existing insurance organization, or some modification of it, might well continue to administer these. Medical benefit, if extended as suggested, would be paid for by the whole community, and therefore the administration should devolve upon the elected representatives of the community, aided by nominees of the employees—that is, the medical profession, elected by the profession, together with representatives of the insured persons. Such a proposal involves

the transference of the present medical provisions from the Insurance Commission to the control of the Ministry of Health, making local administration the responsibility of local authorities, and leaving the other functions of the Insurance Act to be still controlled by the Insurance Commissioners. As the Insurance Commission will probably also form part of the Ministry of Health, there would be no difficulty in arranging an organization which would co-ordinate medical work with sickness and invalidity benefits. Benefits would be valid on the basis of medical certificates, and the method of issuing the certificates would be settled by regulations issued by the Ministry of Health, which would have controlling power over each section.

The unit area for such a scheme requires careful consideration. It should be large enough to have the backing of a large rateable value to make the financial proposals acceptable, and to balance inequalities of social status. We suggest that in London the administrative county should represent the unit area to control, and in the provinces, the councils of counties and county boroughs.

When the Education Act was launched, fear was expressed lest private schools would go under in the resulting competition, but this has not happened. Similarly we think that, in the case of a medical service, private practice would still remain, notwithstanding the availability of free treatment. We consider that in any scheme of public service it should be possible for any practitioner, if he so desire, to undertake both classes of work.

Scheme.

We do not propose to consider the points for and against whole-time and part-time services, but would emphasize our opinion that the main advantage of the whole-time service would be that it would be administratively more flexible. This is more than counterbalanced by the advantage of a competitive part-time service in which the individuality of the practitioner becomes the important factor in his success.

In outlining a scheme we have considered what are the minimum essentials to be observed, and we submit the following:

A. As Affecting the Public.

1. The best possible medical treatment should be available for every member of the public, and should include consultations, surgical treatment, dental treatment, in-patient treatment where necessary, the advantage of all modern developments, the best midwifery service and efficient nursing.
2. The freest possible choice of medical attendant consistent with administrative efficiency.

B. As Affecting the Doctor.

1. The service should be open, and appointments should be so arranged that the "slacker" may be eliminated, and ample opportunities may be afforded for the beginner.
2. There should be opportunity for the sternest competition.
3. Non-professional work should be limited to the minimum.
4. Adequate provision should exist for enabling the profession to take part in the control of its members.
5. The service should be such as will encourage doctors to continue to improve their knowledge, and be such also as will bring the general practitioner more closely into touch with those who practise in the specialists' ranks, thereby creating a better feeling of *esprit de corps*.
6. There should be satisfactory remuneration.
7. The work should be pensionable on a contributory basis.

C. As Affecting Local Authorities.

1. The public service should be so flexible and elastic that any future developments of state provision could be included in it.
2. The sickness rates and knowledge gained should be so recorded that they may be readily available for assisting local authorities to suggest improvements in the domain of preventive medicine.

We believe that a part-time service could be organized to meet these requirements; the first essential is that any public service should be on the basis of central clinics.

Clinics.

The work of a clinic would be somewhat on these lines: Clinics would be arranged in areas to serve varying numbers of the population, dependent on the social status of the inhabitants. One clinic might be required for 20,000 of the population, or one might even serve in some areas a population of 50,000. Each clinic would be fitted with consulting-rooms, waiting-rooms, and rooms for private examinations and for ordinary clinical methods. The residence of each doctor working at the clinic would

be connected therewith by means of a state telephone. His hours of attendance would be fixed. At the clinic would be nurses sufficient to assist at the consultations and to carry on the outside work. At this clinic also would be a clerk who would have charge of the docket of papers referring to any particular individual. Dispensing would be carried out at the clinic.

In larger areas would be a special clinic for other work and serving a series of clinics. This might be arranged either as a new institution, or at—as will be described later—one of the transformed Poor Law infirmaries, or at a general hospital. One or more of the ordinary clinics might also be at the infirmary or the general hospital for reasons which will also be recognized later.

Persons would be entitled to medical attendance by simple registration with the clerk at the clinic, and the guarantee of eligibility to the state provision—that is, alien or national—would be the production of the national registration card.

A set of circumstances such as the following would then arise:

A person has registered at the clinic. The clerk has notified the doctor some time previously that such a person is on his list for treatment. He now requires treatment. If unable to attend at the clinic, his representative calls there and requests the attendance of the doctor at the home of the patient. The clerk in charge now rings up the doctor and notifies the need of a visit. The clerk gives to the messenger a suitable form, which is handed to the doctor at his visit. No doctor would be permitted to charge private fees from any patient who had already intimated his desire to receive his services. The doctor continues to attend until such time as he thinks the patient is fit to attend the clinic; or the patient's condition may require a consultation at home with a specialist, for which arrangements will be made, or the patient may require an operation; this may be performed at home if slight, or at the special clinic if the case requires rather special attention, or at the infirmary if more severe; in this institution it may be performed either by the practitioner or by a more skilled surgeon; or the patient may be sent to a general hospital, and there receive his treatment at the hands of a member of the staff.

The same possibilities are available for medical work. If the patient requires simply a consultation, he attends personally at the clinic at the hour at which he knows the doctor of his choice will attend. It is not an administrative difficulty to arrange that the number of home attendances shall be recorded by the doctor and handed in to the clerk at the clinic. Suitable safeguards against irregularities ought not to be difficult to arrange. The clerk will then enter these visits on that particular doctor's account card, which is kept at the clinic, and also any consultations carried out by him at the clinic which should be credited to him. In this way the doctor's account is made up not by the doctor but by the clerical staff at the clinic.

One of the objections which will be raised to the above is, that the public will not accept this common centre. There will, however, be no compulsion for any member of the public to accept this treatment, except perhaps so far as offences under the Children Act may be concerned. If any members of the public refuse to avail themselves of the opportunities provided, they can still go to the doctor of their choice and pay for private treatment, but that choice would involve them not only in payment for the consultation, but in being called upon to pay for expert consultations, for operative work, or for in-patient treatment, if such should be necessary—in fact, for any of the ancillary provisions which would be available under the state system. It follows, therefore, that if a really adequate first-class system with all these advantages were provided, the sentimental objection to the common clinic would disappear with the increasing knowledge of the advantages which accrue to persons availing themselves of the facilities. These difficulties will be of major importance in the case of the present adult population. If the system develops on sound lines, the upgrowing population will, by association with school work, tuberculosis work, and in other ways, come to regard the new procedure as normal, essential, and desirable.

The special or major clinics, which would serve larger areas and a reasonable number of the ordinary or minor clinics, should be the centres at which all special medical

work is carried out—for example, maternity and infant welfare work and the tuberculosis dispensary. There should also exist arrangements for special consultations as it is obvious that consultants could not attend every ordinary clinic. At these places should also be facilities to enable the general practitioner to perform such operations as are generally done in the out-patient department, and after the performance of which the patient is usually sent home. Dental work should also be performed here. The scope of special duties could easily be enlarged upon, but it is quite obvious that it would be simple to connect the minor clinic with the major clinic, and that it would prove a means whereby the practitioner would be able to take his rightful share in the various state treatment schemes which now exist and are conducted in a more or less haphazard manner, and without regard for the claims of individual members of the profession other than the few specially appointed.

These larger clinics might very well be located either at a general hospital or at a remodelled Poor Law infirmary.

Hospitals.

General hospitals will obviously be required to take part in any general scheme of state treatment, and some reorganization will be necessary. If every patient were entitled to treatment by a general practitioner a large amount of present out-patient work would be taken from the general hospitals. This would leave the staff more time. It might result in the out-patient department being principally a department in which consultation work is carried out—that is, where patients sent by practitioners from the minor clinics would appear with a form setting out the reasons for their attendance. These patients would be examined by a member of the hospital staff, who would report to the practitioner his opinion both as to diagnosis and treatment. If it is a sound assumption that different members of the staff would, under the proposed system, have time available, they should be so organized as to constitute a rota for home consultations in areas defined. There should also be attached to such an institution one or more minor clinics, and if possible the major clinic. At a teaching school the patients attending these clinics could be used by permission—and we do not think it would be difficult to obtain this permission—for the instruction of medical students in minor ailments. The beds would be available for treatment of accidents and urgent cases and of those patients who require the services of an expert physician or surgeon, and, in addition, it may be possible to reserve a few beds for the treatment of patients by practitioners, particularly those cases in which the practitioner considers that home circumstances are not such as to give the patient the best chance of cure. For all this work the state would pay, but it does not necessarily follow that the controlling body—subject always, of course, to state supervision—need be very much altered.

The control of Poor Law infirmaries should be taken from the Poor Law authority and administered under the scheme. The organization would be something similar to that of the present general hospitals, but as a rule they should be administered by the local authority, and it is in such institutions that the main number of beds available for the treatment of patients by the patient's own doctor should be located.

The question of treatment and maintenance of permanently bedridden cases has to be decided, but it appears that the charge for maintenance of such persons might in some instances be one on the funds of insured persons; in others the state would pay. It is not easy to solve this question, and the alternative, and probably the better way, is to establish special institutions for the indigent infirm under the control of the state medical treatment organization.

Consultation and Bacteriology.

As regards the latest developments in bacteriology and medical science, it is obviously impossible that each separate clinic could be self-contained. A minor clinic simply needs equipment on the lines of a surgery of a modern progressive practitioner, but other work—for example, x-ray work, special blood and bacteriological work—should be done either at a major clinic or in a special pathological laboratory set up for the purpose. The essential feature is that the facilities provided by such a place should be available for any practitioner either for

the examination of a patient or a pathological product, and that a report should be furnished to him direct.

Consultants would generally be the men who were already attached to the various hospitals. A basis of payment should be arranged, certainly in the case of home consultations. Probably there would develop a method of payment of the staffs for hospital work, but this appears rather to come within the question of hospital administration and it would become a matter of agreement as to what amount the Government paid hospitals for expert work of this character.

In places unprovided with a hospital, a small institution suitable for the needs of the district would have to be established, and in rural districts the organization would require modification, but it seems to us not impossible to fit in the essentials. Central clinics in the more sparsely populated districts would have to be replaced by the doctor's surgery, and some system of control of accounts would be necessary as these would be kept by the practitioner, who would be paid, of course, for his services. The consultation work in these cases might be undertaken, as suggested by the President of the Local Government Board, by travelling clinics. The special operative work and special in-patient treatment would have to be arranged for at the nearest general hospital and the expenses of the patient to and from would also be provided.

Finance.

Is such a scheme as the above prohibitive on the account of expense? We must admit that our sources of information are extremely limited, and we submit with all reserve as a basis for consideration the following considerations:

Assume practitioners' payments to be on the basis of work done, the objections to this method on the score of book-keeping are removed by the fact that at the clinic there ought to be kept a record of any particular doctor's work. A consultation could be regarded as a unit of payment, and other work, such as home, urgent, and night visits would be represented by multiples of this unit. As it is essential to prevent excessive visiting, the unit per visit should closely approximate the unit value of the consultation. Perhaps more consideration might lead to the adoption of a case value system for cases of patients treated at home.

We have not considered the question of remuneration, but assuming that, prior to the war, 7s. 6d. might have been held to be adequate to cover the medical risk of every person registered we should have this situation:—

As a varying number of the population would not avail themselves of treatment, it is clear that a smaller sum per head of the total population would represent the equivalent of the medical risk of registered persons. In any area of administration, therefore, it follows that there would be in that area a practitioners' fund equal to the total population multiplied by the agreed capitation fee, and this we estimate would be about ten million pounds. That fund would then be paid out to the practitioners in proportion to the number of units which had accrued to each during any prescribed period—monthly, quarterly, or otherwise. If sufficiently large unit areas were arranged, inequalities in social status would be smoothed out, and the effects of sudden increases or decreases in populations minimized. If London, for example, were made a single area, practitioners in a district like Hampstead would take fewer units out of the London pool than would a practitioner, say, in Stepney, and similarly the aggregate income of the Hampstead practitioner would require to be made up more by private practice than would be the case in Stepney.

It will be seen, therefore, that, although it is not a direct capitation payment for each patient, the fund is to be made up on a capitation basis, and the allocation results in the man who does the most work receiving the most money. This fact, together with the increased freedom in the choice of doctor, would result in competition being keen and in the practitioner putting forth his utmost endeavours both to retain his old patients and to obtain new ones. There will be very little necessity to limit the practitioners' list. The patients would themselves object to or accept the circumstances associated with any particular doctor, and the practitioner would discover his physical limitations, with the result that a reasonable balance would automatically be discovered.

Burdett's Hospitals shows that in London and the provinces 27,906 hospital beds were provided at a total annual cost of ordinary and extraordinary expenditure of

£2,855,236. Sir A. Newsholme in his last report estimates that there are at least 45,000 beds provided in voluntary hospitals. The total cost, therefore, might be estimated at about £4,500,000.

In addition to the above there are available:

For small-pox	39,000
For tuberculosis	10,000
For insane and in asylum	109,000
For the feeble-minded	12,000
Provided by Poor Law authorities...	94,000
	224,000

A grand total of 309,000. Of these beds, 264,000 are already paid for by the community, and therefore the transference of those to a new authority would not involve the public in additional expense; and apparently, if the Government took over the voluntary hospital administration in its entirety, the cost would approximately be as stated above, excluding capital expenditure.

Assuming the population of England and Wales to be 36,500,000, a charge of 13s. a head would realize £23,725,000. From this deduct the total cost of hospitals (excluding capital), £4,500,000, and the Practitioners' Fund of, say, £10,000,000; there is available, without taking into account the saving on tuberculosis, maternity and child-welfare treatment, and the outdoor medical service of the Poor Law, a sum of between nine and ten millions for all the remaining work. Without further analysis this does not seem to us an impracticable proposition.

Pensions.

A State Medical Service will be much improved in every respect by pensions on a contributory basis. The permanent scheme might be on the lines of existing schemes, in which varying contributions, based on salary, are annually deducted from officers' emoluments. The percentage amount would depend upon the age of the practitioner at the time he entered the service, and would vary between 2 and 3½ per cent.

The age for compulsory retirement should be 65, and the optional age 60, provided forty years' service are recorded. Professional men differ from the clerical staff in the important respect that there is a possibility of a clerk arriving at the forty years' provision at least five years earlier than is possible for a doctor, since a clerk may enter a pensionable service at the age of 16, but no doctor before the age of 21. It follows, therefore, that the clerk may retire at $16 + 40 = 56$, but no doctor before $21 + 40 = 61$. Seeing that the professional training is just as important as the preliminary clerical training, the doctor should either have five years added to his period of service, or the voluntary period should be reduced to thirty-five years, with a proviso that the retiring age should still remain at 60. In the case of incapacity the age of retirement would be that at which permanent incapacity is reported.

The amount of pension is computed in sixtieths, so that forty years' service represents two-thirds. In order to encourage men to retire before they markedly decline in ability or vigour, the basis of calculation should be the average of the last five years' receipts from the state. This would impel a man to relinquish state practice before the decline was so pronounced as materially to reduce his average.

The chief difficulty at the commencement of the scheme would be in respect of those approaching the age limit. The state, by setting up a free service, would materially diminish the value of the vested interest which these older practitioners have created for themselves. Without state competition the practice would have a transferable value. In the altered circumstances this would be diminished, and doctors should be discouraged from regarding their state patients as transferable to a successor.

If this principle be accepted, then some compensation is due from the state, and this should take the form of pensions to those who are compulsorily retired and who during the last few years have been engaged in panel work. It would not be an expensive matter to pay pensions to those already 65 years of age, basing the amount on the last five years' returns from panel work, and as regards men of between 50 and 65 increased contributions would help to remedy the fact of their having only a few years' service to their credit. Such treatment

of men who would be so affected would be an act of simple justice, and would do much to remove the opposition which would be aroused from practitioners who would otherwise have reason to contemplate the future with grave concern.

The pensionable character of the service could be used to ensure that practitioners kept up to date in their knowledge. It is obvious that if the state pays, the state will establish some sort of supervision over the work done. Mere supervision, however, will not prove adequate; a man should keep pace with modern progress. Post-graduate courses should be available, and attendance of men should be encouraged. Up to the age of 50, or even later, men might attend such courses. In fact, a definite syllabus indicating a course of instruction might well be laid down by the authorities and the reward for attendance be an addition to the number of years' service, in the aggregate, not to exceed a number, say five to ten, but these additions should not justify a man retiring before 60 except on medical certificate. They would simply assist in increasing his pension when he had decided to retire.

There are many points in the above outline which have not been touched upon, particularly the question of control, but in view of the suggestion that local authorities should administer, and of the present policy decided by the Government that advisory councils shall be a feature in future medical administration, we think it inadvisable to enlarge upon the subject further than to suggest that a local medical advisory committee, representative of practitioners in the area and elected by them, should administer the scheme jointly with the approved committee of the local authority. This composite committee would be vested with the necessary powers and would work under regulations issued by the Ministry of Health. It is probable that minor disciplinary powers would be exercised by that committee, leaving matters of serious importance to be dealt with by the central body. In any scheme it should be arranged that purely medical matters should be dealt with by medical men.

NOTE.—Although we both are officially associated with the London Panel Committee, we desire, in order to avoid misunderstanding, to state that the above represents our personal views, and in no way those of the committee.

REFERENCE.

¹ Comyns Carr, Garnett and Taylor: *National Insurance*, p. 112.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF INFLUENZA BY LARGE DOSES OF SALICIN.

The appended table shows the duration of 335 cases of influenza which have come under observation since October 29th, 1918, and also the number of hours from the estimated commencement of the illness (fever, etc.) within which treatment was commenced. Every one of the cases has been treated with doses of salicin, gr. xx, every hour for twelve hours, followed by gr. xx every two hours for the next twelve hours. The table shows fairly clearly that the earlier the patient can be got fully under the influence of the drug the shorter the period of fever and the more rapid the recovery. Every case which has been observed and treated since October 29th is included in the table. There was not one single complication in any one of them, and every one has recovered perfectly. The ages of the patients ranged from 77 to 7 years. In the case of young persons under 16 years of age the dose was reduced and given in the proportion of 1 grain per year an hour (that is, a child of 10 had gr. x every hour). But the best and quickest recovery of all these cases occurred in a child of 14 who, on maternal diagnosis, had ten doses of gr. xx before being seen. No bad effects whatever followed the administration of these large doses of the drug in any instance. About thirty individuals had more or less buzzing in the head, three had a red punctiform rash, and a larger number sudamina. Both the rash and the buzzing subsided at once as the drug was left off.

Every one of the patients was in a position to take proper care of himself or herself, and was kept strictly warm in bed until the temperature had been normal for at least twenty-four hours. Several old cases of valvular heart

Table showing Number of Hours after the first Symptom when Salicin was begun, and the Day on which the Temperature returned to Normal.

Hours.	Day on which Temperature returned to Normal.						Total Cases.
	2nd.	3rd.	4th.	5th.	6th.	7th.	
2	11	6	4	3	1	0	5
4	8	13	26	17	7	3	74
6	18	29	38	17	10	5	117
8	3	7	10	9	6	5	38
10	1	4	8	3	1	2	19
12	0	3	4	6	7	4	24
14	1	1	3	7	5	4	19
16	0	0	2	4	6	1	13
18	1	0	0	3	6	2	6
Total	43	63	95	69	41	24	335

mischief are included in the series. They recovered as quickly as any others, and suffered no inconvenience. As a rule those cases which commenced with very high fever (103.5° to 105°) seemed most amenable to the remedy, and came to an end more quickly than those which began with a more moderate temperature. There is no doubt whatever, as the bacteriologists have shown, that this November and February epidemic is quite different from the one which invaded us last July. Clinically the symptoms are more severe, and therapeutically the salicin treatment has not quite the same result. In all epidemics from that of 1889 up to and including that of July last practically every case treated with salicin, as set forth above, came to an end, without complication, in forty-eight hours at the latest. Since November the cases are not cut so short, but though symptoms persist in some instances for five, six, or seven days, yet every form of complication is avoided, and recovery is rapid, and with no bad after-effects. The only case out of the 335 which was at all troublesome was one of the "gastric" variety, in which diarrhoea and vomiting were persistent, and which ran for the full seven days. It is perhaps as well to point out that these cases follow in unbroken series upwards of 2,300 treated by the writer in the above-mentioned manner since 1889, every one of which has ended in complete recovery with no complication, and without a single death. The first series of 250 of these was published in the *Lancet* in 1891. The late Dr. T. J. MacLagan had the same results from the same treatment. He published his results at the time.

London, W. E. B. TURNER, F.R.C.S.

THE WET PACK IN INFLUENZA.

THERE seems to be great variety of opinion as to the treatment of influenza. The general recommendations are: Rest in bed, good nursing, antipyretics, and heart stimulants. The only safe and reliable antipyretic is cold water, but I have not seen its use suggested. The cold wet sheet pack is at once a powerful and sure antipyretic and a valuable heart tonic.

Some years ago, during an epidemic of influenza, I adopted this treatment, and had the satisfaction of seeing all the patients recover with remarkable rapidity.

All that is required is a sheet wrung out of cold water, and two or three blankets. The Brand bath is another method of reducing temperature, but with the volume of water in this method the rapidity of elimination is apt to overcome the vigour of the patient. I prefer the wet sheet pack; it is more easily applied, and its action can be graduated in intensity according to the quantity of water used.

The duration of each pack should not exceed thirty to forty minutes, or until the sheet feels nearly as warm as the surface of the body. It may be repeated immediately once, or even twice if necessary. Before applying the wet sheet the face and neck should be bathed with cold water, and a wet cloth applied to the forehead.

W. C. PHILLIPS, L.R.C.P. and S.E.,

M.O. in charge Red Cross Clinic for Physical Treatment of Disabled Soldiers, London, W.

Reports of Societies.

TRANSFUSION IN DISEASES OF THE BLOOD.

At a meeting of the Section of Medicine of the Royal Society of Medicine on February 25th, Dr. G. NEWTON PITT being in the chair, Dr. O. LEYTON read a paper on transfusion in diseases of the blood, based on 100 transfusions. The main object of the paper was to record the method adopted and the results obtained.

Methods.

His experience began seven years ago by the transference of blood from an erythraemic patient to one suffering from pernicious anaemia. A syringe of 20 c.cm. capacity was fitted with a three-way tap, to which the rubber tubes and needles were attached. The whole apparatus was washed out with liquid paraffin and drained. Blood was drawn from the erythraemic patient and directly injected into the vein of the anaemic one. After 40 c.cm. had been injected the latter complained of severe cramp in the limbs and the transfusion was stopped. The symptoms subsided after about a quarter of an hour, and it was found that the red blood cells had increased from $1\frac{1}{2}$ to 2 million per c.mm. In the absence of a knowledge of Moss's work on iso-agglutinins, the symptoms were ascribed to obstruction of capillaries of the central nervous system by minute quantities of liquid paraffin. The patient felt so much better that he desired another transfusion. On this occasion care was taken to expel all excess of paraffin, and a glass window was put in the tube close to the needle to ensure that no air was injected. The transfusion of 80 c.cm. of blood led to the same symptoms as before, together with nausea, vomiting, and severe palpitation. The donor belonged to Group 2, whilst the patient was of either Group 4 or 3. No lasting benefit ensued.

In a patient with recurrent pernicious anaemia a series of transfusions were made by the multiple syringe method so as to avoid cutting or obliteration of veins. The patient, whose blood was of Group 4 was in *extremis*. There was no difficulty in transferring 200 to 300 c.cm. by this method, but the blood in the needle in the donor's vein then clotted, and a fresh needle had to be inserted into a fresh vein. To obtain 600 c.cm. the donor had to be pricked at least three times, and sometimes, when fright hastened the clotting, even four or five. Needles were therefore made with cannulae; if the blood in the cannula clotted, that cannula was withdrawn and a fresh one inserted. By this means an unlimited quantity of blood could be obtained by pricking the donor once. Needles and cannulae of various gauges were made. The needle must be sharpened every time before use. The end of the cannula should be rounded, and should project about 0.5 mm. beyond the point of the needle. The syringes were of 20 c.cm. capacity, and had attached about 10 cm. of rubber tubing of about 1 c.cm. capacity. A nozzle attached the tubing to the mount of the needle. The syringes were coated with vaseline and washed out with liquid paraffin, and the tubes were filled with a solution of sodium citrate (5 per cent.) and sodium chloride (0.45 per cent.) to prevent waste of blood and coagulation. The rubber tubing permitted slight movement of the syringe without damage being done to the vein. If the blood showed a tendency to clot the citrate solution was caused to mix with the blood by shaking the syringe slightly. The solution should be made with water sterilized immediately after distillation. Vessels containing sterile normal saline should be near the recipient and donor, in case the rates of drawing and injecting blood failed to correspond, for the interval might be filled up by passing saline through the cannula, thereby preventing clotting in the vein.

The introduction of the needle was facilitated by distending the vein by applying a pneumatic armlet and compressing the air in it to the diastolic blood pressure of the donor or recipient respectively. The arm should be kept warm until all was ready, and the pressure should not be released until the cannula had been passed through the needle.

The donor must belong to the same group as the recipient. Even if donors of Group 4 only were used there must be the risk that the serum of the blood injected might haemolyze and damage the patient's red cells. Donors must be free from malaria, syphilis, and tuberculosis. He preferred a donor unacquainted with the patient, because frequent transfusions might be necessary, and the donor might falsely assert that he was feeling quite well, in order to supply further blood to a relative or friend. If only one transfusion was anticipated, there was no reason to avoid a relative as a donor.

The preparation of the donor consisted in assuring him that he would feel no ill effects, and that the amount of blood to be taken was less than half that which he could lose without discomfort. The donor usually had a cup of coffee shortly before transfusion, and he was encouraged to smoke during the operation. If the donor became frightened his blood clotted rapidly, and if faint the blood ceased to flow. A short interval, during which saline was injected, was required before proceeding. There were

no after-effects. He favoured using the same donor frequently.

Preparation of the patient consisted in depriving him of all but the lightest food for six hours before transfusion. Rigor and slight pyrexia were less frequent and less intense if a small dose of morphine and hyoscine was given half an hour before the operation.

Results.

The hundred transfusions were distributed very unevenly among ten patients, one having more than fifty, whilst two had one each. The immediate effect was masked by the morphine and hyoscine. Afterward the patient felt much less ill. When there had been haemorrhage from the bowel or uterus it ceased. The vomiting and nausea—sometimes accompanied by diarrhoea in extreme anaemia—were alleviated. The blood picture improved, the red cells being sometimes more than could be accounted for. Perhaps this was explained by polyuria which was very noticeable during the first few hours after transfusion. The increased number of red cells might be maintained or might disappear during the next four days.

Conclusions.

After relating cases, including some of pernicious anaemia, a case of myeloid leukaemia, and two cases of aplastic anaemia, which were treated in this way, Dr. Leyton drew the following conclusions: (1) In the majority of cases symptoms were alleviated by the transfusions. (2) In some a series of transfusions at short intervals led to the blood becoming normal for a time. (3) Perhaps in a small percentage life could be maintained indefinitely by supplying the blood at the same rate as it was destroyed. (4) In many cases the disease was progressive in spite of transfusions. The blood picture became worse and worse, and death was only postponed for a short time.

In the course of the subsequent discussion Mr. ALEXANDER FLEMING said that his experience was confined to transfusion of septic surgical cases at the base in France. He had used the citrate method, transfusing from 600 to 1,000 c.cm. into the recipient. There had been no untoward symptoms except in one case; the considerable distress experienced in that case after the injection of 100 c.cm. was possibly to be explained by the transfusion being given too quickly, or by wrong classification of the donor. The surgical teaching was that the blood of donors of Group 4 could be given to anybody, since no serums agglutinated their corpuscles. He had used members of this group in every case. The result of the transfusions had been to benefit the patients immediately. Nearly all had had a secondary haemorrhage. In them, after transfusion, the colour returned and they felt better, an improvement which persisted. An attempt had been made to combat sepsis by utilizing the blood of recovered cases, but there was no evidence that it had any advantage.

Dr. H. INGLEBY said that her experience of transfusion in cases of pernicious anaemia was similar to that of Dr. Leyton. The most successful result was in a case of gastric ulcer with severe haemorrhage, which was rapidly getting worse, and seemed likely to end fatally. After the first transfusion a rigor and haemoglobinuria occurred, but the general condition improved, and transfusion was employed on two subsequent occasions. The amount of blood transfused had been small, varying from 100 to 10 c.cm. This raised the question whether small quantities were not as useful as large, and whether transfusion was not in part beneficial through stimulating the bone marrow.

Dr. F. S. LANGMEAD spoke of transfusion for "the haemorrhagic disease of the newly born," in which the procedure described by the reader of the paper was impracticable. The fact that in this disease the injection of small quantities of human serum or of human blood subcutaneously or into muscles had very greatly improved the prognosis showed that in such cases, at any rate, the result obtained was attributable to something more than mere replacement of the lost blood.

Dr. NEWTON PITT said that it would be useful to determine which were the best methods, and to correlate results obtained in different diseases. It was open to argument whether the transfusion of citrated blood in gastric ulcer might not increase the liability to haemorrhage. In such

cases horse serum alone was sometimes effective. He thought the introduction of the cannula was a great improvement on former technique.

Dr. O. LEYTON replied.

CONGENITAL STENOSIS OF THE PYLORUS.

At a meeting of the Medical Society of London held on February 24th, the President, Major A. F. VOELCKER, R.A.M.C.(T.), being in the chair, Mr. R. A. RAMSAY read a paper, in the course of which he said that he regarded congenital stenosis of the pylorus as a true hypertrophy, for which operation offered the best prospect of recovery. There were two causes of failure: One, the extent of the wasting when treatment was undertaken, so that the patients were incapable of assimilating food, and were liable to severe or even fatal diarrhoea; the other the liability to death from shock. The duration of the operation must be as short as possible, the abdominal viscera exposed and handled as little as possible, and all manipulations carried out with great gentleness. Having discussed the operation of resection of the hypertrophied pylorus and gastro-enterostomy, he stated that the three remaining operations all aimed at providing an efficient communication between the stomach and the duodenum by re-establishing the natural channel through the pyloric canal. They were: Pyloroplasty with its modifications; dilatation, or rather divulsion of the hypertrophied muscle; and simple incision of the constricting band. Each had an advantage in that the manipulations were limited to the pylorus and adjacent part of the stomach, so that a smaller incision and less disturbance of the parts were required. He discussed the operation of pyloroplasty and Loretta's operation, usually described as dilatation of the stricture, but which actually included rupture of the constricting band, and expressed the opinion that it was preferable to resection and to gastro-enterostomy, in that there was less disturbance of parts, less suturing, and no haemorrhage, so that the duration of the operation was less and the subsequent shock diminished. Rammstedt's operation had very definite advantages; in it the hypertrophied muscle was incised from the peritoneal surface as far as the submucous layer, the mucous membrane being left intact and the stomach not opened. The anatomical result to the pylorus was the same as when rupture of the constriction by dilators was carried out, and depended upon the same details of morbid anatomy—namely, upon the tendency of the divided muscle to widen the incision by its contraction and upon the redundancy of the mucous membrane. He gave a detailed description of the method he had used on three occasions. The anaesthetic used was chloroform followed by open ether; the operation lasted about six or seven minutes, and on return to bed feeding was begun at once. The final result depended upon the degree of wasting present, and therefore the earlier the operation was done the more hope was there of success of the subsequent treatment by suitable feeding. Of his three cases two had died, but in neither instance from the post-operative shock hitherto so frequent and fatal. All three recovered from the effects of the operation and gave evidence of the patency of the pylorus, death occurring in one case after six days from inability to assimilate, and in the other after four and a half weeks from ileo-colitis.

Mr. D'ARCY POWER agreed that pyloroplasty and Loretta's operation were much too long and complicated. It was clear that the earlier the operation was done the better for success. It was important that some agreement should be reached as to the optimum time for surgical treatment.

Mr. TYRRELL GRAY said that he had performed Rammstedt's operation in from fifteen to twenty cases, and agreed that it was the best surgical procedure. All his first four cases recovered. After a phase of disappointing results, they were now much better again and were improving. Results would depend upon the time of the operation and the after-treatment.

Dr. E. CAUTLEY agreed that the surgical results of Rammstedt's operation were good. It should be done as soon as a clear diagnosis was made. He was not satisfied with a diagnosis of hypertrophic stenosis of the pylorus unless a tumour could be felt or the symptoms were very characteristic.

Dr. F. S. LANGMEAD took the view that recovery by medical treatment alone was by no means uncommon, but disagreed with those who deferred operation until too late

or opposed surgical treatment in these cases. If an infant of two to three months old when first seen weighed only 6 to 7 lb., it was a case for operation without delay. If the condition was fairly good, medical treatment could be tried, and might prove quite effective. If, after one to two weeks' trial, the weight was stationary or declining, operation should be no longer deferred.

The PRESIDENT said that an analysis of 33 cases under his care did not indicate what were the causes of death, or what determined the degree of wasting. The mortality had been 60 per cent., and no case had been treated surgically. He had hesitated to advise operation, for he could never assure himself that the obstruction at the pylorus was the cause of the wasting. The prognosis depended very much on when the patients came for treatment. Weight was an important factor in prognosis.

Reviews.

THE STUDY OF CHRONIC INTESTINAL STASIS.

MANY years have passed since Sir W. ARBUTHNOT LANE first brought forward his views as to the causation of intestinal stasis and the results it may produce upon other tissues. The third edition of his book was published in 1915, and in the fourth,¹ which has recently appeared, most of the previous work finds a place, supplemented by a series of chapters contributed by other writers who have made special studies in connexion with the subject. It would appear that only a small proportion of the whole is from the pen of the author himself and that this is contained in an explanatory preface and in a certain amount of revision of the earlier papers, written many years ago, but included in the present volume.

Defining chronic intestinal stasis as delay of abnormal character in the passage of food through the gastro-intestinal canal, he argues that the strain thus thrown upon various parts of the intestine may result in adhesions and the formation of obstructive bands along certain definite lines, such adhesions and bands not being of truly inflammatory origin and not present as congenital defects. One of these, frequently found to be a cause of obstruction, situated close to the caecum, has acquired the name of "Lane's kink," more especially in American surgical literature. Similar bands may form about the duodenum and may, by persistent obstruction, give rise to haemorrhage, ulceration, or even to cancerous degeneration. Accompanying these objective changes there is usually a marked degree of mental depression and persistent ill health, frequently associated with chronic arthritic changes in the smaller joints. Relief of the obstructive conditions by a surgical operation has often been followed by immediate improvement in the secondary symptoms. A very large number of such operations have now been performed and in skilled hands have yielded striking results. It has been clearly proved that removal of the greater part of the large intestine by short-circuiting the ileum to the descending colon is not only free from evil results, but in many cases of chronic stasis may be capable of restoring normal health. It is a significant fact that the procedure is most warmly advocated by those who have made special study of the subject and have learnt to recognize the extent of the evil that may be wrought by the constant absorption of morbid products from a sluggish colon.

The new edition, nearly double the size of its forerunner, contains fifteen chapters, nine of which are new. The great bowel is discussed from the anatomist's point of view by Professor Arthur Keith, with especial reference to the formation of the lines of stress and the occurrence of adhesions. The large subject of intoxication and sub-infection as a result of intestinal stasis is worked out by Professor Adami. The effects produced upon the blood and upon the accommodative power of certain muscles are described by Major A. W. Robertson and Mr. Ernest Clarke respectively. Dr. Leonard Williams presents the medical aspects of intestinal stasis in a somewhat lurid light. Drs. Mutch and Jordan, collaborators in previous editions, contribute chapters on microscopic and

¹ *The Operative Treatment of Chronic Intestinal Stasis.* By Sir W. Arbuthnot Lane, Bt., C.B. Fourth edition, revised and enlarged. London: Henry Frowde, and Hodder and Stoughton, 1918. (Med. 8vo. pp. xii + 328; 133 figures. 20s. net.)

x-ray evidence, while the gynaecological and dental consequences of intestinal stasis are set forth by Mr. Chapple and Mr. Forsyth. The whole book, well printed and illustrated, deserves careful study. It is the outcome of much thought, observation, and experience on the part of experts. Some of the results of the operative treatment which it advocates have been remarkable, but the actual proportion of success and failure is not recorded.

OCCUPATIONAL DISEASES.

So many acute and chronic diseases are connected with various industrial occupations, and so many increasing disabilities of every sort arise therefrom, that the massive textbook on *Diseases of Occupation and Vocational Hygiene*,² edited by KOBER and HANSON, may be accepted with gratitude as a work of reference on the problems of industrial organization. The editors contribute a most interesting historical review of the subject as preface to the volume. As all writers must, they begin with Professor Ramazzini of Padua, who wrote the first systematic treatise on diseases of occupation in 1700. It was translated into English and into French a few years later, and was the forerunner of many books in both languages, but particularly in our own.

The volume now before us is so full of facts and figures of importance as to preclude anything like a systematic review in the space at our disposal. It is divided into three sections. The first is mainly medical, and deals with the specific and systemic diseases of occupation, fatigue, and the neuroses; the second section is devoted to the causation and prevention of occupational diseases and accidents, and will repay study by employers and controllers of labour. The third and shortest section gives an account of Professor Devoto's clinic for occupational diseases at Milan, opened ten years ago; it contains statistical and legislative studies in the prevention of these diseases. We commend the book very warmly to all medical practitioners who are concerned with the subject of occupational diseases and their prevention.

NOTES ON BOOKS.

DR. RODDY'S *Medical Bacteriology*³ is designed to meet the needs of medical students, practitioners, and pharmacists. It is a painstaking piece of work, well illustrated, a little superficial in its treatment, and disfigured with numerous misprints.

*Destroyers, and Other Verses*⁴ is a small collection of short poems by Dr. HENRY HEAD. A few are definitely war poems, and express with much pathos the chagrin experienced by so many at finding themselves too old to serve. But the majority are composed of the imaginative outpourings of Camille Selden, better known in literature as "La Mouche," who was beloved by two poets, and whose friendship solaced the great Heine during the last days of his terrible suffering. In these verses, with their easy musical rhythm, doubtless inspired by the *Buch der Lieder*, Dr. Head displays an intimate knowledge of the human heart, and an insight into the strange fascination which Heine has always possessed for those who are sensitive to "the tears in things." In Seedtime and Harvest the supreme joys of motherhood and charm of infancy are described with delicacy and true feeling. Throughout, the structure of the verses has a pleasing simplicity, and the diction is pure.

² *Diseases of Occupation and Vocational Hygiene*. Edited by George M. Kober, M.D., LL.D., Washington, D.C., and William C. Hanson, M.D., Belmont, Mass. London: W. Heinemann (Medical Books), Ltd. 1918. (Med. 8vo, pp. xxi + 918; 46 figures, 32s. net.)

³ *Medical Bacteriology*. By John A. Roddy, M.D. Philadelphia: P. Blakiston's Son and Co. 1918. (Med. 8vo, pp. xi + 25; 46 figures, 8 in colour.)

⁴ *Destroyers, and Other Verses*. By Henry Head, M.D., F.R.S. London: Humphrey Milford. 1919. (Fcap. 8vo, pp. 87. 4s. 6d. net.)

EMERGENCY POST-GRADUATE FACILITIES IN LONDON.

THE Fellowship of Medicine has arranged with the medical schools in London and other hospitals for an emergency post-graduate course of three months for qualified medical officers from the R.N., R.A.M.C., and R.A.F., from the Dominions and the United States and Allies, admitting to their general practice, including clinical instruction in the wards and out-patient departments, clinical lectures and demonstrations, *post-mortem* demonstrations, and laboratory work.

The following is a list of the schools and hospitals available and of the special courses already in progress:

Medical School Hospitals.

St. Bartholomew's Hospital.
St. George's Hospital.
Guy's Hospital.
King's College Hospital Medical School.
London Hospital.
London (Royal Free Hospital) School of Medicine for Women.
Middlesex Hospital.
St. Thomas's Hospital.
University College Hospital Medical School.
Westminster Hospital.

Other General Hospitals.

Prince of Wales's General Hospital, Tottenham.
West London Hospital, Hammersmith.

Special Hospitals.

Cancer Hospital.
Chelsea Hospital for Women.
Hospital for Children.
National Hospital for Diseases of the Heart.
National Hospital for the Paralyzed and Epileptic.
Queen's Hospital for Children, Hackney Road.
St. Mark's Hospital for Diseases of the Rectum.
St. Peter's Hospital for Urinary Diseases.

Special Courses already in Progress.

King's College Hospital Medical School. January 24th to March 29th.
National Hospital for the Paralyzed and Epileptic. February 10th to April 10th.
London (Royal Free Hospital) School of Medicine for Women. Special 14 days' Course. March 15th to 31st: "Medicine and Surgery of Liver and Gall Bladder." May 5th to 16th: "Diseases of the Thyroids and Parathyroids."
West London Post-Graduate College (West London Hospital). February 17th to April 17th.

Special lectures are being arranged also at:

North-East London Post-Graduate College (Prince of Wales's Hospital, Tottenham).
National Hospital for Diseases of the Heart.
Cancer Hospital.

Tickets for the whole course, or for one or two months, at the rate of £3 10s. for each month, can now be obtained from Miss Willis, the Secretary to the Fellowship, who is in attendance daily from 10 a.m. to 5 p.m., and to whom all inquiries can be addressed. The card of membership for any period of the course admits the holder to any, or all, of the hospitals available, including their special courses. Time tables and syllabuses of the various courses and daily programmes are posted in the entrance hall at 1, Wimpole Street.

Arrangements are being made for a definite course of daily lectures and demonstrations in general and special subjects, at the house of the Royal Society of Medicine, 1, Wimpole Street. The honorary secretaries of the Fellowship are Mr. Philip Franklin, F.R.C.S., Mr. J. Y. W. MacAlister, and Mr. Herbert J. Paterson, F.R.C.S.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

(Continued from p. 252.)

RETAILING BENZOL.

A SOMEWHAT odd situation has arisen in connexion with the provision of benzol as an alternative motor fuel. Some of the benzol producers are arguing that the next step rests with the individual consumer. Large quantities are being exported instead of being used in this country. It appears that the difficulty is an old one as far as readers of these columns are concerned—namely, that the distribution problems are acute, drums and tins being particularly scarce, while co-ordination of supply is wanted. Therefore, the Automobile Association has stepped into the breach by arranging that local agents and repairers appointed by it, and who are recognizable by the "A.A." sign outside their establishments, will supply benzol with the aid of that association. It can be bought in fifty-gallon drums and kept in a private garden or outhouse provided it is 20 ft. away from a dwelling place. The Automobile Association will give any inquirer the fullest advice and help. It even goes to the length of arranging that the local A.A. agent will store benzol for the individual user. Further, it has made arrangements for overcoming the difficulty in regard to drums by securing a large number of the fifty-gallon steel variety. The individual member of the association can hire one for a purely nominal fee of 10s. a year. The Automobile Association will explain to individual motorists how to store benzol, how to draw it, and how to use it. It will help the individual motorist's agent to get it for him, and thereby encourage him to extricate himself and the motoring community from the fuel problem. Such work

of the Automobile Association deserves to be widely known in that it comes to the most timely relief of the motorist.

MASS PRODUCTION STARTED IN ENGLAND.

In the mean season the work of changing over from war to peace activities proceeds apace. Among the forms of enterprise not formerly exploited in this country is that of mass assembly, the outstanding example of which was provided by the Hudson car made in Detroit. The engines were made by Continental Motors, the gearboxes by specialists in gear cutting, and so on throughout every detail of the chassis.

Meantime, what are we doing in this country? The ranks of the motor car producers have just been augmented by the old coachmaking firm of Sir William Angus, Sanderson, and Co., of Newcastle-on-Tyne, which is taking the initiative in a scheme for the large production of a car built of components by specialists, and to be known as the Angus-Sanderson car; it will be assembled at Newcastle on a programme aiming at six thousand output in the first year, with very rapid acceleration from that period onwards. The components are manufactured in London, the Midlands, and as far north as Glasgow. For example, the nominal 12 h.p. engine is made by Tylor's, while the change speed and axle gearing, front and rear axles and steering gear, together with the brakes and control, are made by Wrigley's of Birmingham; the dynamo, starting motor and five lamps by Lucas of Birmingham; the magneto by Thomson-Bennett of Birmingham; the detachable corrugated disc wheels by Goodyear's of Dudley; the large and extra thick tread non-skid tyres by Wood Milne, Ltd., of Leyland, Preston; the car frames by Mechem and Sons of Glasgow; and the coachwork and entire assembly by Sir William Angus, Sanderson, and Co., Ltd., at Newcastle. The output will be about 130 cars a week, and the market price of the vehicle will be £450, the expectation being that batch production will be in full operation at the beginning of May.

The body is of the kind which, at pre-war costs, as coachmaking was then done, would be worth £150; but it can be produced at considerably less cost to day by pressing out the panels, and so forth. Hydraulic plant for this purpose has been installed, and use is to be made of electric and other effective methods of local welding. The car complete is of light weight, scaling 17 cwt. with full equipment, including five relatively large tyres. It is possible to say, at the moment, that the idea will be that such a vehicle will give an average of thirty miles to the gallon of petrol, and will run with the at present low grade spirit, the intake pipe having a "hot spot" or isolated piece of metal heated by the exhaust, against which the fuel charge impinges. The car features include the combination of the cylinders *en bloc* with the upper part of the crank chamber; specially light pistons of cross head form on the Ricardo system, with hollow gudgeon pin in a floating bearing, the combination weighing 12 oz. as compared with 2 lb. for the average cast-iron piston. An unusual practice is the balancing of the crankshaft by means of counterweights. The future of this four-cylinder car, with a bore measurement of 3 in., a piston travel of 5 in., giving the R.A.C. rating of 13.9 h.p., will be followed with interest by the medical profession.

The Goodyear corrugated disc wheels used are certainly a very clever invention both for simplicity, lightness, strength, and ease of cleaning. I should imagine they would be the lightest type of wheel yet devised of any variety, much stronger than wooden ones, and I look on their evolution as an earnest of what can be done to offset post-war costs by entirely and radically redesigning every car detail on lines as novel as is this in regard to the wheels. This is designing along sound engineering lines and manufacturing methods involving the minimum labour and the maximum use of stampings, which are in every way an improvement on what we have known before, yet enormously cheaper despite the increased costs of labour and therefore of materials. In quantity production it is possible to produce five wheels—that is, four for use and one spare—for a wholesale cost of less than £2 a vehicle. There is no reason why in the course of a few years inventions should not be applied to other portions of the complete chassis equally with this wheel development. Certainly cars will have to be cheaper than they have ever been. It is merely that in the interval we have a very awkward period to

negotiate. The average car manufacturer, of course, takes the line of least resistance since his business is to make profits from year to year, also to give as much employment as possible in conjunction with what the public are prepared to pay.

SUNDRY "LIGHT" CAR PROPOSITIONS.

There are quite a number of post-war "light" cars, but in the main they do not call for detailed consideration. A new comer in this field is the long-established Birmingham concern of Components, Limited, which is to produce a 10 h.p. four-cylinder car with electric starter and lighting set under the direction of the general manager, Mr. J. W. Stocks, who up to the time war broke out was the managing director of the De Dion Bouton business in this country.

Another new make of car is introduced by the firm of Douglas of Kingswood, Bristol, well known in connexion with the motor bicycle business. It had begun experimenting with the light car about the time war broke out, and has spent something like £20,000 testing out its ideas. A number of vehicles have been made and supplied so that they can be run under conditions of private service yet more or less under the direct observations of the proprietors of the business. There are considerable evidences of cycle practice in the vehicle. It has a twin cylinder horizontally opposed engine, which, however, is of the water cooled variety, both bore and stroke measurements being 92 mm., so that it is just short of one and a quarter litre capacity. The engine, clutch, gearbox, and C.A.V. electric starter are combined in a unit, yet it is possible to dismantle any one item separately. Three speeds and a reverse are provided; the gear-shaft is mounted on ball bearings; the live axle is bevel driven; the rear springing is novel, being on the A.F.S. helical suspension scheme, and it is expected that deliveries will begin some time next month in fulfilment of orders that have already been booked. Information about the price is not available yet.

From Bristol also comes an entirely new light car idea in a three-cylinder, radial air-cooled engine, with bore and stroke measurements each of 75 mm., fitted to a vehicle which it is expected will scale 6 cwt. only, though at 2,000 crank-shaft revolutions a minute the engine is calculated to develop 16 brake h.p., which will be transmitted through a three-speed gearbox with shaft drive and spiral bevel back axle which will be without a differential. The manufacturers are the Cosmos Engineering Co., Ltd., which was formerly known as Brazil, Straker and Co., the manufacturers of the Straker-Squire car, of Lodge Causeway, Fishponds, Bristol. The producers regard this as a "stepping stone" type of car for those who want more than a motor cycle and side car, but who cannot afford the post-war costs of a car proper. Fuller information, however, will be needed by medical men concerning the performance of this and sundry other new types of cars in the hands of the public before they will be justified in buying for absolute reliability in daily service such relatively recent propositions.

DISPENSING WITH THE DIFFERENTIAL.

A.B.C. Motors also contemplate the production of a light car. It will be a friction-driven vehicle, with a four-speed and reverse gearbox and bevel-driven back axle. The gearbox details follow closely those of the A.B.C. motor cycle, but it will not be combined with the engine unit, the crank case being, instead, placed midway in the chassis. The conventional differential gear is dispensed with in the case of the back axle, which is undivided, the shaft passing from end to end of it and not being halved in the middle. There is one ball-bearing at either end of the shaft and one in the centre close to the bevel pinion, an arrangement which relieves the axle casing of so much load as to enable it to be die-cast out of aluminium. A frictionless damping device is incorporated, preventing the wheel from spinning unless there is very considerable difference between the torques of the two wheels. This light car proposition, dispensing with differential gear, is of theoretical interest in that in the case of an ordinary differential as soon as one wheel is free to spin there is no drive on the other, which explains why in those circumstances most cars are unable to start off soft ground. Indeed, a car without, is less liable to slip than one with a differential—a point that has been demonstrated several times in car racing; how these details will apply to standard practice in the hands of the public is, of course, among the new experiences

that will be gained after the war. Quarter elliptic springs are used fore and aft on the A.B.C. car, the back pair being fitted with subsidiary torque leaves. No shackles or other moving parts that need lubrication are furnished in connexion with the springs. A novelty in connexion with the steering gear is that there is no worm. It consists only of two spur wheels mounted on ball bearings, the smaller one being at the end of the steering column and meshing with the larger one, which is mounted on the arm that actuates the timing rod. Both wheels can be removed and reset so as to present new sections for engagement.

SOME OTHER CARS.

The 11.9 h.p. H.E. light car, planned to have a four-cylinder engine of 69 mm. bore by 120 mm. piston travel, dry plate clutch, four-speed gearbox and overhead worm-drive, does not fall to be discussed at the moment, in that it is still rather in the paper stage. Moreover, its sponsors, the Herbert Engineering Company, of Caversham, Reading, are not aiming at any notable mechanical novelty, or at cutting price.

The G.W.K. is a distinctive type of light car which was familiar for years before the war, and which will make its reappearance in a greatly developed form, though it presents the outward characteristics of more or less ordinary car practice. Nevertheless, the drive by friction discs will be retained. In order to obtain the reduction between the steering wheel and steering arm motion, a type of planetary gearing is placed at the base of the steering column. The pedals are now adjustable. The four-seater model has the engine placed under the bonnet in the orthodox way. The wheels are built on the disc principle, totally enclosing the drive of the rear pair both inside and out, thus facilitating washing. The wheels themselves are not detachable, but the rims can be taken off.

Another type of car that is driven by discs instead of through the ordinary gearbox is the Palladium, the post-war model of which is equipped with a two-cylinder, flat engine of 89 mm. bore by 107 mm. piston travel. The vehicle is made as a two and a four seater, and the aim is to sell it at under £200. It is expected that the first examples will be ready some time in June.

A new light car is to be made in Coventry by a concern called the Dawson Car Co., which has the benefit of the services of Mr. A. J. Dawson, who has been identified with the Daimler, Hotchkiss, and Hillman companies for the past fourteen years. The vehicle will be of 11.9 h.p. Treasury rating, having a bore measurement of 69 mm. and a piston travel of 120 mm., the comparative novelty, for this form of machine, being that tungsten alloy overhead valves will be employed. The equipment will include electric starter and dynamo, and the chassis will be more or less on orthodox lines. The notion of supplying the vehicle complete for a fixed sum, however, is adequate, in that a clock and speedometer are to be included. So far, six vehicles only have been produced.

(To be continued.)

SCHOOLS OF INSTRUCTION FOR THE SERVICES.

By CUTHBERT WALLACE, C.B., C.M.G., F.R.C.S.

PRACTICE makes perfect; indeed, practice is needed to maintain even a mediocre standard in any profession. It does not matter how good an individual may be in any particular line when you first take him. Unless you provide him the opportunity of practising fully his profession, in a few years he will not only have failed to maintain the position whence he started, but it is possible that he will be at a lower level than that at which he commenced. While it can be admitted that the level at which a man starts makes a great difference in the service to which he is attached, it is not only the obtaining of the man of high average that is required, but there is the need to keep him up in his work. The necessity for obtaining good men has been recognized by all the public medical services of late. Unfortunately, to get them they have entered into a rather unseemly competition one with another, offering a few more shillings here and there to obtain what they want. On the other hand, one can only commend the efforts that have been made to get good men, as, for instance, by seconding a man while he is holding a house appointment and giving specialist pay. More,

however, is wanted. In the Services men have to be dispersed and go over the world. One man will be in a good station where he will have plenty of work and will use his opportunities; the second will be in a place where, for no fault of his own, he cannot keep himself up to a proper level by practice; and there is a third man, more important possibly than the others, who does not care so much about his profession as about the opportunities the Services offer of seeing the world. Now all these men at some time or another will come home and require periods of study. The keen man must be given ample opportunities of bringing himself up to date, and the less keen man must be compelled to make himself efficient. This is already provided for to a certain degree in the hospitals of the Services, and by the classes that are held at the various metropolitan hospitals. The training and instruction in such things as public health and tropical diseases, and laboratory work, are sufficient and reach a high standard. The opportunities for clinical study in the hospitals of the Services are largely limited to that afforded by young males. There may be some difference of opinion as to whether the courses which are given in the metropolitan hospitals are satisfactory. It very much depends upon whether certain hospitals can make the necessary arrangements for ward teaching and special classes; the opportunities must vary from year to year. This teaching is more or less of a post-graduate nature, but it is most probable, even if it be granted that the post-graduate training is good, that many of the officers would gain much more if they first went through a course of training such as senior students follow as clerks and dressers. The opportunities for this are not available in London, and most probably will not be available in any teaching school.

Could not some improvement be made in the courses so as to enable men in the Services to get a more intimate knowledge of disease? Now if a man is to learn medicine properly he must go back to a school where all branches of medicine are taught. Therefore it is necessary that the Services should possess general hospitals of their own, where every kind of disease is encountered and treated. The present seems a grand opportunity for the Services acquiring in different parts of the country these general hospitals. It is obvious that hospital accommodation must be extended. It is most probable that the Poor Law hospitals and infirmaries will become active working hospitals. Why should not the different Services take over some of these, staff them with their own men, run them as a hospital and as their medical school? It might be said that the Services so far have produced no conspicuous teachers in the ordinary subjects of medicine and surgery, but the reply to this is that they have never tried to, and they have never given their men an opportunity of fitting themselves for such a post. That the men exist or could be got is proved by the fact that in preventive medicine, pathology, and tropical medicine the Services have produced men of world-wide renown, and there is no reason to doubt that if opportunities for the practice of medicine and surgery were afforded, as great men in medicine and surgery would arise.

Now, how would this scheme work? There would be a general hospital, staffed by professors, officers of the Services, heads of their own departments; the hospital would be complete. When officers come back from foreign service and require refresher courses there would be splendid opportunities of acquiring knowledge open to them. The younger men or the men who have been longest away could enter the wards as the professors' dressers and clerks, while the older and more senior men, men who have been practising medicine or surgery in foreign parts, could as assistants to the professors gain the knowledge they require. The opportunities which would thus be offered would be infinitely greater than those existing at present, and it is only by a man getting down to his work that he will ever really learn. To raise the professor it will have to be recognized in the Services that a man who wishes to stick to his last and practise his profession should have as great advantages as those which follow the course of administration. If this is granted and such a hospital comes into existence, it will mean that the Services will have professors of whom the country and they can be proud, and they will have schools where their men can be properly and adequately taught. After passing the college the post-graduate instruction in the teaching school will still be available for the specialist.

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THE SELECTION OF RESEARCH WORKERS.

In a recent issue we attempted to define the characteristics of research workers and the general type of State organization best fitted to encourage the prosecution of scientific research in this country. At present we shall comment upon a special aspect of the subject which is of some practical importance.

It is commonly held that general ability will command success in any line of life, a proposition illustrated by the laurels gained in externally diverse careers by the scions of gifted stocks recorded in many of Galton's writings. How far a fund of "general ability" is capable of diversion to scientific research, whether some special quality akin to the artistic sense be not involved, we need not seek to determine. But it is necessary to remark that, merely as a career, the life of a research worker can never offer the material attractions, the pomps and vanities of the world, which reward the efforts of a successful barrister, soldier, or even a physician. We may indeed hope for some raising of the low standard of public morality—to which Sir Ronald Ross has so properly drawn attention in the past—in accordance with which men of science are expected, as a matter of course, to place their knowledge at the disposal of the State without reward, while lawyers and business men receive, equally as a matter of course, large honoraria. But we need not flatter ourselves that the President of the Royal Society will ever fill so large a space in the eyes of his contemporaries as a Lord Chancellor or an Archbishop. It is therefore certain that the able man to whom popular esteem and immediate power are sweet will not be tempted to forsake the beaten tracks by any salaries a state research organization will have to offer. The man of science will always be able to say, with Burke, "I know the map of England as well as the noble lord, or as any other person, and I know the way I take is not the road to preferment."

But, on the other hand, the very disadvantages of the life, from the standpoint of the more energetic and ambitious man of ability, are attractions to the "safe" man, the unadventurous plodder. To him the prospect of being a researcher in a state department offers the security of the civil service with that faint gratification of intellectual vanity which being dubbed an "expert" conveys to most men. A national endowment of research ought not to mean a provision of incomes for the laboriously dull, and it is well to consider how this evident risk is to be avoided.

The best of all safeguards is to allow the greater part of the work to be done in the universities. No rule is without exceptions; charm of manner, social virtues, bias the estimate of intellectual ability in all classes; but the opinion of contemporaries engaged in similar but not identical pursuits, and brought into intimate personal contact with the investigator either as colleagues or pupils, is the soundest criterion we have of merit; this test is applicable hardly anywhere but in a university. When we add that no scientific teaching worthy of the name is possible without the

stimulus of research, of contact with truth not yet crystallized, and that an inadequate grasp of scientific method, as distinct from mere technical facility, characterizes many of our younger graduates, the case for distributing the endowment of research over as wide a field as possible becomes overwhelming.

But the fact still remains that, in any national system, room must be found for laboratories or institutes which are not appanages of independent corporations. Some researches will involve the use of special apparatus which may not be required permanently in any one university; or, again, some classes of inquiry might be important in the general interest of research but ill calculated to attract continuously the same investigators. To take an illustration: the development of research into human nutrition implies the existence somewhere of a well stocked and staffed special library, of a clearing house of statistical information, and of such laboratory accommodation as would suffice for the training of field workers, and the carrying out of some routine standardizing tests.

This establishment would perform a common service for all the universities; it would be invidious to locate it in any one of them, and desirable to establish it in the metropolis. The same remark applies to other main branches of scientific research. But, directly this is admitted, we have again the problem of the mediocrities eager for permanent posts. We think the research organizer might profit by the example of the army. The permanent staffs of the central laboratories or institutes should be confined to very small dimensions, perhaps to one or two persons in each case—apart from the merely clerical staff—and the bulk of the work be undertaken by investigators seconded from the universities. In other words, the central departments might be treated as staff colleges, those working in them being compulsorily returnable to the universities after a longer or shorter period. Were this plan carried out the new State departments could not become homes of mediocrity, nor would the schools be robbed of their best investigators. Such a system would also provide for the case of the unattached worker, not swept up in the university net, and although we may expect, with the development of university education, that these cases will be rare, there are likely to be sufficient in this generation to need special machinery.

GRADUATE INSTRUCTION IN LONDON.

SIR WILMOT HERRINGHAM'S second contribution to the *St. Bartholomew's Hospital Journal* on medical education in London deals with "post-graduate study." To the first, in which he advocated the introduction of the professorial system, we drew attention on February 15th. The second article is less convincing, no doubt for the reason that the subject is more difficult to handle with confidence, because probably in England generally, certainly in London, the organization has to be built from the foundations.

He starts by affirming that post-graduate instruction in London is "hopelessly deficient." No one, we imagine, will dispute this, nor his opinion that "its extension is greatly to be desired." By way of finding out what it is that London wants, he enumerates the attractions Vienna, and afterwards Berlin, possessed when they were drawing medical graduates from all over the world. He notes, first, the coaching or revision classes given by teachers of the privat-docent type—that is, by men with their foot on the first rung of the ladder leading to the professorial chair. A second attraction was afforded by the

opportunities for gaining facility in the use of the laryngoscope, otoscope, ophthalmoscope, and other clinical instruments. A third was the possibility of obtaining appointment as assistant to a professor of surgery, thereby gaining a large experience in operations. A fourth attraction was the chance of obtaining a place in a professor's laboratory, where the actual work given to the novice might be very monotonous, but where he had the run of the laboratory and learned the methodical system of work for which the German was justly famed. A fifth attraction was that the professors had taken the trouble to learn to lecture, although they never attained the excellence of the French. Sir Wilmot Herringham declares that in London—perhaps he means St. Bartholomew's—he has heard lecturers not fit to talk to the parish pump.

So much for our defects. Our guide becomes less surefooted when it comes to the remedies. He asserts that general hospital schools are not the places for graduate teaching, though he believes that if professorial units are established a stranger with proper credentials might have a good chance of obtaining a place as assistant in a clinical or pathological laboratory. Coaching classes, which practically do not exist in London, though not a high, are, he considers, a useful form of education for a man with a limited time in which to rub up his knowledge in some particular subject. He suggests also that resident medical officers, registrars, and even assistant physicians, ought to be allowed to hold such classes in the hospital buildings. He, however, relies for the establishment of post-graduate teaching in London on the special hospitals.

To elucidate this point we may make a brief excursion into history. The motives which inspired the founders of special hospitals were not always the same. In the case of the maternity hospitals, of which three in London and several in the provinces date from the middle of the eighteenth century, they were doubtless purely benevolent. In the majority of instances special hospitals owed their origin to the efforts of medical men, of whom some had no place on the staff of a general hospital but wanted the experience hospital practice can alone provide, while others, though on the staffs of general hospitals, desired a concentration of patients of a particular kind permitting study of the special department in which they were interested. Ophthalmology was the first specialism to establish itself in this way—at Moorfields in 1804, at Manchester in 1814, at the Westminster near Charing Cross in 1816, at Liverpool in 1820, and at Newcastle in 1822. The great seed time of the special hospitals was the middle of the nineteenth century, when specialism was disdainfully regarded by most teachers in the medical schools. A great change in attitude has occurred during the last generation. Something was due to the public who insisted on having specialists, but the chief reason was the growing complexity of every department, so that no man could any longer pretend to be expert in them all. Thus we now find all large general hospitals with special departments, and the Royal Society of Medicine with thirteen special sections. If the school hospitals had been quicker to realize what was happening the demand for the special treatment special hospitals have given might have been satisfied. Whether this would have been good for the progress of medicine is a matter upon which opinions may differ, but it would undoubtedly have simplified the position to-day, for one effect of the recognition of the need for specialization in practice has been that the chief special hospitals are now largely staffed by men who are members also of the staff of a school

hospital. It is to call attention to this that we have digressed, for it affects Sir Wilmot Herringham's argument.

The view that general hospital schools are not the places for graduate teaching used to be very generally held, but it would appear that it does not now meet with so much acceptance. In making plans for the post-graduate courses which are about to be resumed in Edinburgh the committee has arranged to pool the hospital resources. The courses will be held at the Royal Infirmary, the Royal Hospital for Sick Children, the Royal Victoria Dispensary for Tuberculosis, and the Royal Maternity Hospital, and the members will hold temporary appointments as assistant demonstrators in the practical courses, and as clinical assistants in the wards and special departments. We observe also that in the emergency facilities provided in London through the Fellowship of Medicine (p. 281) all the medical school hospitals are included as well as a like number of special hospitals. It is an open secret that a scheme for graduate medical education on a permanent footing in London has been under consideration for some years, and we understand that at a recent meeting it was approved in principle and returned to the individual bodies for their sanction. We hope to publish the scheme shortly, but meanwhile it will be sufficient for our purpose to say that it rests upon graduate medical instruction given in the existing London undergraduate medical schools. The instruction offered will include general courses and special courses, but by the latter, we understand, not courses in specialties as ordinarily defined, but in certain classes of disease, of which disorders of digestion may be given as an example. After attending such a special course the graduate would be eligible for research work in the subject or to hold a post as clinical assistant. The last point is taken also by Sir Wilmot Herringham, and if the suggestion is not without precedent the plan has not hitherto commonly been carried out. Some, indeed, are so strongly impressed with the necessity of opening clinical appointments in London to stranger graduates that they would favour the establishment of a special graduates' hospital, at which all the resident and junior appointments would be held by the visitors to London. The idea is contained in a very interesting note by Mr. Cuthbert Wallace on "Schools of Instruction for the Services," which we publish at p. 283. The need is no doubt greater in the military services and those of the Crown Colonies, but it is felt also by men who have gone early into practice in districts in this country where opportunities for seeing hospital work are not easily obtained.

We should like to see these three points more fully considered—namely, the desirability of arranging graduate courses at teaching hospitals, the best way of utilizing special hospitals, and the opening of clinical appointments to graduates. Sir Wilmot Herringham mentions the need for organization, but dismisses the subject rather airily. It has, we understand, engaged the very serious attention of those concerned in promoting the establishment of a permanent organization in London to provide a system of instruction for medical graduates. We believe that the conclusion reached is that the proposed graduates' association will need a building in central London, containing offices for the secretarial staff, a library, and recreation and luncheon rooms. At this centre the business of the proposed permanent association would be conducted, fees would be received and paid, and information supplied to graduates attending or desiring to attend the courses. To

establish such a central institute a considerable sum of money will be required, but it seems to be thought probable that this will be found.

THE MINISTRY OF HEALTH BILL IN GRAND COMMITTEE.

CONSIDERATION of the Ministry of Health Bill in Grand Committee of the House of Commons will begin next Tuesday, and will be continued as circumstances allow. Sir Archibald Williamson will be chairman, and among the medical members attached for this bill are Sir Watson Cheyne, Sir William Whitla, Sir R. Woods, Lieut.-Colonel Nathan Raw, and Major A. C. Farquharson. The usual course is for the chairman to take the decision of the Committee at its first meeting as to the number of sittings to be held during each week until the work is completed—that is, until the bill is ready to be reported to the House. Under the new scheme of procedure for accelerating the progress of urgent legislation this Committee (and other Grand Committees) may carry proceedings far into the afternoon. The procedure scheme, indeed, provides that the sittings of the House may be suspended if they be found incompatible with the simultaneous progress of several Grand Committees on various bills, but this suspension will not come into force until after notice has been given in the House; Mr. Bonar Law, however, has expressed the hope that such a course may be unnecessary. The intention is that bills shall be advanced through Grand Committees as quickly as is reasonably possible, even if the old practice of the House in the conduct of its business has to be varied. It is hardly necessary to point out that a bill will have the consideration of the whole House on report, and that amendments of detail can be submitted there by legislators who have not served on the Grand Committee.

DISCUSSION OF THE MINISTRY OF HEALTH BILL.

A MEETING arranged by the Marylebone Division of the British Medical Association to discuss the Ministry of Health and the attitude of the medical profession in relation thereto, will be held at the house of the Medical Society of London, 11, Chandos Street, Cavendish Square, on Wednesday next, March 12th, at 5 p.m. The chair will be taken by Major McAdam Eccles, and the discussion, which it is intended shall be informal, will be opened by Major-General Sir Bertrand Dawson, G.C.V.O., M.D. All members of the medical profession are invited to attend. The Society of Medical Officers of Health has issued a memorandum criticizing the inclusion in the Ministry of matters outside the scope of national health, and the omission of others which properly come within it. Under the first head it objects to the inclusion of the powers and duties of the Insurance Commissioners not strictly relative to health; under the second it criticizes the failure to transfer the powers of the Board of Education as to inspection and treatment of school children and young persons, of the Ministry of Pensions with respect to the health of disabled soldiers, and the powers of the Home Secretary under the Lunacy Acts and the Mental Deficiency Act. It also desires the inclusion of the Home Office responsibilities with regard to the sanitary condition of factories, the prevention of industrial diseases, the work of factory surgeons, and the Inebriates Act; those of the Board of Trade as to the health of seamen and emigrants, those of the Board of Agriculture touching dairy and farm produce, and those of the Privy Council as regards the General Medical Council and the Pharmaceutical Society.

DENTAL TREATMENT AND THE SHORTAGE OF DENTISTS.

WE gave last week an account of the recommendations of the Departmental Committee appointed by the Lord President of the Council to inquire into the extent and gravity of the evils of dental practice by persons not

qualified under the Dentists Act. The report includes certain recommendations of general interest to the profession, but for the moment it is only possible to touch upon a few salient points. After holding twenty-seven sittings, hearing twenty-seven witnesses, among whom were Professor Sidney Webb and Mr. W. C. Anderson, a labour M.P., and considering a large mass of documentary evidence, the Committee unanimously came to the conclusion that no effective remedy could be found for the gross abuses which had crept in short of the complete prohibition of practice by unregistered persons. This conclusion gains in significance when the constitution of the Committee is examined, for as to one half it consisted of lay members, and there were not wanting upon it some whose known general opinions render it a fair inference that they would need to be convinced by cogent evidence before recommending such a step. The conclusion is gratifying to us, inasmuch as for years past we have consistently urged that prohibition of practice rather than mere restriction of the use of titles is the only logical course to be taken in medical or dental legislation; in its adoption we lag far behind the majority of the British Dominions and of foreign countries. But in making this recommendation the Committee was faced with the difficulty that Parliament could not be asked to make this departure from British precedents unless a number of registered dentists adequate to meet the requirements of the entire population either existed or could speedily be provided. It was abundantly clear that the existing *Dentists' Register* did not afford a sufficient number; it became inevitable, therefore, to advise the inclusion in a *Register* of some at least of those who had, without breaking the letter of the law, engaged in practice without any qualification. Apart from the undeniable fact that under the present state of the law these persons had acquired vested interests, it was thought that by requiring that they should have been in practice for five years some measure of competence would probably be secured, and that the recognition of these men combined with the closing of the door against future irregularities was a desirable compromise. To a certain extent, no doubt, this is setting the clock back, but when the Dentists Act was passed in 1878 all persons then in practice—and the claims of some of them to being in practice were of the most shadowy description—were admitted without the imposition of any limit of time. Even apprentices obtained admission to the *Dentists' Register* under the conditions then laid down—a very different thing from a five years' experience, whatever its exact nature. Into sundry provisions for opening an easier road for persons connected with practice without fully satisfying the five year requirement we need not enter, but it was recommended that, coincidently with the closing of the door, there should be a large extension of public dental services—a matter already in the air—so that dental treatment should be available to all. And further, that scholarships should be provided from public funds to enable those who could not otherwise have afforded it to take the education prescribed. The Committee recommended that a new Statutory Board should be set up to administer any Act drafted on the lines of the report. The majority of members of this board should be dentists, but it is a sign of the times that a certain lay representation upon it is to be secured, partly on the ground that the Act being for the public weal, the public should be represented upon any body formed for its administration. Whilst self-government of the profession is thus provided, a measure of control is to be left in the hands of the General Medical Council. Many other matters of general interest, such as the conduct of practice by limited liability companies, length of curriculum, etc., are dealt with, to some of which we may recur at a future time. The next step lies with the Government. It is hoped that Lord Curzon will introduce a bill or that the Government will at the least give to a bill their whole-hearted support, without which, in these days, the prospect of success in Parliament is small.

THE UNIVERSITIES AND THE EXCHEQUER.

We are indebted to the Universities Bureau of the British Empire (Imperial Institute, S.W.7) through its secretary, Dr. Alex Hill, for a full authorized report of the speeches made when a representative deputation from the British Universities and University Colleges was received by the Chancellor of the Exchequer and the President of the Board of Education last November. The Exchequer grants for colleges and medical schools in England and Wales have recently amounted to £300,000 a year, and the main object of the deputation was to represent the need for Parliamentary grants on a much more generous scale. Sir Oliver Lodge said that the State grants in America to each of five universities equalled £300,000, and ranged up to £500,000 a year. The income of each of seventeen universities in the United States was over half a million sterling, and in one case was one million and a third. The total income of all the universities in the British Isles, including Oxford and Cambridge, was estimated at 2 millions; in America the estimate was 20 millions. One of the main reasons given for an increased grant was the necessity of raising the salaries of professors and teachers. As Sir Alfred Dale said, the professor should be set free as far as possible from the burden of excessive anxiety on the one hand, and the strain of excessive work on the other. What is true of him is true of the members of the assistant staff, who should be growing up to hold higher positions. At present the junior staff are underpaid, overworked in routine teaching, and therefore deterred from research. Sir Bertrand Dawson put forward the claims of medical education, which, he said, for years had been inadequate, because starved. The sciences on which medicine rests, he pointed out, have been growing in number and extent every year, needing a larger and increasingly skilled staff. Each new discovery added to the expense of teaching medicine, and so made it more dependent on outside financial aid. As an instance he took abdominal disease. Formerly investigation would be limited to clinical examination; now it was necessary to examine the blood and excreta, electrical instruments were needed for accurate investigation and a radiographic department for other observations. In other words, the staff and equipment required to investigate and teach had been multiplied by three, and in a few years the chemist would come into his own, and then the staff would be multiplied by four. The wonder really was that medical education in this country was so good. Among the doctors in this country there were talent, originality, ability to teach, and devotion to high ideals, equal to all countries, and beyond most. The English system of teaching medicine was fundamentally the best, but the teachers were inadequate in number, either underpaid or not paid at all, and devoid of proper equipment. The Chancellor of the Exchequer made a sympathetic but non-committal speech. He, however, assured the deputation that the attitude of mind embodied by Mr. Gladstone, which Mr. Acland had described in a letter read at the beginning of the interview, had passed away, and that he entirely agreed with the view that money judiciously spent by the state on education would be repaid. One specific statement he did make: it was that unless the salaries paid by the universities were sufficient to enable men to devote themselves to their work without anxiety over money their usefulness would be greatly hampered. But he added that while the Government realized the importance of university work, it was subject to other demands and other considerations. Still such proposals as were put forward by the President of the Board of Education would be considered by the Government at least sympathetically. Mr. Bonar Law made no statement on the point whether grants should be made for capital expenditure as well as for upkeep, and Mr. Fisher, in his brief reply, was equally reticent, though he spoke of the

necessity of much more liberal assistance from the State to the higher learning in this country. The principle that medical education is included in this definition has been recognized by the Board of Education for the last ten years at least, and the grants it makes to medical schools have increased in number, though the amounts have remained very small. We hope, not without some good grounds, that one result of the deputation and of the views on medical education in London officially expressed in the recent *Memorandum* of the Board, will be the grant by Parliament of financial assistance on a scale which will enable the medical schools to recapture the position as a medical centre which London is entitled to hold.

THE RED CROSS IN PEACE.

INTERNATIONAL Red Cross societies are organized for war work, but it needs no argument to establish the proposition that they could do a great deal of useful, and indeed essential, work in peace. A committee of the Red Cross societies of the United States, France, Great Britain, Italy, and Japan, has been formed, with Mr. Henry Davison, of the American Red Cross, as chairman. At the request of this committee, the International Red Cross at Geneva has summoned a conference of the Red Cross organizations of the world, to meet at Geneva thirty days after the declaration of peace, "to formulate and to propose to the Red Cross societies of the world an extended programme of Red Cross activities in the interest of humanity." We learn from the *Times* that in an address to the international press representatives in Paris, Mr. Davison stated that it was expected that from this conference would emerge an international organization with a very wide scope, so wide indeed that it would include all kinds of public health activities. A preliminary meeting is to be held shortly at Cannes to formulate a programme to be submitted to the conference in Geneva. The criticism which occurs is that an attempt may be made to do too much. Sir Arthur Lawley, speaking for the British Red Cross Society, agreed that it was desirable to broaden the base on which the whole structure of Red Cross activities has been built up, and to retain the services of those voluntary workers who have in such a wonderful spirit of self-sacrifice worked for the Red Cross during the war.

THE FUTURE STANDING ARMY.

THE white paper issued last week, in anticipation of the introduction of the army estimates by the Secretary of State for War on March 3rd, stated that it was estimated that the maximum number of troops of the British Empire, including all Dominion and Indian troops, other than those in the Dominions and in India, serving with the colours on and after March 31st, 1919, would be 2,500,000. The total would be in process of reduction and should fall rapidly to the minimum of 952,000. Of the grand total 127,000 belong to the Indian army. The distribution of the troops is also shown. In the Army of the Rhine, including troops in France and Belgium, there were 403,600; in Italy, 10,600; in Bulgaria, Turkey, and the Caucasus, 100,500; in Egypt and Palestine, 103,000; in Mesopotamia and Northern Persia, 94,300; in the home and colonial establishments, including troops in Russia, 240,000. Troops belonging to the Indian army appeared to be serving only in the near East, Egypt and Palestine, and Mesopotamia and Northern Persia. The white paper states that until the size and organization of the future army have been settled it is not possible to give details of establishment by arms of the service, units and ranks. Mr. Churchill stated, in answer to a question on March 4th, that at the present time the proportion of medical officers in the army was 1 to 314 of all ranks. In October, 1918, as stated last week, the number of medical officers serving was 13,152; but in the table then published (p. 257) there was an error, due

to the fact that the words "and T." were inadvertently displaced into association with the Territorial Force. Officers with temporary commissions were included in the return of regular officers. The figures should have been given as follows:

	August, 1914.	October, 1918.
Regular and T.	1,279	10,289
T.F.	1,889	2,863
Total	3,168	13,152

A similar error was made with regard to other ranks.

THE EPIDEMIC OF INFLUENZA.

For the week ending March 1st, 3,850 deaths from influenza were returned from the ninety-six great towns, an increase of 804 deaths upon the figures of the previous week. The deaths in London were 808, an increase of 155. In the North of England, Newcastle has passed its maximum, the deaths having fallen from 163 to 94; Liverpool is nearly stationary, 196 deaths as compared with 188; Manchester, Salford, and Leeds with 196, 96, and 130 (the previous week's figures were 130, 57, 82) are still increasing. In the Midlands, Leicester reports a substantial decline (from 61 to 20), Nottingham and Derby small rises (an increase of 10 in Nottingham and of 8 in Derby), and Birmingham a substantial increase, from 84 to 138. Portsmouth is the only city in the south recording a substantial increase (from 41 to 64). It appears that both in the great towns as a whole, and in London in particular, the rate of increase is diminishing. Thus, expressing each week's deaths as a percentage of those recorded in the previous week, beginning with the week ending February 8th, we have for the great towns 222, 226, 223, 126, and for London 171, 276, 239, 124. The inference is that we are nearing the maximum, and that a decline next week is not improbable. If so, the third wave of the epidemic has, fortunately, not nearly attained the height of its predecessor, nor even the more modest proportions suggested by a comparison of the first two weeks of its progress. It remains to be seen whether the decline will be complete.

DR. JOHN C. McVAIL will deliver the Milroy Lectures before the Royal College of Physicians of London on March 13th, 18th, and 20th; his subject is half a century of small-pox and vaccination. The Goulstonian Lectures, on the spread of bacterial infection, will be delivered on March 25th, 27th, and April 1st, by Dr. W. W. C. Topley, lecturer on bacteriology Charing Cross Medical School. The Lumleian Lectures, by Sir Humphry D. Rolleston, K.C.B., M.D., on cerebro-spinal fever, will be delivered on April 3rd, 8th, and 10th. The lectures will be given at the College, Pall Mall East, at 5 p.m. on each day.

Medical Notes in Parliament.

Number of Army Medical Officers and Nurses.—In answer to Mr. Lyle, on March 4th, Mr. Churchill stated that there were 11,193 doctors and 23,931 nurses employed in the army on November 11th, 1918, and there were serving at the present time 9,593 doctors and 20,141 nurses. The proportion of doctors in November was 1 to 318 all ranks, and is now 1 to 314 all ranks. The proportion of nurses in November was 1 to 148 all ranks, and is now 1 to 149 all ranks. The demobilization of doctors and nurses bore little relation to the demobilization of the army as a whole; it was dependent, at the bases and at home, on the discharge of the hospital population and, in the field, upon reduction of units and formations. A very large number of civil doctors and nurses who were employed in the

voluntary aid detachment hospitals now closed and had been released, were not included in the figures given. He was not at all satisfied with the rate at which demobilization of doctors was proceeding, and had given very strong orders that all efforts should be made to demobilize doctors at an increasing rate to make sure, now that the fighting was stopped, that there were not a great number of medical men waiting abroad who were more urgently needed at home, especially in view of the epidemic of influenza.

Diminishing Number of Panel Doctors.—Major Astor, in a written reply to Sir Kingsley Wood, on March 4th, said he was unaware of any case in which an insurance practitioner had a list of over 6,000 insured persons for whose treatment he was responsible single-handed. Preliminary discussions with representatives of the medical profession preparatory to a general revision of the conditions of medical services for the insured had been taking place for some time. The authority for the payment of the £250,000 bonus which the Insurance Commissioners had agreed to give to the doctors on the panel list was given under the Appropriation Act. The payments now being made were in respect of the calendar year 1918 only. No undertaking had yet been given that similar payments would be made for the year 1919, but financial provision for that contingency would be proposed in the Parliamentary estimates for 1919-20. There had been a continuous diminution in the number of panel doctors since the beginning of the war, but it must be remembered that, besides the large numbers of insurance doctors serving with the forces, the normal diminution of doctors by age, retirements from practice, and by deaths during the five years had not (as in peace time) been made good by new entrants, because newly qualified doctors have been taken into the military forces throughout the period. It was believed that the number of doctors actually carrying on insurance practice in England on October 1st, 1918, was some 3,800 less than at the end of 1914. Within the last few days his department had had further conference with the Ministry of National Service, which was in communication with the War Office. The steps to expedite the release of doctors from the army had been stated by the Secretary of State.

National Insurance: Medical Allowances.—In a written answer, on February 26th, to Mr. Kenyon, Major Astor said that the war allowances made to medical officers of institutions approved under the National Insurance Acts depended upon two factors only. These were: the amount of the individual practitioner's professional income and the rural or semi-rural nature of the area in which his practice lay, as affecting the amount of travelling involved.

Local Government Board and Army Medical Officers.—Major Astor stated on February 27th, on a question by Brigadier-General Croft, that a list was kept at the Local Government Board's offices of medical men who had served in the R.A.M.C. Naval or Air Force Medical Services and who wished to apply for medical employment on the board. Due consideration would be given to such officers when medical appointments were made. Mr. Wardle, in a written reply to Brigadier-General Croft, stated that the Ministry of National Service was responsible for the demobilization of qualified medical men. Their names were registered, and they were informed of opening for Government or for private appointment through the Appointments Department of the Ministry of Labour.

Women Doctors in the Army.—Asked by Mr. Raper whether the Government would support the claim of women doctors serving under or attached to the War Office for the rank and privileges to which they were entitled, Mr. Churchill said, on February 27th, that the general policy of the Government, in seeking to remove inequalities between men and women, did not commit them to immediate action in every sphere, and he was not prepared to introduce legislation on the point during the present session.

Patent Medicine Advertisements.—Sir Henry Norman asked the Home Secretary on February 27th if his attention had been called to the increase of advertisements of patent and proprietary medicines of the classes described as contrary to the public interest by the report of the Select Committee on Patent Medicine, 1914; if a bill to give effect to the recommendations of that committee had been drafted; and if the Government intended to introduce such a bill. Major Astor said that the advertisements referred to as contrary to the public interest in the report of the Select Committee of 1914 were under consideration along with the whole question. By the Venereal Disease Act, 1917, effect was given to the recommendation in paragraph 57 (3) of the report of that committee, that advertisements of medicines and medicaments for the prevention or cure of venereal diseases should be prohibited. The whole question was under consideration.

London Mental Hospitals.—On an appeal by Sir Cyril Cobb on behalf of the London County Council to the War Secretary for the release of three London County Mental Hospitals at Epsom from occupation by military patients, Captain Guest said that the Manor Hospital would be closed from March 15th. Every effort was being made to close the other hospitals as early as possible, but sick were still being returned from France at the rate of a thousand a day. The Maudsley Hospital building was a very busy neurological centre, and so far it had been difficult to reduce its activity. Efforts, however, were being made to find another hospital to which the centre could be removed.

Treatment of Incipient Mental Disorder.—Captain Loseby asked the President of the Local Government Board, on February 27th, if he could encourage county and borough councils, and other local authorities, to supply or aid the supply of homes for the recovery of early and uncertifiable mental cases, and secure that, for the encouragement of voluntary applications, such homes should be kept entirely apart from lunacy administration. Major Astor replied that the matter would be reviewed with cognate questions in connexion with the establishment of a Ministry of Health.

The Training of Disabled Officers and Men.—Mr. Parker, on February 27th, said, in reply to Mr. Pennefather, that the Government scheme for training officers and men of good educational promise would, it was expected, be in full operation by May 1st. It would be possible from an early date to make immediate payment of grants to candidates whose cases were of special urgency. Sir James Craig explained to Lord Henry Cavendish-Bentinck that in the division of training functions between the Ministry of Pensions and the Ministry of Labour, men who still required medical care and attention, or whose disablement was such as to make it undesirable that they should take part in ordinary industrial life—as, for example, the severely disfigured—would be trained by the Ministry of Pensions.

Special Grants for Tuberculosis Treatment.—On the motion for a supplementary grant not exceeding £25,000 for cost of extending sanatorium benefits under the Insurance Act, Major Astor explained that this expenditure was independent of the treatment of ex-soldiers, the cost of which was met by the Ministry of Pensions and through the Insurance Fund. The additional £25,000 meant an additional £50,000, because every point out of the public exchequer was supplemented by one out of local rates. So far as the Treasury was concerned, no limit was put to the amount of money available. The deficiency of accommodation was due to a certain extent to the lack of institutional facilities. At present the Local Government Board was doing all it could to enlarge the accommodation. He did not profess that he was satisfied with the provision now made.

Rabies in Devon and Cornwall.—On February 27th the Parliamentary Secretary to the Board of Agriculture and Fisheries (Sir A. Griffith-Boscawen) made a further statement as to the outbreak of rabies in Devon and Cornwall. The statement that it was introduced into this country by a dog brought by aeroplane was mere rumour; it was far more likely to have been introduced at a port. It began on August 19th, and a case has been reported within the last few days at Yelverton, between Plymouth and Tavistock, so that it could not be hoped that restrictions would be removed for less than six months.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

CAPTAIN J. CAMERON, R.A.M.C.(S.R.).

Captain John Cameron, R.A.M.C.(S.R.), died on February 18th, aged 32. He graduated M.B., Ch.B. Glasg. in 1914, and was gazetted to the R.A.M.C.(S.R.) in April, 1914. While on leave at Glasgow he contracted influenza and pneumonia, which proved fatal after a week's illness. During his training at Aldershot in May, 1914, a heavy ambulance wagon capsized and fell on his knee, which confined him to bed for two months. In March, 1915, he went to France, where he remained near Poperinghe and Ypres for a year as second in command of a field ambulance. He subsequently suffered from duodenal ulcer with melaena, etc., and on recovering was sent to Edinburgh for recruiting purposes, where he acted as president of a board. He was afterwards sent on various duties in different parts of the British Isles, and after the signing of the armistice went to Cherry Hinton Military Hospital, Cambridge, where he took charge of specific cases. He was a man of great ability and enthusiasm.

CAPTAIN A. M. PRYCE, R.A.M.C.

Captain Arthur Meurig Pryce, R.A.M.C., died of bronchopneumonia at No. 35 General Hospital, Calais, on February 21st, aged 41. He was the younger son of the late Rev. Shadrach Pryce, Dean of St. Asaph, and was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1903, and at Middlesex Hospital, also taking the D.P.H. of the London Colleges in 1911. After filling the posts of resident medical officer of the Leeds Consumption Sanatorium, of assistant medical officer of Leeds City Fever Hospital, and of assistant medical officer of health at Leicester, he became demonstrator of bacteriology in Leeds University. He took a temporary commission as lieutenant in the R.A.M.C., in the Welsh Division Field Ambulance, on March 4th, 1916, and was promoted to captain after a year's service.

HONOURS.

A SPECIAL Supplement to the *London Gazette*, dated March 3rd, contains a list of awards and promotions for valuable and distinguished services rendered in connexion with military operations in Mesopotamia. The following medical officers receive the awards indicated:

C.B. (Military Division).

Lieut.-Colonel and Brevet Colonel Matthew H. G. Fell, C.M.G., R.A.M.C.

C.B.E. (Military Division).

Colonel Sebert F. St. D. Green, A.M.S.

Lieut.-Colonel (temporary Colonel) James H. R. Bond, D.S.O., R.A.M.C.

Lieut.-Colonel William B. Lane, C.I.E., I.M.S.

O.B.E. (Military Division).

Major (acting Lieut.-Colonel) George E. Cathcart, R.A.M.C.

Majors: John H. Brunsell, D.S.O., R.A.M.C., Hector L. Howell, M.C., R.A.M.C.

Temporary Major Maitland B. Scott, R.A.M.C.

Captains: Robert A. Chambers, I.M.S., John R. Harris, R.A.M.C.(S.R.), Cuthbert J. H. Little, R.A.M.C., John P. Mitchell, R.A.M.C.(S.R.), John J. H. Nelson, M.C., I.M.S., Cyril J. Penny, R.A.M.C.(S.R.), Hugh G. Robertson, R.A.M.C., Frank T. H. Wood, R.A.M.C.(T.F.).

Temporary Captains: William A. Cardwell, R.A.M.C., Llewellyn W. Davies, R.A.M.C., Gerald H. Davy, R.A.M.C., Gerald S. Marshall, R.A.M.C.

Military Cross.

Captains: Cyril R. Knowles, R.A.M.C.(S.R.), Sidney W. Rintoul, R.A.M.C.(S.R.).

Temporary Captain John A. G. Burton, R.A.M.C.

To be Major-General.

Colonel (temporary Major-General) A. P. Blenkinsop, C.B., C.M.G., A.M.S.

To be Brevet Colonel.

Major and Brevet Lieut.-Colonel C. M. Goodbody, C.I.E., D.S.O., I.M.S.

To be Brevet Lieutenant-Colonels.

Majors: T. G. F. Paterson, D.S.O., I.M.S.; E. A. Roberts, D.S.O., I.M.S.

To be Brevet Major.

Captains: A. G. J. MacIlwaine, C.I.E., R.A.M.C.; A. Shepherd, R.A.M.C.

Temporary Captain H. H. Raw, R.A.M.C.

THE following is the conclusion of the list published in the issue of March 1st of awards to medical officers in recognition of their "conspicuous gallantry and devotion to duty" in the field:

Military Cross.

Captain David Turnbull Richardson, R.A.M.C. (Aden.)

For conspicuous gallantry, initiative, and resource on October 22nd, 1918, when in command of an advanced dressing station, in evacuating casualties under heavy rifle fire. He has shown similar qualities on several previous occasions.

Temporary Captain (acting Major) George William Riddell, 129th Field Ambulance, R.A.M.C.

During the attack on Gouzeacourt, September 18th, 1918, he went up to the most forward aid post to organize the collection and evacuation of the wounded. Though dazed early in the action by the explosion of a shell near him, he carried on his duties untiringly through the day and night, often under heavy shell fire. His coolness and disregard of danger inspired confidence in the bearers, and it was largely owing to him that the wounded were cleared so expeditiously.

Captain Wesley McConnell Robb, C.A.M.C., attached 2nd Canadian Mounted Rifle Battalion, 1st Central Ontario Regiment.

On the Scarpe front from August 26th to 29th, 1918, shortly after zero, his advance dressing station was blown in by shell fire. Though dazed and partly buried, he immediately dug his orderly out. He then followed the battalion in the attack, organizing stretcher squads from prisoners, and evacuating serious cases with the least possible delay. He several times attended serious cases in the firing line.

Temporary Captain Henry Albert Roun, R.A.M.C., attached 3rd Dragoon Guards.

He attended to wounded under heavy shell fire on October 3rd, 1918, near Montbrehan, and on October 9th at Honechy. On both these occasions he set a fine example under most trying conditions.

Captain John Rowland, R.A.M.C.(S.R.). (Salonica.)

During operations against the Tassei, on the night of September 17th and 18th, 1918, he, although dangerously gassed, remained at duty and for three whole days worked incessantly rescuing our wounded, often in close proximity to the enemy's positions and under an intense fire. Despite much suffering from the effects of the gas he persisted in his efforts, and by his fine example and personal exertions was the means of saving scores of lives.

Captain Joseph Gregor Shaw, 12th Field Ambulance, C.A.M.C.

During the operations near Dury, September 2nd to 6th, 1918, he was in charge of stretcher-bearers. During the whole period he was constantly on duty. On several occasions he reconnoitred areas which were under heavy shell and machine-gun fire, dressing wounded and arranging for their evacuation in the open. In the vicinity of the windmill he came under heavy fire while attending to his duties. His work throughout was admirable, and his coolness in danger was an excellent example to his stretcher squads.

Lieutenant John Alexander Stewart, R.A.M.C.(S.R.), attached 10th Field Ambulance.

During the operations astride the Arras-Cambrai road on September 2nd and 3rd, 1918, he displayed conspicuous gallantry and unselfish devotion to duty, attending to the wounded under heavy fire with a disregard of danger that was a splendid example to all.

Temporary Captain William Joseph Edward Stuttaford, No. 2 Field Ambulance, R.A.M.C.

Near Maissemy, September 23rd and 24th, 1918, he organized and superintended the evacuation of wounded under heavy shell fire. His courage inspired confidence among his men, and his initiative and resource saved many lives.

Temporary Captain Arthur Macgregor Warwick, R.A.M.C., attached 1st Battalion, Royal Warwick Regiment.

After an attack on St. Servin's Farm on August 30th, 1918, when he had cleared his aid post of all casualties, he organized stretcher-bearers and got in without delay a large number of wounded who were lying out in front exposed to heavy shelling. He carried out similar good work the following day.

Captain (acting Major) Frank Wigglesworth, 2/3rd Field Ambulance, R.A.M.C.(T.F.).

On the night of September 11-12th, 1918, prior to the attack on Havrincourt, while under heavy shell fire he reconnoitred the routes of evacuation and set out his bearer posts. The next morning, during the attack, he supervised the whole evacuation of the wounded, and for the next two days he kept well forward, advancing his cars and posts as circumstances allowed, thus evacuating the wounded with the least possible delay. His disregard of danger set a fine example all round.

Captain Eric Melvyn Wyllie, No. 1 Field Ambulance, N.Z.M.C.

South of Cambrai from October 3rd to October 8th, 1918, during five days' operations, constantly exposed to enemy fire, he reconnoitred the country for the establishment of bearer relay posts and car posts. On October 4th, after establishing a car post at Mesnières he went forward under heavy fire and established a bearer relay post on the bank of the canal, afterwards going forward and supervising the evacuation of wounded from regimental aid posts.

Captain Harvey Gordon Young, D.S.O., C.A.M.C., attached 49th Battalion Canadian Infantry, Alberta Regiment.

During the operations east of Arras from August 26th to 29th, 1918, he was medical officer to the battalion, and throughout the whole operation followed up the attacking troops. Under heavy machine-gun and shell fire he attended to wounded, and organized stretcher squads of prisoners. He worked unceasingly, and it was entirely due to his personal energy and disregard of personal danger that all the wounded were evacuated before relief.

England and Wales.

LIVERPOOL MEDICAL INSTITUTION.

Jubilee Membership of Dr. Richard Caton.

A special meeting of the members, to which ladies were invited, was held on Thursday afternoon, February 27th, to tender the congratulations of the institution to Dr. Richard Caton on the attainment of his jubilee year of membership. The president, Mr. W. Thelwall Thomas, occupied the chair, and was supported on the platform by past-presidents of the Institution. The general secretary, Dr. W. Murray Cairns, read letters of their congratulations and regretting their inability to be present from, among others, Sir Dyce Duckworth, Bt., Professor C. S. Sherrington, F.R.S., and Major-General Sir Robert Jones.

The President reviewed rapidly the events of the past fifty years in which Dr. Richard Caton had played a conspicuous part. Coming to Liverpool at a period when the fortunes of the Liverpool Royal Infirmary School of Medicine were at a low ebb, Dr. Caton, with other well known medical men now passed away, succeeded in establishing the school on a firm basis. In 1880, owing to the exertions of the lecturers, the University College, as a constituent part of the Victoria University of Manchester, was founded, and on that there followed the present University of Liverpool, which Dr. Caton represented on the General Medical Council. When he became consulting physician to the Royal Infirmary he did not cease his interest in the advancement of learning, and in 1903 he was Lord Mayor of the city. In offering the congratulations of the members, the President expressed their sense of Dr. Caton's unfailing courtesy and amiability.

Dr. T. R. Glynn, in supporting the motion, said that Dr. Caton's achievements in medicine, in public affairs, and in archaeology were well known. He became lecturer in physiology in 1870, and retired as emeritus professor in 1892. He had imagination and invention, qualities essential for research. In civic matters Dr. Caton had rendered signal service, and was an ex-chairman of the Housing Committee. Dr. Glynn mentioned the discoveries of Dr. Caton in connexion with the temples and ritual of Asklepios, the medicine lore of the Egyptians, and Hippocrates and Cos.

Mr. Paul spoke of Dr. Caton as a friend and colleague whom he had known since 1875. When as Vice-Dean he was closely associated with Dr. Caton, then Dean of the Medical Faculty, what struck him most was Dr. Caton's patience, industry, and constant courtesy and consideration for others. Through life Dr. Caton stood out prominently as an emblem of hospitality, kindness, and sympathy. No temptation of professional rivalry or political advantage had ever succeeded in lowering his high ideals.

Dr. Macfie Campbell, who had sat on the same bench with Dr. Caton, listening to the lectures of Syme, Simpson, Hughes Bennett, and Christison, said that he then possessed the same geniality, trustworthiness, and sincerity characteristic of him to-day.

Dr. Caton, who was received with great applause, tendered his most sincere thanks for the congratulations, and extolled the great benefit that had accrued to the city in possessing the Liverpool Medical Institution. The medical history of Liverpool could be well summed up as the records of the Medical Institution. Without its fostering care the Liverpool School of Medicine would never have progressed as it had. In public health matters the Medical Institution was instrumental in providing hospital accommodation for infectious diseases. He praised the efforts of Dr. Hope, the present medical officer of health, and alluded in graceful terms to the work of the late Dr. Carter in connexion with inebriety, and the world-wide recognition of the surgical attainments of the late Hugh Owen Thomas. Speaking for himself, he associated with his membership friendships that had sweetened his life. It was when holiday making he was able to pursue his studies in archaeology, but even these were rendered more attractive by the companionship of friends animated by the same desire.

LOUSINESS AND SCABIES.

The Local Government Board for England and Wales has issued a memorandum on measures for the prevention of lousiness and itch (H.M. Stationery Office; price 1d. net) for the guidance of local authorities in giving publicity to the nature of the measures the public should take, and in making provision for preventing or curing pediculosis or scabies in schools or institutions, and securing the treatment and disinfection of members of affected households. It is stated that the Army authorities have, in the interests of the returning soldier as well as of the civil population, made thorough arrangements both abroad and at home for cleansing, bathing, disinfection, and the issue of clean clothes. The Cleansing of Persons Act enables any sanitary authority to provide apparatus for disinfection of articles of apparel or bedding free of charge, and in the metropolis there is power to enforce the cleansing of verminous inmates of common lodging-houses. It is pointed out that unless efforts to control scabies and pediculosis include the examination, and, when necessary, the treatment, of each member of the affected family and the disinfection of clothing, etc., they must be regarded as inadequate. It is wisely said that lousiness and itch should not be regarded as disorders of minor importance, but as constituting a serious menace to the health of a section of the population, especially children. The part played by lice in the spread of typhus fever, relapsing fever, and trench fever is well known.

Scotland.

CHAIR OF THERAPEUTICS IN EDINBURGH UNIVERSITY.

WHEN Sir Thomas Fraser resigned the chair of materia medica in the University of Edinburgh in April, 1918, the ordinance for the foundation of a chair in therapeutics distinct from that of materia medica had just been forwarded to the Privy Council Office. In May, 1918, Professor Arthur R. Cushny of the University of London was appointed as successor to Sir Thomas Fraser in the chair of materia medica, and now we understand that the University of Edinburgh will shortly consider applications for the recently established chair of therapeutics. The holder of the chair will have charge of wards in the Royal Infirmary, and he will be one of the staff of teachers of

clinical medicine. He will not, however, engage in private consulting practice. The separation of the work formerly performed by the occupant of the chair of materia medica into two parts will enable more attention to be directed to the study of pharmacology on the one hand and to the clinical aspects of therapeutics on the other, with, it is hoped, growing advantage to the undergraduates attending these classes.

MINISTRY OF HEALTH.

A meeting of the medical profession in Edinburgh and Leith on February 26th, summoned by the Division of the British Medical Association to discuss the proposed Ministry of Health, endorsed the resolution of the Royal Colleges of Physicians and Surgeons of Edinburgh, requiring that before enactment the bill should be submitted to the profession for consideration. The meeting also resolved:

That there should be a separate Ministry of Health for Scotland with direct access to Parliament.

That the Scottish Board of Health should contain not less than one-third of its members registered medical practitioners not holding any other appointment under the Ministry.

That there should be a Medical Advisory Council elected by the profession itself, to which all matters directly or indirectly affecting public health should be referred by the Board for consideration and report. It should also be competent for the Advisory Council to submit such matters of its own initiation to the Board. This Council should have power to meet jointly with any council, medical or lay, as occasion arises.

There should be representation of the dental profession on the Advisory Council.

AMATEUR PRESCRIBING.

A good instance of the danger of following amateur prescriptions is afforded by a short correspondence in the *Scotsman* of last week. Sir Frederick Milner, who is rather fond of writing to the papers, published a letter on February 24th, saying that the prescription he and others had successfully taken for influenza and chills was Calvert's phenol for internal use, No. 2, the dose being two tablespoonfuls three times a day. Mr. Rutherford Hill, secretary of the North British Branch of the Pharmaceutical Society of Great Britain, wrote at once to point out that there is no Calvert's phenol for internal use, No. 2. No. 2 is for external use, as the makers state. Some twenty-five years ago, he added, Calvert's firm recommended a mixture of phenol (16 minims), glycerin (2 fl. oz.), and water (up to 16 fl. oz.) to be taken in two tablespoonful doses for influenza. Each dose of this would contain one grain of phenol, whereas two tablespoonfuls of Calvert's No. 2 phenol would contain more than 400 grains and would be quickly followed by fatal consequences; in one case recorded in Taylor's *Medical Jurisprudence* it occurred in less than three minutes. At a meeting of the managers of the Royal Infirmary, Edinburgh, Dr. McKenzie Johnston took the opportunity of warning the public against the internal use of phenol unless prescribed by a medical authority. Even Sir Frederick Milner was a little appalled when he found out what he had done and hoped that it was obvious that he did not mean what he said.

MORE than £2,500 of the £12,000 required has been subscribed for the foundation of a chair of medicine in the University of Belgrade as a memorial of Dr. Elsie Inglis.

BARNES and CORT (*Journal of the American Medical Association*, 1918, vol. lxxi, pp. 350-352) report upon the use of oil of chenopodium in the treatment of amoebic dysentery. They found that the administration of the drug promptly relieved the clinical symptoms in many patients, and that the amoebae disappeared from the stools. A tendency to relapse, however, occurred in some cases. Whether these claims will stand the test of time seems doubtful. There is a lack of proper scientific detail in the paper, especially as regards the number of stool examinations made, and the cases were not followed up long enough to determine the percentage of relapses. Strict rest in bed, on a milk diet, will often cause amelioration of symptoms in amoebic dysentery, but that does not mean that the case is really cured. To determine a real cure the patient must be sterilized of all his amoebae, and the only way to make certain that has been accomplished is to make examinations of the stools daily for at least one month, if not two, after the cessation of treatment.

Correspondence.

THE GERMANIZATION OF THE BRITISH MEDICAL PROFESSION.

SIR,—There has in the past year been a good deal in the *BRITISH MEDICAL JOURNAL* about the militarization of the British medical profession—that is, converting it into a State service. The most ardent advocate is Colonel Maurice, A.A.M.S., who would model it on the R.A.M.C. organization. In this war we are fighting for our independence as a people—for our individualism, which we love more than life itself. As a people, if we have one characteristic more than another it is individualism as distinguished from collectivism.

The fact is that services—army, navy, and civil services—are necessary for their own special sphere in the machinery of the State; outside that special sphere we resent in the strongest possible terms being Germanized. Men like myself, who have done long service in a military medical service, most of which was in civil employ (which has also got its secretariat and its red tape), long for the day when we shall again be free men. Services look nice on paper—on paper you have rights and duties; secret societies also look nice on paper—they have laudable objects on paper. But what about the practice? The practice of secret societies is invariably bad and in no way in harmony with the initiation ceremony. The practice of secretariats ignores the official's rights. I was once told by a very senior official when I consulted him on a case about my rights: "My dear sir, give up the idea that you have rights; rights are put forward to look nice on paper to the innocent; you have no rights; the authorities can do what they like with you short of putting you in the family way." He expressed what would appeal to most men who have done fighting for their rights (official) as correct. Fight and lose, and you may be loved, but not respected. Fight and win against a powerful secretariat and you will be hated for the rest of your service, though you will be respected. Fight for your rights and win and you need never expect favours from the secretariat; you will get nothing which any one else wants, and you will probably spend the rest of your service in some *isle des diables*, of which every secretariat has many.

Services are only fit for third class men—the stamp of men with little brains and as little character. This class, for success in life, at once recognizes that it can only get on successfully by bowing and scraping, flunking to the secretariat and to the wives of secretariat officers—to influential people outside the service; sound honest work has very little to do with official success so long as the individual keeps his head above water, or, more correctly, does not go under water too often. It is disgusting to see this class of man elbow, through secretariat influence, able men aside. The type of able men—men with brains, ambition, and capacity by nature—are not adapted to succeed through the arts of the flunk, in high life called a courtier. Such men are by nature adapted to succeed by their worth; to a secretariat worth is a brassy claim which the nonentities who manipulate secretariat figures resent. A secretariat is a strait-jacket to men of worth. This type of man tends to get into trouble with secretariats. He fights them. If he is not experienced, or has not an experienced friend at his elbow, he, if he is winning, or has a winning case well handled, is very liable to press for a verdict. If he does he may leave the service; for secretariats have memories which do not die with the individual. To forget would expose the fact that the secretariat was fallible. He should measure his opponents carefully, press his case to victory, but avoid just going so far as to demand a decision. After he has measured swords in this way a few times he will get consideration enough to be given peace, but he will be kept in some dirty job for the rest of his service. Men who can fight secretariats when occasion demands it, and who can hold their own and go their own way till the end of their service, are very rare; they are men of exceptional capacity who would command an army or rule a state.

So far I have given a rough idea of my observation of officialdom. In my opinion if the profession is militarized it will be the death knell of the greatness of British medicine. It will reduce everything to red tape formulae

and perish all initiative. The big men of such a service excite jealousy among the smaller fry. This jealousy is used by intriguers till they influence the secretariat to set the object of the jealousy aside. This is human nature; it applies not merely to the medical profession, but to the army and to all other such bodies the secretariat of which is armed with such power. Secretariats are a queer muddle. If the chief, whether civil or military, is a big man he gets able men about him. If he is a small man he takes care to have no big men on his staff lest it should get out that he was being run by his staff. Find the class of men on the staff and you can very closely measure whether the chief is an able man or not. When a fight is on with an official the chief almost always supports his staff; said to be "to maintain discipline"; hence the official has no rights.

Colonel Maurice seems to think that the R.A.M.C. organization is perfect. It may be from his point of view, but when the method in which the R.A.M.C. conducted the medical side of this war is exposed, as it will be exposed, it will be evident that the profession does not want such an organization. What use did the War Office R.A.M.C. make of the Indian Medical Service? The I.M.S. is a military service 785 strong, the regular R.A.M.C. is 1,107 strong. The I.M.S. has one of the finest bodies in the world of practical surgeons in every branch as well as practical physicians and sanitarians. They were at the disposal of the War Office. What use did the R.A.M.C. make of them? Their distinguished men were not wanted! This is the sort of thing the profession may expect from the class of men who constitute secretariats.

Colonel Maurice and men of his views are not to assume that I am a soured man such as failures in life are. I am nothing of that kind. I remember the days of the threadbare coat, when I worked as the physique of few men could allow them to work—worked for the love of work: if reward came—all right; if reward did not come I would have the reward in the form of consolation that I had at least done my duty to myself and to my fellow men. The junior members of the profession should beware of the early years in a service. It is only after five or six years that they begin to feel fettered and under the influence of any demagogue who wishes to put pressure on the weaklings who constitute secretariats.

My advice is to strain every nerve to avoid the organizing or Germanizing of the profession into a service.—I am, etc.,

HENRY SMITH, C.I.E., Lieut.-Colonel I.M.S.

Amritsar, Jan. 2nd, 1919.

THE MINISTRY OF HEALTH.

SIR.—Questions of far-reaching importance to the interests of the medical profession are now before Parliament, and it is to be hoped that members of the British Medical Association may lose no time in making their views known and felt.

The Ministry of Health Bill as presented to the House of Commons has already been shown to be capable of considerable extension, and this may be carried a good deal further if the medical profession shows a desire for it. Major Astor (Parliamentary Secretary to the Local Government Board) stated in his reply on the debate upon the second reading that the powers of the Registrar-General "are now being transferred to the new Ministry." This was not in the bill, but on the suggestion that there should be transferred to the Ministry the powers of the General Medical Council, he put forward the inconclusive argument that "this new department which is being set up will deal only with England and Wales, and the General Medical Council deals with the whole of the United Kingdom, and that is why it is not in the bill."

Having regard to the fact that new departments are promised for Ireland and Scotland, and that no objection was raised to the principle of transfer of authority from the General Medical Council, the matter would resolve itself into allocating the functions of this body to three instead of to one department. This, excepting in the case of the Council's disciplinary powers, would cause very little deviation from the conditions already existing. General registration having been accepted as coming within the scope of the new Ministry, it would appear to be natural and reasonable to suggest that the special registration of doctors, dentists, and, eventually, of nurses,

should also be part of its duties. If this were the case, duly qualified persons in all these professions might look for protection and safeguards from a real live Ministry which, as matters now stand, are denied to them.

Beyond registration, the remaining functions of the General Medical Council could be disposed of quite naturally. Its disciplinary powers would fall to the judicial body to be established under the second proviso of Section 3, Subsection 1 of the bill; and, in so far as the General Medical Council exercises any control or initiative in the matter of professional education, it is suggested that greater practical benefit would arise from the appointment of inspectors of medical education under the Health Ministry. Registration, professional education, and discipline are questions which should not be excluded from the functions of the new department, and the benefits both to the profession and to the community arising from their inclusion are too obvious to require enumeration.

There may be a consensus of existing opinion against the abolition of the General Medical Council, but if it be retained the legislative anachronisms of the Medical Acts and of the Dentists Act must be recast, and made to suit the present and future conditions of professional existence. It is hoped that expressions of opinion on these points may be elicited from your readers.—I am, etc.,

London, March 3rd.

POLITICS.

ENDURANCE IN AORTIC INSUFFICIENCY.

SIR.—The interesting case of aortic insufficiency in an exceptionally vigorous old gentleman related by Dr. Muspratt in the *BRITISH MEDICAL JOURNAL* of February 15th, together with other recent letters on the same subject, tend rather to revive the chastened mood of some who had been taught by the new cardiology to regard mechanical valvular lesions as somewhat negligible factors in diseases of the heart.

One of the lessons of the war has been that the possessors of incompetent aortic and stenosed mitral valves cannot be relied upon to endure the stress of exertion involved in warfare. Those having such lesions among soldiers are, of course, in most cases, young. In some such, no doubt, syphilis, alone or ingrafted upon cardio-vascular lesions of rheumatic origin, precipitates failure. But in other cases the rheumatic lesion has itself been sufficient, under the strain of the soldier's life, to induce inadequacy.

Many years ago (*Medical Times and Gazette* 1873, *Clinical Medicine* 1874) the late Lord Ilkerton (Sir Walter Foster) pointed out, in discussing the effects of accidental rupture of the aortic valves, that the position and extent of these tears had an important bearing upon the prognosis of the consequent cardiac inadequacy. Such ruptures are rare, and their satisfactory diagnosis is only made *post mortem*, for ruptured "compensation" bears a close clinical likeness to traumatic lesion. But the determination of the point raised by Sir Walter Foster is nevertheless important in all cases of aortic valvular disease, whether of traumatic or nosological origin. The degenerative effects of syphilis may cause failure when there is little mechanical lesion, but aortic valvular cases fail without being syphilitic.

In the narration of all cases of aortic incompetency, therefore, which show exceptional endurance under conditions of strain, as in the case of the hardy octogenarian mentioned by Dr. Muspratt, it is particularly desirable that some indication of the degree of valvular incompetency should be given. It will, I think, be found that this is not great in most cases, which are little hampered by the possession of so undesirable a lesion, for the aortic valve is the key to the amount of left intraventricular pressure. This fact is proved very strikingly by the escape of the heart from hypertrophy in aortic aneurysm when the aortic cusps are competent, and by the hypertrophy of the left ventricle in proportion to their insufficiency under these circumstances. Such an estimation may, moreover, be made clinically with approximate accuracy without much difficulty.

Without going into any detail, the simplest method of gauging the degree of incompetency in any case of aortic valvular defect, apart from a consideration of the condition of the cardiac muscle, is the measurement of the diastolic blood pressure (which may fall to 50 or 40 mm.,

or even lower) and the acoustic evidence of the survival of the aortic second sound of the heart. Any difficulty in discriminating between the closure of the aortic and pulmonary arterial valves may be obviated by auscultating in the suprasternal fossa, where the aortic valvular closure is alone audible. The degree of hypertrophy of the heart is also easily estimated by well known clinical methods, and is proportionate to the insufficiency when other factors, such as costo-pericardial adhesions, are not added to the case. The curious, who have access to an electro-cardiograph, may also determine the presence or absence of a preponderant left or right hypertrophy, but the signs of this, even if regarded as reliable, need not be sought as a rule.

It would be interesting to learn how the exceptionally hardy old gentleman of whom Dr. Muspratt writes answers to these tests. In any case, I do not think it can be maintained, from the history even of exceptional cases, and apart from the consideration of the muscular state of the heart, that aortic valvular incompetency is other than a grave condition, and, so far as the physician is concerned, one in which he can advise other than a quiet life, when this is possible. This need not, however, be that of an invalid, but one prescribed less from a general recognition of the mechanical lesion than by an estimation of its degree in any given case, and from a knowledge of the etiology of the condition and of the general state of the bearer of the lesion.—I am, etc.,

London, W., Feb. 17th.

ALEXANDER MORISON.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—Mr. Thomson Walker, in his letter which appears in your issue of February 15th, makes a statement which cannot be allowed to pass unchallenged.

In the *Lancet* of February 3rd, 1917, Mr. Walker published an article strongly recommending early suprapubic drainage as a means of preventing ascending pyelonephritis following catheterization in cases of paraplegia due to gunshot wounds of the spine. He now complains that his advice "was, however, without effect on Colonel Fullerton and his colleagues in France"—by which I presume he means surgeons in general working with the British armies in France—and that as a result of this "the stream of paraplegics dying from catheter infection continued unabated."

This, Sir, appears to me to be a very serious accusation directed against a body of men who, whatever their faults, have not as a rule been lacking in receptiveness to new ideas, or in anxiety to adopt suggestions that appeared likely to benefit the wounded soldier.

As a matter of fact, I can, from personal knowledge, assure Mr. Thomson Walker that his article attracted considerable attention amongst the surgeons of the British armies in France, and that his authoritative statement quickly led to an extensive revival of a mode of treatment which had already had some vogue at Boulogne base in 1915.

From the time of the battle of Messines till the end of the attacks on Passchendaele Ridge, large numbers of surgeons were congregated in the casualty clearing stations of the Second and Fifth Armies. Suprapubic drainage was the routine practice of many surgeons in paraplegia for spinal injury during the whole of this period (six months) and later. Owing to the large numbers of wounded and to the impossibility of retaining them in the forward areas, the spine could only be treated by operation in exceptional cases, but my own practice and that of many colleagues was never, if it could possibly be avoided, to send the cases down without first doing suprapubic drainage. Catheterization was strictly forbidden, and was never carried out save in times of the greatest pressure, when time could not be spared for operation.

It was only at a later date when information began to be received from the base concerning the progress of these patients, that doubts arose as to whether, after all, suprapubic drainage was efficacious in avoiding urinary sepsis. Nevertheless, this operation continued to be performed, though less frequently, until the introduction of the simple and satisfactory method of emptying the bladder by expression, whereby both catheter and operation are avoided. During the heavy fighting of the great advance from August 8th onward, expression of the urine was, to

my personal knowledge, used, to the exclusion of all other methods, in the casualty clearing stations at which I worked until the close of hostilities.

That Mr. Thomson Walker has not seen in England the very considerable number of cases in which suprapubic drainage was performed in the casualty clearing stations of France during 1917 is somewhat of a sad reflection for us who spent much time and labour, when both were very precious, in carrying out a method of treatment which we fondly believed would be successful in saving or prolonging the lives of those unfortunate men.

Let us hope, however, that some few at least may have arrived in England unknown to him.—I am, etc.,

FORBES FRASER,

Lieut.-Colonel R.A.M.C.,
Consulting Surgeon, Second Army.

Cologne, Feb. 27th.

THE UNITY OF THE PROFESSION.

SIR,—I take strong exception to the sentiments expressed by Dr. W. Escombe in his letter appearing in the *BRITISH MEDICAL JOURNAL* of February 22nd. He states "the sooner the profession realizes that Dr. Addison is not working for it, and cares nothing for it, the better." I entirely refute this. I have had several interviews with Dr. Addison, and am so personally acquainted with his opinions.

If men like Dr. Escombe would only realize that the interests of the profession are also the interests of the community, instead of only thinking and "grousing" over their sectional interests, we should soon obtain a service which would be satisfactory both to the public and to the medical profession. Without this statesmanship we shall get neither.—I am, etc.,

Birmingham, Feb. 23rd.

F. A. L'ESTRANGE BURGESS.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

This Fund was officially closed by the Executive Committee at their meeting on January 30th, the formal date of closure being February 10th. Since the date of the meeting the following subscriptions have been received:

	£ s. d.		£ s. d.
Hampshire Pharmacists' Association (per Mr. C. H. Baker, making \$56 5s.)	6 5 0	South Australian Belgian Relief Fund (per the Agent-General for S.A.)	500 0 0
Dr. Charlotte E. Warner	1 0 0	J. M. ...	0 10 0
Dr. Alfred Cox (monthly)	1 1 0	Mr. D'Arcy Power	2 10 0
Dr. Papillon	0 10 6	Mr. H. E. Morris	0 5 0
Dr. Leak	1 1 0		

The following monthly subscriptions were received for January and also for February:

	£ s. d.		£ s. d.
Dr. E. C. Morland	0 10 6	Dr. T. L. Draper	0 10 0
Major F. R. Fothergill,		Dr. F. W. Goodbody	1 0 0
R.A.M.C.	0 10 0	Dr. A. Grabaud	1 1 0
Dr. J. O. Mussion	0 10 0	Dr. W. Steward	0 10 0
Dr. G. Grey Turner	1 1 0	Dr. H. Whitehouse	0 10 0
Dr. A. W. Forrest	1 0 0	Dr. Vincent Tighe	0 10 0
Sir Thos. Barlow	0 10 0	Dr. W. E. Good	0 10 0
Dr. A. E. Naish	0 10 0	Dr. H. Caiger	0 10 6
Dr. A. B. Stevens	1 0 0	Dr. Hyla Greves	0 10 0
Dr. Luftman	0 10 0		

It will be seen that the Fund benefits by generous monthly subscriptions for January and February, and has also received from the South Australian Belgian Relief Fund, through the Agent-General for South Australia, a munificent donation of £500. In view of the terms of the letter from Dr. V. Pechère, noted on February 8th, the Fund was closed, but these handsome augmentations are none the less extremely gratifying to the Executive Committee, which knows full well in how many directions the money is still urgently needed. Dr. Pechère, as President of the Comité National de Secours et d'Alimentation (Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés), when deprecating the sending of further subscriptions, called attention to the fact that his society had throughout practised the severest economy in order to keep funds in reserve, inasmuch as grave necessity would continue for some time. The Fund will still be able to do a little more to decrease the toll of misery.

According to the *Medicina Ibera* of Madrid two hundred medical practitioners died during the epidemic of influenza in Spain last year.

Obituary.

MAJOR H. G. GIBSON, R.A.M.C.,

Assistant Adviser in Pathology, G.H.Q., France.

In a brief note published in the *JOURNAL* of last week (p. 260) we recorded the death of Major Howard Graeme Gibson, R.A.M.C., which occurred from influenza while on active service in France.

We are indebted to Colonel S. L. CUMMINS, A.M.S., Adviser in Pathology, B.E.F., for the following tribute to this distinguished officer:

As his commanding officer at the time of his death and as a close personal friend I feel constrained to record, even briefly, an appreciation of one whose ability and energy had already made valuable contributions to medical knowledge and who seemed certain to be destined to a brilliant career in the corps. He was born in 1883 and received his medical education at Guy's Hospital. He entered the Royal Army Medical Corps on January 28th, 1907, being promoted captain on July 20th, 1910, and brevet major January 1st, 1918.

My first personal contact with him was when, early in the spring of 1914, he formed one of the specialist class in bacteriology at the promotion course at the Royal Army Medical College. Gibson entered into the work of the laboratory with enthusiasm. It was a pleasure to have in the class a man with such keenness and avidity for work. From the very beginning he stood out as the possessor of exceptional ability, and the favourable opinion which I had formed of him was justified when, at the end of the course, he made the highest marks in the specialist examination, and, by his success in other subjects as well as bacteriology, succeeded in qualifying for a year's acceleration of promotion.

A few months later the outbreak of war swept Gibson, like so many others, away from scientific work to take an active part in the great world drama. He joined the 12th Royal Lancers, and with them proceeded at once to the front. The duties of a regimental medical officer with cavalry during the first phases of the war put the highest strain on initiative, endurance, and courage. This test Gibson met with his usual cheery energy and zeal. Throughout the retreat, throughout the advance, during the battles of the Marne and of the Aisne, and later, when the British Expeditionary Force was rapidly and secretly moved north to defend the Channel Ports, he shared with the regiment its trials, hardships, dangers, and glories. Then, just when open warfare was changing to the war of trenches, and when the cavalry was helping, dismounted, to eke out numerically weak infantry, Gibson was severely injured by a shell burst, and was sent home to England, where many months of hospital treatment were necessary before he could resume military duty.

This injury and disability, so galling at the time to one whose whole soul was with the army, proved a blessing in disguise, for it led to his resumption of the bacteriological work for which he was so well qualified. Being quite unfit to resume active duty at the front, Gibson was now posted to the Vaccine Department of the Royal Army Medical College. Here, working under Lieut.-Colonel D. Harvey, he had full scope for the application of his special knowledge. Although the claims of the Vaccine Department made necessary long hours of routine work, still, encouraged and aided by Harvey, he found time to devote himself to research on protection against bacillary dysentery. The result was a brilliant piece of work communicated to the *Journal of the Royal Army Medical Corps* (June, 1917); it culminated in the production of Gibson's antidyenteric sero-vaccine. The severe reactions following the inoculation of unaltered dysentery bacilli had for the most part prevented the use of antidyenteric vaccines. Gibson, recognizing the danger that the sensitization of bacilli by the homologous antiserum might, while eliminating the severe reaction, eliminate also the value of the emulsion as antigen, conceived the ingenious idea of removing from the serum, by absorption, all its antibacterial "immune bodies" while retaining the anti-endotoxin substances. Such a serum injected simultaneously with the appropriate dose of killed dysentery bacilli might be expected to prevent any severe local reaction while still leaving the bacteria uninjured and capable of evoking in the body the production of agglutinins, opsonins, and other antibacterial immune sub-

stances. Experiments on animals proved this conception to be correct, and the new principle was soon applied in practice, large supplies of the sero-vaccine being manufactured and sent abroad. While it is still too early to put forward final claims for the value of this sero-vaccine, all the reports received have so far been favourable, and there is every reason to hope that many lives will be saved by this means in the future.

In November, 1917, Gibson, now greatly improved in health, was passed "fit" for service in France, and joined Sir William Leishman as assistant adviser in pathology at head quarters. Here he threw himself with his usual ardour into statistical work connected with the effects of T.A.B. inoculation and the use of antitetanic serum. His neat and thorough records are before me as I write, and will constitute a valuable source of reference in the future. When, in April, 1918, I succeeded Sir William Leishman as adviser in pathology, my task was rendered easy by the fact that Gibson, who remained on as my assistant, had at his fingers' ends every fact connected with the office records and every detail of the work in hand. Then came the autumn epidemic of influenza, with its high death-rate and its many unsolved problems. Research was a matter of supreme necessity, and the number of men qualified to execute such work, and at the same time actually available for employment, was very small. I had decided that a research team was needed at once. It seemed waste to keep such a man as Gibson occupied with office records when knowledge, enthusiasm, and technical skill were so badly wanted. He welcomed my suggestion with the greatest delight, and I was able to include him as the senior officer of the team. His colleagues were Major F. B. Bowman, C.A.M.C., and Captain J. J. Connor, A.A.M.C., with whom was associated for clinical work Major C. E. Sundell, R.A.M.C. Helped generously by the provision of experimental animals through the Medical Research Committee, these officers were successful in transmitting the disease to monkeys and other animals by the inoculation of filtrates of infected material, thus confirming the work of C. Nicolle and Lebailly. They went further and, employing the "Noguchi" method, were successful in obtaining cultures of a very minute filter-passing coccus which reproduces, on inoculation into animals, the symptoms of the disease. This work, carried out independently, has been completely confirmed by the publication by Sir J. Rose Bradford of similar observations made by Captain J. A. Wilson, R.A.M.C. At the very moment of success, when the work of months had at last reached its final stage, Major Gibson, who had been putting in long hours with his cultures in the laboratory, himself developed the disease in its severest form. Those who best knew him will appreciate what the army and the corps have lost through his untimely death. He was a man who seemed destined to a career of distinguished success and utility. Lives such as his add fresh laurels to the splendid traditions of the Royal Army Medical Corps.

Major-General Sir WILLIAM LEISHMAN, K.C.M.G., C.B., F.R.S., K.H.P., writes: To the above appreciation of the late Major H. G. Gibson by Colonel Cummins, to every word of which I subscribe, I should like to add a few lines.

Sudden death and the cutting short of what promised to be a brilliant career has, alas! been all too frequent during recent years, but the poignancy of sorrow and regret for relatives and friends remains as sharp as ever at each fresh loss. Of the many friends and comrades whose lives have been given for their country during the war there are none whom I shall miss more acutely than Major Gibson. It was indeed an irony of fate that he should have met his death at the very moment when his devoted investigations into the etiology of the disease which killed him appeared likely to be crowned with a success which would have brought him well-deserved distinction.

No man had ever a better or more loyal colleague to work with, and in the months in which we were associated in France I not only formed the highest opinion of his work and judgement, but also of his upright and sterling character. No one could have lived long in close association with him without realizing the rare qualities of his nature and conceiving for him a deep and genuine affection. In illustration of this, I may, perhaps, quote a

sentence from a letter received from one of the colleagues associated with him in his last work. "He was one of the finest characters I have ever met, and never in the six months that I knew him did I hear him say anything against any one."

One would like to think that it may, perhaps, be some small consolation to his widow and family to know that his brother officers will not readily forget their lost friend, and that a large number of them realize very clearly the great loss which the corps has suffered in the early passing of a man whose work had already stamped him as destined to rise high in the line to which he had devoted himself so whole-heartedly.

WILLIAM STEPHENSON, M.D. EDIN., LL.D. ABERD.,

Emeritus Professor of Midwifery, University of Aberdeen.

PROFESSOR WILLIAM STEPHENSON died on February 24th in his 82nd year. He was born in Edinburgh on July 2nd, 1837, was educated at the High School and University, and graduated M.D. in 1861. He began practice in Edinburgh, and was physician to the Royal Hospital for Sick Children there. In 1875 he was appointed professor of midwifery in the University of Aberdeen, became physician to the Maternity Hospital there, and also gynaecologist to the Aberdeen Royal Infirmary. He was vice-president of the Obstetrical Society of London in 1887-89, and president of the Obstetric Section of the British Medical Association at the annual meeting at Swansea in 1903. In 1912 he resigned his chair, and was appointed Emeritus professor, and in the following year received the honorary degree of LL.D. from the university. In 1914, during the meeting of the British Medical Association in Aberdeen, Professor Stephenson was presented by the university with his portrait, which now hangs in the court-room at Marischal College. Professor Stephenson, who was twice married, leaves a widow and a family, by his first marriage, of two sons and three daughters; the younger son joined the 4th Gordon Highlanders, and was killed in July, 1916. The other is Dr. R. B. T. Stephenson of Southsea.

We are indebted to Professor R. G. McKERRON, his successor in the chair, for the following brief tribute:

We will miss his genial presence in this district. He was keenly interested in everything relating to the profession and more especially in its social relations. He rarely, if ever, missed a social gathering of medical men, and his presence was always welcome. He published a number of valuable papers—the earlier chiefly on diseases of children, the later all on obstetrical subjects. There were few, if any, obstetricians of his generation who devoted more time or study to obstetrical problems, and more particularly to that aspect of obstetrics which he made peculiarly his own—the mechanism of labour. His method was the soundest and best I know. His teaching was essentially practical, and its value, not always appreciated at the time, was fully realized by his students later.

The Services.

R.A.M.C. (REGULAR) UNIFORM OF OFFICERS.

WE understand that some alarm has been caused to regular officers by a circular recently issued making inquiries with regard to change of uniform. We are now able to state that an Army Council Instruction has been issued that no officer is at present to purchase any uniform other than field service; the whole question is now under consideration.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

AT a meeting of the University Court on February 17th Mr. George Barger, M.A., D.Sc., was appointed to the chair of chemistry in relation to medicine. He was educated in Holland and at University College, London, and King's College, Cambridge. From 1901 to 1903 he was demonstrator of botany at the University of Brussels; afterwards he was chemist to the Wellcome Physiological Research Laboratory, and since 1914 has been a member of the staff of the department of biochemistry and pharmacology of the Medical Research Committee, where he has been concerned largely with confidential work for the Ministry of Munitions.

The courses in the first year subjects in medicine at the University of Stellenbosch were recognized as qualifying for the first professional examination in medicine.

Dr. John Guy was recognized as an extra-academical lecturer on tuberculosis.

Medical News.

DR. P. L. GIUSEPPI has been elected the representative of Felixstowe (N.W. Ward) on the Suffolk County Council.

THE Lumleian Lectures before the Medical Society of London have been postponed, owing to unavoidable delay in the arrival of Colonel W. H. Willcox, C.B., C.M.G., in England.

DR. ADDISON, President of the Local Government Board, has appointed Miss Janet Mary Campbell, M.D., M.S., to be a Medical Officer of the Board in special charge of the work of the Board in respect of maternity and child welfare.

THE War Emergency Fund of the Royal Medical Benevolent Fund has recently received donations of fifty guineas each from the Royal College of Physicians, London, and the Royal College of Surgeons, England.

CAPTAIN W. I. CUMBERLIDGE, R.A.M.C.(T.F.), F.R.C.S., who has been honorary assistant surgeon to the Leicester Royal Infirmary since 1911, has recently returned from service in France, and has been appointed honorary surgeon to the infirmary.

AT the matriculation examination of the University of London in January 120 candidates passed in the first division and 638 in the second. Five candidates passed at the examination held in France, one of them in the first division.

LIEUT.-GENERAL SIR CHARLES H. BURTCHAELL, K.C.B., Director-General of the Army Medical Service in France, has received the honorary degree of LL.D. of the University of Dublin, in which he graduated M.B., B.Ch. in 1889. He has also received the honorary Fellowship of the Royal College of Surgeons in Ireland.

DR. LEONARD HILL, F.R.S., will deliver a lecture on atmospheric conditions which affect health, before the Royal Meteorological Society on Wednesday, March 19th, in the lecture room of the Geological Society, Burlington House, Piccadilly. The chair will be taken by Sir Napier Shaw, F.R.S., at 5 p.m., and visitors will be welcomed.

DR. FRANCIS ARTHUR BAINBRIDGE, Professor of Physiology in the University of London, Dr. George Barger, whose appointment to the chair of chemistry in relation to medicine is mentioned on this page, and Dr. Thomas B. Wood, Professor of Agriculture, Cambridge University, are among the fifteen candidates selected by the council of the Royal Society for election into the society.

THE British Psychological Society has resolved that persons interested (instead of, as heretofore, engaged) in the various branches of psychology shall be eligible for membership. It was also decided to institute three special sections of the society, devoted to the educational, industrial, and medical aspects or psychology respectively. Further particulars may be obtained from the Honorary Secretary, the Psychological Laboratory, University College, W.C.1.

THE British Science Guild has been encouraged by the success which attended its exhibition at King's College last summer and the more recent exhibition at Manchester to organize a British Scientific Products Exhibition for the display of new appliances and devices. The exhibition will be held in July at the Central Hall, Westminster. There will be eleven sections, among them one for medicine and surgery. The organizing secretary is Mr. F. S. Spiers, 82, Victoria Street, Westminster, S.W.1.

MAJOR F. G. BUSHNELL, R.A.M.C.(T.F.), has been demobilized after four years' active service, chiefly in France and Salonica, and has resumed duty as tuberculosis officer to the Plymouth Borough Council. Dr. Bushnell was among the earliest advocates of the establishment of a Ministry of Health, having read a paper on the subject at the Royal Sanitary Institute Congress in 1903, and also at the annual meeting of the British Medical Association in 1906.

SIR EDWIN CORNWALL has been succeeded as chairman of the National Health Insurance Joint Committee by Major the Hon. Waldorf Astor, M.P., chairman of the Medical Research Committee, who will continue to act as Parliamentary Secretary to the Local Government Board. Major Astor was chairman of the Departmental Committee on Tuberculosis in 1913.

THE annual public conference of the Faculty of Insurance will be held in the Central Hall, Westminster, on

April 4th. The Minister of Pensions, Sir L. Worthington Evans, M.P., will open a discussion on the training and treatment of disabled men. A discussion on medical research and the state will be opened by Sir Walter Fletcher, F.R.S., who will be followed by Major-General Sir William Leishman, F.R.S. A discussion on the necessity for an increase in national insurance benefits will be opened by Mr. J. H. Thomas, M.P., and continued by Mr. John Hodge, M.P. Further information can be obtained from the Secretary of the Faculty, 3 and 4, Sicilian House, Southampton Row, W.C.

THE Royal Sanitary Institute is holding a conference on March 13th, 14th, and 15th, at its house, 90, Buckingham Palace Road, on post-war developments relating to public health. Discussions have been arranged: On city hygiene in relation to employment, to be introduced by Dr. W. J. Howarth (M.O.H. City of London); on housing for city clerks and similar workers, by Sir Henry Tanner, C.B., F.R.I.B.A.; on the public health aspect of tuberculosis, by Dr. N. D. Bardswell; on public health propaganda and social work, by Professor H. R. Kenwood, C.M.G.; and on welfare work in factories, by Dr. E. L. Collis, director of welfare and health, Ministry of Munitions. There will also be a discussion on child welfare work, under the presidency of Mrs. Lloyd George, introduced by Mrs. Flora Shepherd, M.B.

ACCORDING to the report on the work of the Central Midwives Board for the year ended March 31st, 1918 (Cmd. 17, price 1d.), the Midwives Roll at that date contained the names of 42,949 women, a net increase for the year of 1,204. There are 137 institutions in England and Wales at which midwives may be trained; of these, 69 are Poor Law institutions. In addition to training institutions, 73 registered medical practitioners were approved as lecturers and 92 practising midwives as teachers. Of 1,895 candidates who completed their examination 1,548 passed; the percentage of failure fell from 20.7 to 18.3. Of 76 midwives cited before the Board to answer charges of malpractice, negligence, or misconduct, the names of 47 were removed from the roll. The Board has expressed its general approval of the proposals for a state-aided midwifery service in England and Wales formulated by the Association for Promoting the Training and Supply of Midwives.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

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1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY and BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

THE NOTIFICATION OF BRONCHOPNEUMONIA.

DR. T. L. BUNTING (Newcastle-on-Tyne) writes: The making of pneumonia a notifiable disease raises one difficulty which is not dealt with in Sir Arthur Newsholme's explanatory pamphlet. It is a common clinical experience to see a child who at first presents only symptoms of bronchitis but who a few days later shows definitely one or more patches of consolidation. It is also common, in a family of young children of whom one has bronchopneumonia, to find that several of the others have distinct bronchitis but no discoverable consolidation. On clinical grounds, therefore, there is good reason for supposing that many, perhaps all, cases of bronchitis in children are identical with one or other of the conditions known as bronchopneumonia. If this be the case, then it must be necessary to notify all cases of bronchitis in children; for whether the object of notification be a study of incidence, or

the prevention of spread, it should obviously include all cases due to the same cause, and not merely those which attain a certain severity. Indeed, the slighter cases being, in virtue of their slightness, the probable carriers of infection are, from a prophylactic point of view, the more important. Possibly the bacteriologists may, even now, be able to answer this question; or they may help by arranging to examine material from our very numerous cases, though in this there are obvious difficulties due to the presence of some form of pneumococcus in many healthy mouths and the difficulty of getting pulmonary secretion from most young children. In the meantime, on clinical evidence, it would seem that even cases without consolidation should be notified.

THE PROPHYLAXIS OF VENEREAL DISEASE.

MR. C. F. MARSHALL (London, W.) writes: The accumulated evidence in favour of the adoption of prophylactic measures against venereal infection, supported by Sir James Barrett in his article in the JOURNAL of February 1st, by Professor Adam in his address before the Royal Institute of Public Health on January 8th, by your correspondent in the JOURNAL of February 8th, and by others, is overwhelming. In the absence of preventive inoculation, personal prophylaxis, although by no means infallible, is the only method likely to attain any considerable degree of success in diminishing the incidence of venereal disease. At the present time the adoption of these measures, not only by demobilized soldiers but also by the army of occupation, is important.

THE VALUE OF PRESENT-DAY PRACTICES.

WE are told that it is desirable to utter a word of caution with regard to the present value of practices. The position at present differs from that which prevailed before the war, and careful investigation is essential to arrive at the value of any practice. Owing to various conditions due to the war and to the recent epidemics of influenza, the basis of last year's income may not represent the normal value. Intending purchasers will do well to consult old established agents who have a reputation to maintain, and can be relied upon to advise, after investigation, as to the proper value of a practice.

POST-GRADUATE STUDY.

CAPTAIN CHAS. J. HILL AITKEN, M.D., R.A.M.C., writes: By using model eyes, ears, and throats, the country practitioner can carry on post-graduate study. Finding myself far from the eye specialist I some years ago in South Africa got a model eye and an atlas of ophthalmoscopy. In a very little time I was able to tackle refractions. One case was of particular interest: Following an attack of influenza an up-country farmer became "blind." On his way to a port for a voyage to England, when he called to see me, I proved to his satisfaction that a + cylinder was all that he needed to cure his "blindness." Another case, in which my atlas enabled me to give a diagnosis, was an old man who had been given two years to live, as he was told he was suffering from "albuminuric retinitis." I diagnosed senile disease of the macula and told him to cheer up. He lived for six years and then died of acute bronchitis. It is possible also to get model bladders for practising cystoscopy.

AN EARLIER GERMAN REVOLUTION.

ON January 5th the American Friends of German Democracy gave a dinner to Dr. Abraham Jacobi, who is honorary president of the association. Dr. Jacobi, who is nearly 90 years of age, took part in the German revolution of 1848, and he left his native country after suffering a term of imprisonment. Dr. S. Adolphus Knopf delivered an address in *vers libres*, in which he reviewed the career of the distinguished guest. After speaking of his world-wide fame as a healer and teacher, and his work as "the little children's saviour," Dr. Knopf referred to the endeavours made by the powers that drove him across the sea to induce him to return to Germany. They offered to make him "Herr Geheimrat," "Exzellenz," etc., but he declined the honour. The poet concluded with a prayer that Providence may keep Dr. Jacobi safe to see his dream of seventy years come true, "A Germany redeemed at last and worthy to be free."

THE following appointments of certifying factory surgeons are vacant: Bentham (Yorks), Brynmanman (Carmarthen), Denby Dale (Yorks), Martock (Somerset), Perranporth (Cornwall).

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NOTE. It is against the rules of the Post Office to receive *postea* letters addressed either in initials or numbers.

The Milroy Lectures ON HALF A CENTURY OF SMALL-POX AND VACCINATION.

DELIVERED BEFORE THE ROYAL COLLEGE OF
PHYSICIANS OF LONDON.

BY
JOHN C. McVAIL, M.D., LL.D.

INTRODUCTORY.

In beginning these lectures I crave permission to strike a personal note. It happens to be just fifty years since I entered on the study of medicine at the old College of Glasgow. The pandemic of small-pox which had started before, but was greatly favoured by the Franco-Prussian war, reached Glasgow in 1871. At first some cases of the disease were treated in the Fever House of the Royal Infirmary, so that students had opportunity of seeing small-pox in the wards, though spread of infection among patients soon caused its exclusion. In 1873-74 the epidemic reached the town of Kilmarnock in Ayrshire, where I had just begun practice and where the outbreak could be watched from beginning to end. A few years later my interest was stimulated by the discovery of a local register of mortality covering the period 1723 to 1764. Publication of the facts as to the ravages of small-pox revealed in this record led to further discussion of the whole subject, which again resulted in my giving lengthy evidence before the Royal Commission on Vaccination. Also, as Medical Officer of Health for Kilmarnock and subsequently for the counties of Stirling and Dunbarton, various opportunities of dealing with the disease, especially from the preventive and administrative sides, fell to my lot, and now my thanks are due to the Royal College of Physicians for giving me the opportunity, through the Milroy Lectureship, of endeavouring to sum up the opinions or conclusions which have formed themselves in my mind in the course of these fifty years.

It will be convenient to treat the subject in three sections:

- I. Small-pox as it was and is.
- II. Vaccination as it was and is.
- III. Control of small-pox in the present day.

I. SMALL-POX AS IT WAS AND IS.

How does the small-pox of the present compare with the small-pox of the past in respect of (a) fatality, (b) infectivity, and (c) prevalence?

(a) FATALITY.

The literature of small-pox in the days before vaccination depicts it as a disease of normally high fatality, with occasional outbreaks of a very mild character. Wagstaffe's statements: "There is scarcely, I believe, so great a difference between any two distempers in the world as between the best and worst sort of small-pox"; and "there is one sort in which a nurse cannot kill, and another which even a physician can never cure,"¹ may no doubt be explicable on the supposition that he did not distinguish between variola and varicella. Even Sydenham's reference to variolous fever without eruption might be attributed to his theory of epidemic constitution of the atmosphere having caused him to regard febrile illness during an acknowledged small-pox epidemic as due to the existing atmospheric constitution. Such terms as windpox, waterpox, stonepox, swinepox, and niplepox, may often have meant small pox much modified, though not absolutely prevented by previous inoculation. There is, however, unquestionable evidence of exceptional mildness of type in the small-pox of 1789, which Jenner proposed to utilize for establishing a mild sort of inoculation, milder even than the Suttonian then in vogue. Also, in 1806, Adams of the Small-pox Hospital in London gave the name pearl-pox to a much modified variety which then prevailed.

Prior to the Acts for notification of infectious diseases (adoptive in 1889, compulsory in 1899) fatality rates in modern times are to be learned mainly from hospital practice, and those which I am about to give include both vaccinated and unvaccinated. Until the pandemic

of 1870-73, for hospital statistics in this country we have to depend on the London Hospital for Small-pox and Vaccination, which originated in 1746 as the Hospital for Small-pox and Inoculation.

In 1836-51 Marson at that hospital had 5,982 cases with 1,279 deaths, or 21.38 per cent.

This period includes the first of the two greatest epidemics of the nineteenth century—those of 1837-41 and 1870-73. Marson's predecessor, Dr. George Gregory, records for the epidemic year 1838 694 cases with 188 deaths, or 27.1 per cent.²

The European Pandemic of 1870-73.

By 1870-73 the practice of vaccination in Britain had greatly extended, and affected the gross fatality rates.

The first hospital of the Metropolitan Asylums Board was opened at the end of 1870, and the following rates are given for the metropolitan area in 1870-72:

Number of cases, 13,721; deaths, 2,557=18.6 per cent. Glasgow in 1871-74³ had 4,328 cases, with 786 deaths=18.1 per cent.

In Cork Street Hospital, Dublin, in 1871-73 there were 746 cases, with 162 deaths=21.6 per cent. In the same institution in four years beginning April 1st, 1876, the figures were: 2,404 cases, 523 deaths=21.7 per cent.

Between the pandemic of 1870-73 and the epidemic of 1892-95 about to be considered, mention may be made of two local epidemics:

Sheffield, in 1887-88, had 4,677 cases, with 474 deaths=10.1 per cent.

Bristol, in the same period, with 327 cases, had 37 deaths=11.3 per cent.

The epidemic of 1892-5 was of wide extent. In the Metropolitan Asylums Board's institutions there were in 1893-94: 3,493 cases, with 282 deaths=8.1 per cent. If the four years 1892-95 be taken instead of the two years 1893-94, the fatality rate is almost identical: 4,759 cases, 381 deaths=8 per cent.

The following figures relate to outbreaks in various places in the provinces. The disease prevailed chiefly in Lancashire and Yorkshire, but also further south.

TABLE I.
Small-pox Fatality Rates.—Provinces.
Epidemic 1892-95.

Place.	Time.	Cases.	Deaths.	Percentage.
Middlesbrough	1893-4	115	11	9.6
Liverpool	1892	194	15	7.7
Manchester	1892-4	996	68	6.8
Salisbury	1892-5	173	22	12.7
Warrington	1892-3	598	60	10.0
Oldham	1894	165	22	13.3
Hallifax	1892-3	513	44	8.6
Bradford	1893	935	100	10.7
Hull	1893-4	205	12	5.9
Leeds	1893	586	30	5.1
Brighouse	1892-3	150	18	12.0
Sheffield	1892-4	157	9	5.7
Keighley	1893	72	7	9.7
Derby	1893 and 1895	135	15	11.1
Nottingham	1893	53	6	11.3
Leicester	1892-3	347	21	6.1
Hinckley	1894	118	10	8.5
Birmingham	1893-5	3,153	248	7.9
Aston Manor	1893-4	315	29	9.2
Walsall	1893-4	945	83	8.8
Willenhall	1894	842	47	5.6
Bristol	1893-4	366	36	9.8
St. Albans	1895	58	6	10.4
Edinburgh	1892-5	697	73	10.5
Glasgow	1892-5	750	58	7.7
Dundee	1892-5	22	2	9.1
Rest of Scotland	1892-5	443	34	7.7
Dublin (H)	1894-5	796	96	12.1
		13,899	1,182	8.5

The fatality rates in London and the provinces are so approximately equal in the early nineties as to show that the same general type of disease prevailed throughout the country as a whole. This was the first extensive epidemic since the seventies, and small-pox showed itself a much less fatal disease.

The Epidemic of 1902-5.

We come now to the most recent extensive prevalence of small-pox in Britain, and that is so long ago as 1902-5.

Summarizing the London statistics from 1370 to 1902

the Metropolitan Asylums Board has recorded for the sphere of its own operations fatality rates as follows:

1870-72	18.8 per cent.
1876-78	18.2 "
1879-83	16.5 "
1884-85	15.9 "
1892-93	8.0 "
1901-2	16.8 "

The data on which these rates are based are:*

Period.	Cases.	Deaths.
1870-72	13,721	2,557
1876-78	13,208	2,410
1879-83	14,558	2,329
1884-85	12,509	1,992
1892-93	5,493	282
1901-2	9,659	1,629

It will be at once observed that the progressive decline in fatality which had gone on from 1870-72 to 1892-93 was abruptly broken in 1901-2 in London. The data are: 9,659 cases, 1,629 deaths = 16.8 per cent.

In Middlesex in 1901-2 the disease was of the London type, thus: 1,868 cases, 301 deaths = 16.1 per cent.

In the Provinces.

At this time the Local Government Board were obtaining from London and from nearly all provincial towns of over 25,000 inhabitants, as well as from others of smaller population, weekly returns of notifications, and issuing a weekly statement to the medical officers of the towns taking part in the scheme. The aggregate population thus dealt with altered as the returns increased, but the total (including London) was between 19 and 20 millions of the 32 millions in England and Wales. In the provinces in 1902-6 inclusive the cases thus reported were 23,883 and the deaths 1,649, or 6.9 per cent.

Turning now to detailed statistics of the provinces for this epidemic, I have gathered from various sources the data of many outbreaks from 1900 to 1905, according to

TABLE II.
Small-pox Fatality Rates.—Provinces.
Epidemic 1901-5.

Place.	Time.	Cases.	Deaths.	Percentage.
Newcastle	1903-5	628	28	4.5
Tyne-mouth	1902-5	328	17	5.2
Chester-le-Street	1903-4	106	6	5.7
Wigan	1902-3	70	1	1.4
Blackburn	1902-3	141	5	3.5
St. Helens	1902-5	66	3	4.5
Sunderland	1902-3	66	4	6.1
Liverpool	1902-3	2,280	159	7.0
Manchester	1902-4	563	33	5.9
Salford	1902-4	262	12	4.6
Preston	1904-5	172	8	4.7
Macclesfield	1903-4	69	5	7.2
South Shields	1902-5	272	14	5.1
Oldham	1902-3	413	32	7.7
Chadderton	1902-5	144	5	3.5
Stockport	1902-4	159	15	9.4
Warrington	1903	86	4	4.7
Heckmondwike	1904	91	5	5.5
Batley	1904	103	6	5.8
Dewsbury	1904	552	57	10.3
Bradford	1901	28	—	0.0
Halifax	1903	141	6	4.3
York	1902-4	39	7	17.9
Leeds	1902-5	690	35	5.1
Hull	1903-4	184	10	5.4
Sheffield	1902-4	141	5	3.5
Derby	1903-4	255	5	2.0
Nottingham	1903-5	479	17	3.5
Bristol	1903-6	125	4	3.2
Birmingham	1902-5	364	17	4.7
Leicester	1902-4	731	30	4.1
Cardiff	1901-5	96	5	5.2
Swansea	1902	187	33	17.1
Porlsmouth	1902-5	20	1	5.0
Ilford	1900-4	82	9	11.0
County Palatine of Lancaster	1902-6	2,502	118	4.7
Durham County	1902	35	1	2.9
West Riding (including Dewsbury)	1903-4	3,296	215	6.5
Northamptonshire	1902-3	44	9	20.5
Osselt Union	1902-3	519	61	11.8
Nottinghamshire	1903-5	376	14	3.7
Edinburgh	1900-4	191	16	8.4
Glasgow	1900-2	2,255	283	12.5
	1903-4	1,158	88	7.6
Dundee	1902-4	175	12	6.9
Rest of Scotland	1900-4	2,844	235	8.3
Dublin (H)	1905-4	243	33	13.6

* If 1870-73 be taken instead of 1870-72 the figures are: 16,080 cases, 3,024 deaths = 18.8 per cent.; and if 1892-95 be taken instead of 1893-94 the statistics are: 4,759 cases, 381 deaths = 8.0 per cent. There is a slight discrepancy as to the 1870-72 rate; the data give 18.6 not 18.8 per cent.

the spread of the disease in different localities. Table II records the figures. It will be seen that, as contrasted with London's reversion to a higher fatality rate, there was a further and appreciable decline from 1892-95, many of the rates being round about 5 per cent., and several well below that figure—even 2, 3 and 4 per cent.

These facts, with due reservation for vaccination and diagnosis, show unequivocally a milder epidemic type in the provinces at this period than had been known since reliable statistics on any extensive scale became available.

In the metropolitan area itself in 1903 there was some prevalence, not, however, by extension from 1901-2, but by infection from the provinces and elsewhere. The cases were 355, and, allowing for a few remaining in the wards at the end of the year, the fatality rate was only 3 per cent. In Middlesex at this time the disease was no less mild, there having been in 1903-5, 185 cases with 5 deaths, or 2.8 per cent.

Clinical Observation of Small-pox.

The tables of statistics which I have submitted do no more than support clinical observation of the change that has taken place in small-pox. They are a convenient method of setting forth broadly what every physician whose experience of the disease goes back far enough has with his own eyes seen of the contrast between past and present. And even so, some small reservation as to change of type has to be made in accepting the teaching of the statistics. Comparison of fatality rates at the present day with those of (say) only twenty or thirty years ago must be affected by the fact that systematic contact hunting brings out many very slight cases which but for the hunting would not be discovered at all. In these days such cases are notified and go to hospital, and increase the quantum of mild cases. Similarly, the contact hunting produces a large number of cases vaccinated just too late for complete protection, but greatly modified by the vaccination after exposure. This must now be a common experience where sporadic groups are being dealt with in towns and in factories and workshops. The result is also to increase the total of the mild cases in hospital, and so affect the fatality rates.

Two Types—Severe and Mild.

Concerning the sources of the two different types of small-pox occurring simultaneously in Britain in the epidemic years following the beginning of the twentieth century, it is necessary to look abroad for enlightenment. Fortunately, since I began to prepare these lectures, the Local Government Board has published an invaluable collection of statistics by Dr. Bruce Low relating to small-pox in many parts of the world, and so I am able to put aside in favour of his authentic official figures much material which I had been laboriously collecting.

European or African Type.

Dr. Bruce Low's report (p. 26) shows that in France after a period of comparative quiescence in 1897-99, small-pox became active in the years 1900-1903. In Paris in 1900-1 there were 4,505 cases, with 758 deaths, or 16.8 per cent. This happens to be exactly the London fatality rate of the same period, and in his report for 1902 to the London County Council Sir Shirley Murphy says (p. 28): "In summary it may be stated that during 1900 and 1901 small-pox had been frequently introduced into London from abroad, especially from Paris." Paris and Marseilles were the chief centres for spread of infection in France at this time, there having been in 1899-1900 more than 1,000 deaths in Marseilles. Spain also was heavily attacked by small-pox in 1900-1903. Madrid had 1,566 deaths in 1900-1, but the number of cases is not recorded. In Italy in the four years 1901-4 there were 60,532 cases of small-pox, with 14,951 deaths, or 24.7 per cent. These three countries, Spain, France, and Italy, with their extensive Mediterranean seaboard, are constantly under risk of infection from North Africa, where small-pox is very prevalent. There is every probability that the London small-pox of 1901-2 had the origin indicated by these facts, and the type of disease supports that view.

American Type.

In searching for a source of the much modified small-pox which prevailed in the provinces in the same period,

we have to look to the New World. In Trinidad in 1902-3 mild small-pox was imported from Venezuela, and in 5,256 reported cases there were only 28 deaths, or 0.53 per cent. For a time there was much difference of opinion as to the nature of this disease, but it appears ultimately to have been accepted as variolous.¹ In the United States small-pox of a very mild type has prevailed for many years. Returns are incomplete, as some States do not furnish reports, but the following comprise the records for the years with which we are dealing at the moment:

Year.	Cases.	Deaths.	Percentage.
1901	48,206	1,065	2.3
1902	55,857	2,111	3.8
1903	40,581	1,382	3.4

How this American type may have reached this country is illustrated in the following note addressed to the *Lancet* and *British Medical Journal* in 1901 by Dr. Boobbyer on an outbreak of small-pox at Mormon head quarters in Nottingham.

Small-pox has recently been introduced into the Mormon head quarters in this city, apparently by letters or other fomites from Salt Lake City. The first of our cases appears to have had a very mild attack and slight rash about February 1st; the second, also a very slight one, had a rash commencing about February 21st. The third and fourth were somewhat more severe than the preceding, but still very slight, and their rashes dated from about March 24th. The fifth, another extremely mild case, began to develop a rash on April 14th, at which date I first became aware of these facts, and at which also the entire household were removed to our isolation hospital. . . . I regret to say that the outbreak has been the means of communicating small-pox to Leicester, Loughborough, Derby, Sheffield, Liverpool, and probably some other places, though in single cases only, I believe, in each instance up to the present. The special cause of this latter general dissemination was in a small Mormon conference held in Nottingham on March 24th, at which date the rashes of the third and fourth local cases were developing.

The first case among the Mormon missionaries occurred about twelve days after receipt by them of a parcel from Salt Lake City. Mormon activities, it may be mentioned, are asserted also to have been responsible for New Zealand small-pox in 1913-14, a Mormon missionary being the reputed agent.

In 1901 Dr. Meredith Young had a very mild case in Stockport, infected from raw cotton exported from Texas, and, in reply to inquiry, the State medical officer explained that small-pox was quite prevalent, but so mild as to need no medical attention nor cessation of work.

In the United States this much modified small-pox has continued, and the fatality rates are even lower than those of 1901-3. In fact, from 1906 to 1915 (the latest year of Dr. Bruce Low's statistics), the rate has not in any year reached 1 per cent. of the cases, so that the Trinidad experience has been repeated. In the States the disease in this form is now looked on as endemic, occurring here and there like scarlet fever, and comparatively little heed is given to it.

In Canada also benign small-pox has been the type in recent years. In Ontario, in 1912-15, in 2,446 cases there were 11 deaths, or 0.45 per cent.—that is, only one death in 222 cases.²

New South Wales has shared in the mild American type of the disease. In 1913-14 there were 1,661 cases, with only two deaths. Infection is supposed to have been imported from Vancouver, where the same type prevailed.³ Recent facts relating to small-pox in this country still show a mild type of disease.

Intercurrent Severity.

Intercurrently with this modified small-pox there have been in the United States local outbreaks of high severity. Pittsburg in 1912 had 33 deaths, or 27.3 per cent., in 121 cases, and other local rates of 25.6, 25.0, and 28.6 are mentioned. New York City in 1901-2 had 3,480 cases with 720 deaths, or 20.7 per cent. Similarly Ontario had, a few years before the low fatality rates above mentioned, a very different kind of small-pox, Dr. Hodgetts, secretary

to the Provincial Board of Health, writing on mild small-pox (Toronto, 1905), gave the following figures for certain outbreaks in different parts of the province:

Year.	Cases.	Deaths.	Percentage.
1881	202	67	33.0
1882	146	16	10.9
1883	54	13	26.5
1891	41	9	30.0

In our own country in 1899-1900, just before the mild epidemic began, the city of Hull had a considerable epidemic of a severe type. The total cases were 943, and the deaths 163, or 17.3 per cent. With regard to possible origin, the medical officer writes in his report for 1899:

The great emigrant traffic through this city and port, especially from Southern Russia, may, in spite of the vigilance of the authority, have contributed a source of infection, for among the emigrants, persons had been frequently recognized as having recently had small-pox, and possibly the means of their disinfection had not been altogether efficient.

In 1903-4 Hull had a share in the then prevailing epidemic, and the type of the disease was that occurring generally throughout the provinces. The cases were 184, and the deaths 10, or 5.4 per cent.

Glasgow had a somewhat similar experience. An epidemic began there in April, 1900. The first case was that of a seaman on a vessel which arrived in Glasgow on March 18th from Bombay. The disease was confluent small-pox, and on discovery the symptoms indicated that his attack was well advanced towards the end of the second week. The effects of this source of infection did not extend beyond August, 1902. The fatality of the disease originating thus in 1901-2 was comparatively high—12.5 per cent. For more than a year from August, 1902, there was practically no indigenous small-pox in Glasgow. In September, 1903, however, a fresh epidemic began, the disease being introduced by navvies from the Talla Water-works in Peeblesshire, and the fatality rate for 1903-4 was 7.6 per cent.

Bristol in 1908 had an introduction of small-pox of a severe type, from the Sea of Azov in Eastern Europe; the cases numbered 61, with 12 deaths. Again in 1915 a case introduced from Spain to the port of Bristol gave rise to an exceptionally severe outbreak of 32 cases, with 7 deaths. (Spain, as noted above, is apt to be infected from North Africa.)

Dr. Franklin Parsons⁴ relates that:

In one town in Lancashire there were outbreaks from two sources concurrently: one could be traced to the cases imported from America, of a mild type, while another was traceable to the infection which had come across from Paris via London, and that was severe.

Mainly, however, small-pox in this country has been attenuated in type in quite recent years. Cardiff in 1916 had 51 cases with 3 deaths. In March and April, 1918, an outbreak amounting to 33 cases occurred in the East of London. Air raid shelters played a part in the spread of infection. The medical officer of the Local Government Board reports that "the type of the disease in this outbreak was very mild and no patient died except the presumed first one." Much vaccination and revaccination resulted in the locality.

The remarkable change in the type of small-pox from severe to mild, as recorded above, has occurred on the whole somewhat suddenly. It is true that the Metropolitan Asylums Board figures already quoted show some diminution between 1871-2 and 1884-5, but the drop from 15.9 in 1884-5 to 8.0 in 1892-3 is the first really striking change, and, except in London, there is a further appreciable fall in 1901-5.

Improved hospital accommodation and medical treatment and nursing and diagnosis cannot account for the change in this country, still less for the Trinidad, American, Canadian, and New South Wales experiences.

It is common knowledge that when small-pox is absent vaccination diminishes, and the occurrence of extraordinarily low fatality rates during and after a period of years in which vaccination has been less practised testifies further to the mildness of type of the existing disease.

Relation of Types.

The question naturally occurs whether these two different types of small-pox—the African and the American—are really the same disease or whether they have some relation to each other more or less analogous to that which exists between typhoid and paratyphoid. It is safe to say that vaccination supplies the answer. So far as I have seen, the great bulk of the evidence is to the effect that vaccination prevents the mild type just as it prevents the severe type. The relationship of vaccinia to the two types appears to be identical, and Jenner's conviction, which originally was much disputed, that variola and vaccinia are essentially the same disease, is now almost universally accepted. Evidence similar to that of the preventive power of vaccination against the mild and the severe infections has its parallel in evidence that the one infection prevents the other—the severe preventing the mild and vice versa. The conclusion, therefore, is that both infections are variolous. As Chapin said when mild small-pox was spreading in America:

"The crucial test of the identity of the two forms is, however, to be found in their immunity relation. Persons who have had small-pox or who have been successfully vaccinated are at least as immune to the mild as to the severe type. It is also found that persons who have had the mild type are equally immune to vaccination."

When the mild disease first showed itself prominently it was naturally regarded as a "sport" of small-pox, the sport being the exceptional form. If, however, it should now gradually displace throughout the civilized world the severe form, then by and by the severe form would have to be regarded as the sport and the mild form as the normal—but that is a speculation which would carry us far into the future.

What are the conditions which cause small-pox to assume high virulence in one part of the world at one time and attenuation in another part of the world at another time, is a question of much epidemiological and practical interest, and is well worthy of study, say, by the Medical Research Committee. Comparison could be made of the conditions in Africa on the one hand, and in Venezuela and Trinidad on the other hand. Quite probably, high aggregation of cases in houses, or hospitals or towns, or such overcrowding and misery as existed in Paris at the time of the siege in 1870, may have favoured development of virulent or septic types, while opposite conditions may have the opposite tendency.

FATALITY OF NATURAL SMALL-POX.

The statistics which I have given include vaccinated and unvaccinated, so that the gross figures for individual towns with differing amounts of vaccination, if compared with each other, are somewhat fallacious. Taken broadly, however, and looking to the very considerable number of places included in the tables, they do not, I think, contain any important error, when applied to the country as a whole, in showing the fatality rates at successive periods. It is obvious, too, that the remarkably attenuated or American type of small-pox, which has so extensively replaced the severe or African type in recent years, is a reality, independent of statistics. And these lectures are addressed to a medical audience, which does not require to be convinced of the protective value of vaccination.

All the same, the epidemiological question of the fatality rate of natural small-pox at one period and another is of much interest. There being no vaccination in the eighteenth century, fatality rates,* so far as they exist, relate to natural small-pox only. Unfortunately, reliable data for that century are scanty, as the great majority of records are of deaths and not of cases. For the rest, it is necessary to eliminate the influence of vaccination since its introduction at the beginning of the nineteenth century, and to take note only of the fatality rates in the unvaccinated. But the age incidence of small-pox has an important influence on the fatality rate in any given epidemic. It is a very fatal disease in infancy, the fatality diminishes rapidly to a minimum in the third quinquennium of life—the age period 10 to 15 years being the most resistant to death by variola—then the rate increases during the remainder of life. The fatality rate, therefore, of natural small-pox, assuming the type of the disease to

be fairly constant, would yet vary with the interval between epidemics. If the intervals were only about five years the rate would be high, because the cases would be mainly those of children under 5. If, on the other hand, an epidemic took place after an interval of, say, fifteen or twenty years, the fatality rate would be lowered by the fact that many of the cases would be at the most resistant period of life.

Notwithstanding these difficulties, it does seem worth while to utilize such data as exist in endeavouring to discover what has been the course of natural small-pox in respect of fatality.

The Eighteenth Century.

When small-pox inoculation first came into vogue about the year 1720, various statistics were published to show the difference between the fatality rate of natural small-pox and of inoculated small-pox. The principal authority was Dr. Jurin, secretary to the Royal Society, and the general statements made are to the effect that the rate of natural small-pox was about 16 or 17 per cent. Such rates are mentioned by various writers, but how far they follow Jurin's authority, and how far they had observed for themselves, it is difficult to say. I suspect the validity of Jurin's figures because of his curious assumption that all deaths under two years of age are to be put under such headings as overlaid, chrysoms and infants, convulsions, etc., but not small-pox, so that the cause of death is really unstated. We know that small-pox in pre-vaccination times was largely a disease of children, and that early childhood is a time of high fatality. With that reservation, and the further reservation as to the possibility of some chicken-pox being regarded as small-pox, there is little choice but to accept for what it is worth Jurin's figure of 16 or 17 per cent. as the fatality rate of the period between 1720 and 1730, to which the data refer.

The next available figures relate to the London Hospital for Small-pox and for Inoculation, and it is recorded that in the period 1746 to 1763 there were 6,456 cases and 1,334 deaths, a fatality rate of 25.3 per cent. In the last quarter of the eighteenth century—say 1775-99—it is stated that the rate in that institution was 32.5 per cent. It will be noted, therefore, that the rate was increasing three-quarters of a century before vaccination began.

The Nineteenth Century.

In 1836 to 1851, 2,654 unvaccinated cases in the same hospital had 996 deaths, or 37.5 per cent. In the epidemic year 1838, there were 387 unvaccinated cases with 155 deaths, or 40.1 per cent.* But Marson, who gives these figures, points out that these rates were somewhat higher than natural small-pox ought to yield, because severer cases were often sent to the hospital, and it was sometimes overcrowded.

1870-73.—The next figures are more certain, and relate to the epidemic of 1870-73. Dr. Seaton, in his report on that epidemic to the Local Government Board published in 1875, gives the fatality rate in the hospitals of the Metropolitan Asylums Board as 44.8 per cent.—say 45 per cent. This rate, like those already mentioned, is based on so large a number of cases as to make it fairly reliable, and it appears to indicate the maximum virulence in respect of epidemic fatality to which small-pox has reached in this country during the past 200 years. This view of the extraordinary virulence of the small-pox of 1870-73 does not depend merely on statistics. Dr. Munk and Mr. Marson, the medical officers to the Small-pox and Vaccination Hospital (which was still in use at this time after the institutions of the Metropolitan Asylums Board had been opened) refer to

the severity of the disease, and especially to the number of cases of malignant small-pox, the proportion of which to other cases has been very largely in excess of anything within the previous experience of either of your medical officers.⁹

Dr. Seaton writes:

"The ratio in the hospitals of provincial and foreign towns generally has ranged from 40 to 50 per cent. among the unvaccinated and from 8 to 10 or 11 per cent. among the vaccinated—enormous rates, and attributed everywhere to the same cause—namely, the unusual proportion of malignant, black, and hæmorrhagic cases. . . ."

In hospitals at Berlin "the mortality among the unvaccinated was 81.25 per cent. and among the vaccinated

* There was no statistical confusion, so far as I have read, between natural and inoculated small-pox.

* Gregory (loc. cit.) gives 396 cases with 157 deaths in 1833.

14 per cent." In the hospital at Leipsig "the mortality among the unvaccinated was 71 per cent. and among the vaccinated (including doubtful cases) between 9 and 10 per cent."

The years 1873-84 in the metropolitan hospitals show a rather lower rate of 38.6 per cent., based on 2,169 cases and 838 deaths. (Gayton.)

1892-95.—Disregarding smaller or localized outbreaks, and turning to the next extensive epidemic in this country, that of the early nineties, the Royal Commission states that in London in 1892-93, among 409 unvaccinated cases there were 99 deaths, or 24.2 per cent. If "doubtful" cases are included the number is increased to 580, with 127 deaths, or 21.9 per cent. For the provinces I have taken out the figures for a large number of populous places with considerable prevalence of the disease in 1892-95, and find that in 2,550 unvaccinated cases there were 662 deaths, or 26.0 per cent. In various outbreaks the reports distinguish between the doubtful and the unvaccinated. The figure just given includes the doubtful. Of these there were 261 cases, with 42 deaths. If they be deducted the particulars are 2,289 cases, with 620 deaths, or 27.1 per cent. (See Table III.)

1901-5.—Coming now to the latest epidemic of any extent—1901-5—I find that in 1,305 unvaccinated cases in the provinces there were 247 deaths, or 18.9 per cent., and that if doubtfuls are deducted the cases are reduced to 1,088 with 198 deaths, or 18.2 per cent. (Table IV). In the Metropolitan Asylums Board's hospitals in 1901-2 the Continental or African type of small-pox caused a fatality rate of 35.1 per cent. in the unvaccinated—2,278 cases, and 753 deaths.

With regard to all these rates the reservations that require to be made have already been indicated. I would be glad to see a closer and fuller collection and analysis of all available data, which quite likely would make some alteration in details, but the figures at least give some support to the thesis just indicated, namely, that beginning with the year 1720, in the absence of comparable data for any preceding period, natural small-pox gradually became throughout the eighteenth century, and up to the epidemic of 1870-73, a more virulent and fatal disease,* its maximum fatality being on a large basis of facts 45 per cent., and since then it has irregularly, yet persistently, diminished in fatality until we come to the epidemic of 1901-5 with its unvaccinated rate of 19.3 per cent.

Since 1901-5 the disease has been so little prevalent as to furnish no sufficient material for a further statement of reliable fatality rates, but such figures as exist, broadly looked at, continue to point in the same direction. Indeed, if the American type of disease be regarded as having

TABLE III.

Provincial Small-pox Fatality Rates in the Unvaccinated,
(Including Doubtful Cases.)

Epidemic 1892-95. All ages.

Place.	Time.	Cases.	Deaths.
Dewsbury	1891	350	41
Warrington	1892-3	15	1
Leicester	1892-3	158	10
Liverpool	1892	21	1
Birmingham	1893-4	437	127
Aston Man.	1893	16	1
Prigbhouse	1892-3	36	1
Manchester	1892-4	2	31
Salford	1892	35	1
Halifax	1892-3	1	1
Leeds	1892	88	17
St. Albans	1893	10	1
Keighley	1893	41	1
Bradford	1893	229	1
Wakefield	1893-4	239	1
Nottingham	1893	1	1
Hinckley	1891	1	1
Willenhall	1891	1	1
Bristol	1892-3	41	21
Oldham	1894	1	1
Derby	1894	1	1
Dublin	1891	281	1
Deduct doubtfuls			662 = 26.0%
			42
			620 = 27.1%

TABLE IV.

Provincial Small-pox Fatality Rates in the Unvaccinated,
(Including Doubtful Cases.)

Epidemic 1901-5. All ages.

Place.	Time.	Cases.	Deaths.
Ossett Union	1902	133	37
Reeles	1902-3	3	2
Leeds	1902-5	185	18
Nottingham	1902-3	24	3
Newcastle	1903-5	138	14 (or 1902?)
Stockport	1902-4	40	6
Bradford	1900-1	8	0
St. Helens	1903	4	0
County Palatine of Lancaster	1904	125	11
Cardiff	1901 and 1903	14	1
Swansea	1902	16	7
Halifax	1903-4	40	5
Wigan	1902-3	12	1
Salford	1903	31	3
Oldham	1902-3	140	11
Tynemouth	1902-3	44	2
Pelling-on-Tyne	1903-4	41	8
Glasgow	1900-1	168	88
	1903-4	155	37
Dublin	1903-4	67	21
Deduct doubtfuls		1,388	275 = 19.8%
		217	49
		1,171	226 = 19.3%

replaced the small-pox of former days, the pestilence has been reduced to a mere shadow of its old self in respect of its ability to kill those whom it attacks. We must never forget, however, that intercurrently the African type of the disease appears every now and then, even in areas where the attenuated strain is so well established as to be considered endemic; and we dare not prophesy, but can only hope that the mild may ultimately displace the more virulent form of variola.

(b) INFECTIVITY.

Two factors go to make up the inherent capacity of a case of small-pox to convey infection to persons within the range of its influence. One is the character of the infecting organism which, reasoning by analogy, is assumed to be the *causa causans* of the disease. The other is the amount of the *materies morbi* in a given case. In a word, the two factors are quality and quantity.

Quality.—Unfortunately, bacteriology has not yet conclusively identified the organism. In this respect small-pox resembles measles, whooping-cough, and typhus, but differs from diphtheria, enteric fever, and tuberculosis. By observation, however, we know that those infections whose organism is undiscovered differ from each other in the certainty of their infecting power. I do not myself recollect ever seeing a sporadic case of measles. A single case means an outbreak. Whooping-cough is not so readily kept under observation by the health officer, but my impression is that it must be almost as certainly infectious as measles. In respect of scarlet fever the position is very different. It often occurs sporadically, and a single case does not necessarily portend an epidemic. Either the disease may die out, or dropping cases may continue to occur for weeks or months before there is any epidemic. In diphtheria, whose organism has been studied, Dr. Davies of Bristol found that a marked increase of infectivity, under which sporadic cases were supplanted by epidemic prevalence, was accompanied by a definite change in the characters of the organism.¹⁰

Small-pox has more resemblance to scarlet fever than to measles in respect of the possibility of sporadic cases. In Kilmarnock in the eighteenth century (where it should be observed, however, that only deaths and not cases are recorded) there were, in inter-epidemic periods, occasional deaths which formed no part of an outbreak. In well-defined epidemics occurring every four or five years in a town with a probable population of over 4,000 the deaths ranged from 45 to 84, but between some of the epidemics there was an occasional sporadic death, and in one year a straggling prevalence over seven months yielded 8 deaths without attaining the dimensions of an epidemic. In Glasgow I have heard of a man with a fully developed and abundant eruption being discovered seated in a place

* I argued similarly in *Vaccination vindicated* in 1887, and pointed out that Dr. Munk had advanced the same view in 1891.

of public resort (George Square), and it was found that for about a week he had been freely exposing himself whilst in this condition. Yet not a single case of small-pox resulted from this missed case. That was a most exceptional occurrence, but seems to show an absence of infective quality in that particular case.* Such occurrences are more likely during the decline than during the rise of an epidemic. After the pre-epidemic period referred to in the next paragraph has passed, the small-pox of a rising epidemic seems more infectious, and with more carrying power, than that of an epidemic which has passed its meridian. Commonly, but by no means invariably, rise and decline are associated with respective periods of the year, prevalence rising from about December to May and falling from about June to October.

Small-pox epidemics sometimes begin very slowly, and sometimes break out very suddenly. In Kilmarnock in the eighteenth century there were instances of both sorts, but most of the outbreaks were pretty sudden. Deaths, not cases, of course are the criterion in prevaccination times. Dr. Seaton in 1868 called attention to this feature of slow onset of epidemics which had occurred in Cardiff and Sheffield in 1857. He regarded it as characteristic of all small-pox epidemics.

In London in 1901 the epidemic spread was very slow. At the beginning of the year there was one case in hospital, and the following were the monthly admissions:

January	2	July	14
February	1	August	82
March	0	September	167
April	0	October	272
May	1	November	438
June	5	December	761

Taking May as the onset, it was not till August that the dimensions of the outbreak became very noticeable.

The Gloucester epidemic of 1895-6 had a similar slow onset. Here are the figures:

Month of Outbreak.	Cases.	Month of Outbreak.	Cases.
1st	1	10th	504
2nd	—	11th	733
3rd	3	12th	283
4th	1	13th	122
5th	3	14th	15
6th	7	15th	—
7th	12	16th	—
8th	52	17th	—
9th	145		
		Total	1979

On the other hand, Edinburgh furnished an example of a small-pox outbreak which developed quickly. Owing to dispersion of navvies from Talla Waterworks (in the county of Peebles), where small-pox existed, four cases occurred in Edinburgh in December, 1903, and the monthly progress of the outbreak was as follows:

December, 1903	4	June	10
January, 1904	34	July	4
February	63	August	nil
March	32	September	nil
April	14	October	1
May	10		

Quantity.—Leaving now what, after all, is mainly conjecture as to the quality of the contagium vivum of small-pox, I turn to the much clearer question of the influence of quantity. It is an accepted fact that the eruptive material of small-pox, both cutaneous and buccal, is the infective agency, and there is no need to refer to the proof which inoculation affords of the truth of the proposition that small-pox vesicles and pustules and crusts are the *materies morbi* of the disease. So far, therefore, as quantity is concerned, the amount of the eruption, not merely on the skin, but also on the mouth and throat, in any given case is a measure of its inherent capacity for spreading infection, if opportunity be given by the infective material coming into due relationship to susceptible subjects. In the vaccinated, however, an originally copious eruption sometimes aborts remarkably, with corresponding effect on the amount of infective material.

It is not necessary to search through detailed reports of hospitals and of health officers to demonstrate that there has been in recent years a great diminution in the total average amount of eruption per case of natural small-pox. Broadly speaking, eruption and fatality rate go hand in

hand. Confluent, discrete, and sparse eruption are accompanied by characteristic differences in case mortality, and this is so obvious that the proposition need not be laboured. It has been shown above that the fatality of small-pox is greatly reduced in recent years. Therefore the amount of eruption must have been greatly reduced, and in the same proportion the amount of infective material has been lessened. Small-pox, therefore, has been and is a much less infectious disease than it was half a century ago.

(c) PREVALENCE.

Fatality being reduced, and infectivity being reduced, it follows that, other things being equal, prevalence must also have diminished, and Dr. Bruce Low's report gives abundant evidence that this is the case.

In England and Wales the deaths have remarkably diminished. In five successive decades they have been:

1867-76	58,614
1877-86	18,026
1887-96	4,892
1897-1906	4,763
1907-16	139

The total notified cases in the years 1911-17 have been only:

	1911.	1912.	1913.	1914.	1915.	1916.	1917.
Totals notified	295	123	115	65	90	149	5
Of which in port towns	20	72	48	10	31	55	2
In port sanitary districts	30	12	25	7	12	14	1

These are very striking figures, showing that in the seven years small-pox has obtained almost no hold in the country, even when repeatedly introduced at seaports. In London the notifications since 1905 (after the epidemic had terminated) have only 1-11 in successive years to 1916 inclusive, 74, 31, 8, 4, 21, 7, 72, 6, 4, 21, 3, and 1. In Liverpool from 1904 to 1916 inclusive there have been only 144 cases with 4 deaths, and the last three years of this period have had only two cases, neither fatal. In Edinburgh and Glasgow in the five years 1912-16 inclusive there has not been a single notification, and in the twelve years 1905-16 the total cases in the two cities have been 37, with one death. In Ireland in the twelve years 1906-17 there has been one death.

On the Continent the Scandinavian countries have shared in Britain's remarkable freedom from small-pox, and so also has Holland. Sweden had only 18 deaths in the twenty-two years 1895-1916. No way in the sixteen years 1899-1914 had 376 cases with 27 deaths, or 7.2 per cent. Denmark had 18 deaths in the twenty-five years 1892-1916. Its cases were about 300, so that the fatality rate was about 6 per cent. Holland had 124 deaths in the twenty years 1897-1916. The number of cases is not stated. Belgium has had much small-pox, but it has greatly diminished since an epidemic early in the present century, culminating in 1903, in which year there were 1,630 deaths in cases estimated at 10,000, which gives a fatality rate of over 16 per cent.—very similar to the rates in Paris and London in the same epidemic.

In France there has been no such complete disappearance of small-pox, though the deaths in the six years 1908-13 (the latest available data) were only 939. For Paris the figures are known up to 1916 inclusive, and in the four years 1913-16 the cases were 103 and the deaths five. In the Paris epidemic of 1900-1 it has already been noted that the fatality rate was the same as London's, 16.8 per cent. In subsequent years it has been much less, the cases having been 4,773 and the deaths 399, or 8.4 per cent. In Marseilles there has been very considerable prevalence, and in 1906-7 the fatality rate appears to have been very high, but there have been few cases from 1908 to 1915.

In Spain there has been much small-pox, but details are vitiated by small-pox and chicken-pox being classified together. Portugal also has had much small-pox. In Switzerland prevalence has diminished since 1905, though the fatality rate has been 13 per cent., the cases having been 345 and the deaths 45. In 1900-1 there were 56 cases and 67 deaths, or 11.8 per cent.

In Italy the disease has been very prevalent and the fatality high. In the twenty-nine years 1888-1916 there

* Dr. Killick Millard, in his Leicester report for 1902, mentions two or three cases of the sort.

were 320,161 cases and 81,289 deaths, or 25.3 per cent. In the last three years of this period, however (these being war years as it happens), prevalence was much less and the fatality rate low—2,126 cases and 57 deaths, or 2.6 per cent.

Small-pox in Germany will be considered in the next lecture.

In Austria up till 1900 there was heavy prevalence with fatality rates of 20 to 40 per cent. From 1901 to 1914 inclusive the disease was at a low ebb, with fatality rates much below the previous level, but in 1915 and 1916 there have been nearly 50,000 cases, though the deaths are not stated.

Hungary, like Austria, had much small-pox, but there has been very regular diminution from 15,470 deaths in 1887 to 81 deaths in 1912, the last year for which figures were obtained. It is probable that the disease has had some prevalence during the war, though Budapest is the only town of which that can be said with certainty.

In Russia there is a great deal of small-pox, with apparently a very high fatality rate, though there is probably some fallacy owing to incomplete returns of cases.

The above facts as to the continent of Europe, taken from Dr. Bruce Low's report, show that while in some of the countries there has been much less small-pox in recent years, in others there is still a high prevalence, and the constant intercourse between the United Kingdom and the Continent maintains a degree of risk which prevents any sense of security against successful invasion by the disease. Also, there is always a minor risk of small-pox by cotton from America, and by paper or other textile fabrics, as exemplified in Dr. Macewen's reports on outbreaks in cotton mills in Lancashire.

But, reverting to our own country, during the last half-century there has been, with the exception of the metropolitan epidemic of 1901-2, a great diminution in the fatality and the infectivity and the prevalence of small-pox. This diminution has progressed at an increasing rate of speed. In the latter part of the half-century, and in particular since the mild epidemic of 1901-5, the country has shown unparalleled freedom from the disease, not merely in respect of fatality, but also in respect of prevalence.

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FUNCTIONAL PARALYSIS OF THE DIAPHRAGM IN TWO CASES WITH ACCELERATION OF RESPIRATION.

BY

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(From the Physiological Laboratory, University of Glasgow.)

ATTENTION has been directed recently to the rapid, shallow type of breathing in late cases of gassing, and Haldane has associated the condition with an exaggeration of the Hering-Breuer reflex. The condition has also been observed in cases in which nervous symptoms have developed as the result of shell-shock or other disturbance.

The observations made upon two cases at Oakbank Military Hospital seem to indicate that a paresis or paralysis of the diaphragm, the result of functional disturbance of the centre of the phrenic nerves, may account for the acceleration in breathing in some cases.

CASE I.

Pte. J. (nine months' service), admitted to hospital with a diagnosis of debility. He was a thin, undersized man, easily excited and nervous when spoken to. The respirations were rather rapid (28), the breath sounds somewhat feeble all over the chest, with a few moist râles at bases of lungs; he had neither cough nor sputum, the pulse rate was 80, and, beyond a localized basal bruit, there was no other abnormality of the heart. On the seventh day after admission he showed marked tremors of the hands and legs, specially severe in the right sartorius muscle. The knee-jerks were slightly exaggerated,

with occasional slight ankle clonus in the right leg. Tactile and thermal sensation and eye reflexes were normal. On the eighth day it was noticed that the respirations were becoming gradually more rapid and fluctuating very much in rate (50 to 80). Ten days later the respirations were still very variable and usually extremely rapid. The breath sounds were much more harsh than formerly, but no râles were audible. The pulse was also very variable in rate (usually about 100), and he developed a transient albuminuria, which lasted three days. Observations on the thirty-fourth day show that the legs as a whole were now extremely tremulous, and the tremor of the right sartorius was merged in the more general one. The knee-jerks were much exaggerated, but no ankle clonus could be elicited, and the plantar reflexes were sluggish. No change in the condition of the chest was observed, but the respirations were more continuously rapid and less variable in rate (80 to 90). Careful charting of the rate showed that the increased rate was only present during the day, and practically disappeared during sleep.

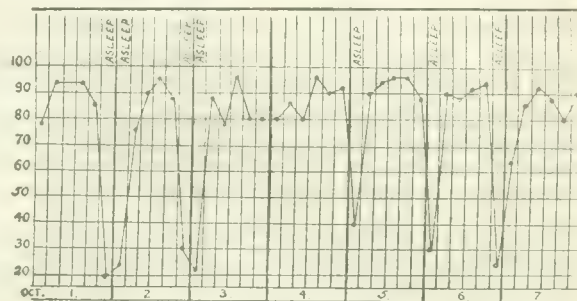


CHART I.—Respirations in Case I.

By the 106th day, although the patient was allowed up and could go about the ward quite freely, the high respiratory rate with a fall to normal during sleep still continued; the tremors of the hands and legs were still very marked, and the former condition of reflexes was maintained. As the patient showed no tendency to improve, he was transferred to a special hospital for neurasthenics, and unfortunately no further information has been obtained.

CASE II.

Pte. Y., admitted to hospital from France, where he had been for five weeks, gave a history of fits as an infant, intermittent otorrhoea since childhood, acute rheumatism and acute pneumonia six years ago during the same winter. He had been rejected for the army in 1915, owing, he says, to neurasthenia, but was accepted in 1917.

On admission he complained of difficulty in breathing, especially when lying down, discomfort in the cardiac region, and of occasional attacks of pain in the arms and legs. The condition was of gradual onset, and became noticeable about three weeks before admission—that is, about two weeks after going to France. He was described on that date as a very pale man of moderate physique with enlargement of the area of cardiac dullness—apex beat in fifth space in nipple line. No thrill. No bruit. Second sound slightly accentuated. Rhythm regular. Tachycardia, but not extreme—96. Respirations very laboured, numbered 50 per minute, and in consequence had great difficulty in expressing himself in speech. There was a slight prolongation of respiratory movements in a small area close to the edge of the sternum in the third right inter-space, and the sounds in this area were rather moist, but no dullness on percussion could be appreciated. There was no sputum and no pyrexia. There were no tremors. The pupils were moderately dilated. Reflexes normal. Patient was a very heavy cigarette smoker, and his smoking was drastically curtailed on his first admission to hospital. During his residence little change was noticed in his condition; the rapid breathing persisted, and was present both while awake and asleep. The tachycardia still continued, and the following chart shows graphically the state of matters:

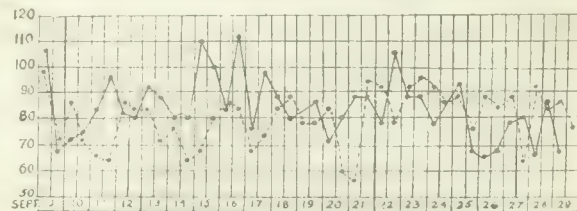


CHART II.—Respirations in Case II. Plain line—respirations. Dotted line = pulse.

He was transferred to a special hospital for neurasthenic cases, and has since been discharged from the army on account of "functional nerve disease." The respiratory movements are still rapid, but he is able to move about slowly.

At the request of Professor Noël Paton graphic records of the chest and abdominal movements were taken. This

was done by placing a small balloon on the chest and another on the abdomen, held in place by broad binders, and with each was connected a Marey's recording tambour. The tension was adjusted to give the best range of movement. The tracings thus obtained show extensive and rapid movements of the chest, but only a very slight movement, a mere tremor, of the abdomen, which subsequent investigation clearly demonstrated was propagated from the chest. As controls, tracings were taken in the same

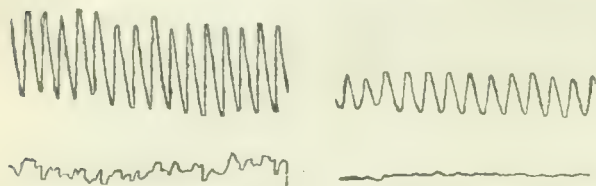


FIG. 1.—Thoracic and abdominal respirations in Case I. Rate 100. FIG. 2.—Thoracic and abdominal respirations in Case II. Rate 88.

way from normal men. It will be observed that it is possible for a normal person to breathe at the rate of 75 a minute or more without showing any sign of irregularity of respiratory movements, or any decrease in the action of

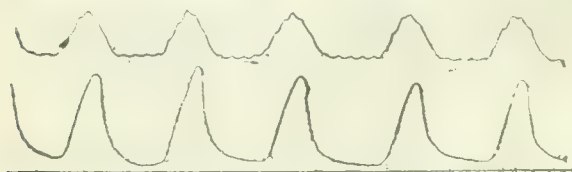


FIG. 3.—Thoracic and abdominal respirations from a normal man taken in the same way as Figs. 1 and 2. Rate 20.

the diaphragm as indicated by the amplitude of the movements of the abdomen. The tracings taken from the two patients, then, seem to indicate a failure in the action of the diaphragm, and it is probable that the acceleration

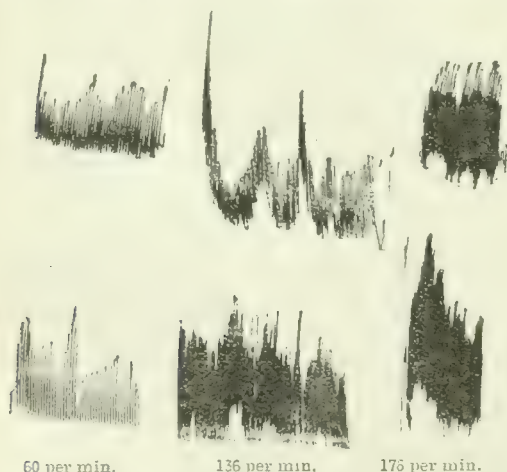


FIG. 4.—Thoracic and abdominal respirations from a normal man breathing 60, 136, and 176 times per minute, to show the absence of any decrease in the abdominal movements.

in rate was due to this. We found no discomfort was caused by breathing at 75 a minute, but when the rate was increased to about 170 a minute it could not be maintained for any length of time. So long as it was maintained it showed no decrease in the abdominal movements.

G. Gerhardt¹ has recorded some cases diagnosed as having paralysis of the diaphragm. Of one case he said that the patient breathed shortly and insufficiently for the needs of the voice, and that he could not breathe deeply. In some of his cases improvement or cure was said to have followed faradic or galvanic treatment of the phrenic nerves. Dr. Cowan,² reporting on a case diagnosed as peripheral neuritis in a fat, flabby woman, possibly an alcoholic subject, says:

In the first week of December the diaphragm was found to be paralysed. The costal arch was unduly widened, the epigastrium fell back with each respiration, and the hernia no

longer descended into the sac; cough was feeble and imperfect, and largely replaced by choking fits. There was, however, no difficulty in breathing or cyanosis, and the respirations only numbered 26 per minute. The apex beat had swung outwards into the axilla, and the left chest was everywhere dull to percussion, and the respiratory murmur was extremely feeble, and accompanied by a few fine râles.

It would seem from this case that paralysis of the diaphragm is not necessarily accompanied by any marked increase in the rate of breathing.

Our thanks are due to Captain Torrance, R.A.M.C., for giving us permission to publish, and to Dr. A. G. Waddell for the clinical notes.

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A PNEUMOTHORAX PARADOX.

BY

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THERE is a fact very familiar to all who have experience in the treatment of phthisis by artificial pneumothorax which will probably appear very surprising to other clinicians. It would naturally be supposed that, when one lung is put quite out of action by the induction of pneumothorax, the patient would be very short of breath. Curiously enough the opposite is ordinarily the case. I was very much struck with this in a recent case of my own. The patient, a girl aged 16, had signs of extensive cavity in the left upper lobe, with abundant crepitations in the lower lobe. Some weeks after the induction of a left-sided pneumothorax she remarked to me quite spontaneously: "When I came to the hospital it was all I could do to get upstairs; now I can go up and down stairs quite easily."

The same thing is conspicuous in a patient whom I have now under treatment, by the kindness of Sir Thomas Oliver, in the Royal Infirmary, Newcastle-upon-Tyne. On admission she was able to talk but little on account of shortness of breath. Great improvement followed the induction of artificial pneumothorax on the left side. Some time after this she was allowed to go to a concert which was held at Christmas time in one of the wards. When I asked her if she had breath enough to laugh, she replied with a very pleasant exhibition of her capability in that way.

These are given merely as instances of what is an ordinary experience in successful cases. The explanation of the paradox is, no doubt, that the dyspnoea in phthisis is not mainly mechanical and due to the amount of lung tissue which is disabled by structural disease. This is the case to some extent of course. But mainly the dyspnoea is toxic. The same thing has been generally recognized by clinicians in pneumonia. A patch of consolidation in that disease may produce a degree of dyspnoea quite out of proportion to its extent. And conversely, when the crisis takes place the dyspnoea quickly abates, although physical signs may still show that a large part of the lung is not yet capable of functioning.

That an artificial pneumothorax does have the effect of reducing the output of toxins is proved by the fact that in a patient whose temperature has continued high in spite of prolonged rest in bed it may become normal within a few days of the introduction of air or gas into the pleura.

I have desired to give prominence to this effect of artificial pneumothorax in relieving shortness of breath because I apprehend that many practitioners, having patients with advanced phthisis afflicted with severe dyspnoea, are deterred from considering the induction of a pneumothorax by the fear lest the distress of the patient should be aggravated by it and the fatal termination precipitated. So far from this fear being well grounded, the truth is that provided the case is otherwise suitable for treatment by pneumothorax, that very dyspnoea, which was thought to be a contraindication, is really a condition which it is capable of relieving in a degree which cannot be expected from any other method. And it may be added that the more extensive the disease in the lung which we propose to compress with air in the pleura the less will be the strain of extra work thrown by the pneumothorax on the other lung. To immobilize

entirely a lung which is already almost incapable of function is physiologically a *vile damnum*; but from the point of view of restraining the output of toxins it may be an enormous gain.

A CASE OF ARTIFICIAL DOUBLE PNEUMOTHORAX.

BY

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In a recent edition of a popular textbook on physiology the following sentence appears in the chapter on the mechanism of breathing: "A perforation of the chest wall would mean that the lung on that side would no longer be of use; a similar injury on the other side (double pneumothorax) would cause death." This statement, along with the impression so many, as well as myself, have always entertained, that the so-called vacuum in the parietal "space" must be retained on at least one side of the thorax, seemed at variance with the continued viability of the patient in the following case.

From the use of artificial pneumothorax in the treatment of pulmonary tuberculosis it is well known that one lung may be very greatly collapsed with little or no embarrassment to respiration. Through a fluoroscope the lung, which is under great collapse, can be seen to undergo a limited respiratory movement, and even when there is a decided positive pressure of gas this lung does not entirely cease to function. I was, however, not a little surprised to find a patient breathing quite comfortably and moving about the grounds of the institution with no embarrassment, although, in the routine treatment of a case of pulmonary tuberculosis by artificial pneumothorax, I had produced a double pneumothorax of some considerable size, through a patency existing between the right and left pleural spaces.

Mr. C. was considered a suitable patient upon whom an artificial pneumothorax should be produced in order to rest the right lung, which was extensively involved and gradually becoming worse, whilst no definite active lesions were found in the left lung.

The first four introductions of nitrogen were of small amounts, averaging about 250 c.cm. each time; and these probably went into pockets between adhesions, judging from the oscillations and readings of the water manometer. But on the fifth introduction a definite pocket of gas between the base of the lung and the diaphragm was discernible through the fluoroscope.

Pressures (Water Manometer), and Accompanying Amounts of Gas Introduced.

Treatment.	Interval.	Gas.	Pressure at Start.	Pressure at Finish.
Initial	—	Oxygen 100 c.cm. Nitrogen 250 c.cm.	-8	+10
Second	1 day	N 300 c.cm.	-3	+10
Third	6 days	N 235 c.cm.	-20	+10
Fourth	4 ..	N 260 c.cm.	-8	+20
Fifth	3 ..	N 450 c.cm.	-9	-4
Sixth	4 ..	N 425 c.cm.	-6	0
Seventh	8 ..	N 700 c.cm.	-4	+6
Eighth	2 ..	N 800 c.cm.	-4	+8
Ninth	8 ..	N 1,000 c.cm.	+5	+12

After the eighth treatment the area above the diaphragm on the left side showed a slight transparency with the fluoroscope, but after the ninth treatment a very distinct pneumothorax was seen on both right and left sides, lifting the bases of both lungs away from the diaphragm. The highest part of the bases of the lungs was at the level of the fourth intercostal space in the mid-clavicular line. The patient said he was "a little short of breath," and felt that he "had gas on the stomach," but, as stated before, being an "up" patient, he continued to walk about the grounds with little discomfort.

It was obvious that the continuance of the artificial pneumothorax was not advisable; so the next day I withdrew the gas by reversing the method of its introduction.

Quantity of Gas Removed and Changes in Pressure.

Quantity of Gas Removed.	Pressure after Removal.
Initial pressure ...	+ 12
400 c.cm. ...	+ 6
600 c.cm. ...	+ 4
915 c.cm. ...	+ 1
1,175 c.cm. ...	+ 1
1,325 c.cm. ...	- 2

As soon as a negative pressure was obtained the operation was discontinued, but, as is shown in the x-ray plate, a considerable quantity of gas still remained on the right side. The gas was withdrawn at the same site as it was introduced in previous operations—namely, the eighth intercostal space in the anterior axillary line on the right side.

A study of the two x-ray plates showing the conditions before and after the withdrawal of the gas was instructive. The patency between the right and left pleural spaces was quite well defined at the time, when viewed through the fluoroscope. The extent of the involvement of the right lung was shown by the mottling of the organ. The adhesions in both lungs were well marked, and probably accounted for the marked depression of the diaphragm on both sides. Even after withdrawal of the gas the left lung showed a triangular transparent area indicating some retention.

Besides the physiological features mentioned and the anatomical peculiarity of a patency between the pleural spaces, which, of course, may have been the result of a tuberculous focus perforating the "partition" between the spaces, there is the further lesson conveyed of the indispensability of the fluoroscope, or x rays, in conjunction with the use of artificial pneumothorax, if the dangers of compressing a healthy lung at the same time as compressing the diseased one are to be avoided.

EPIDEMIC PNEUMONIC INFLUENZA AS SEEN IN MALAYA.

BY

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PNEUMONIC INFLUENZA broke out during the month of October, 1918, amongst the Tamil labour force on a rubber estate of which I was in medical charge, and was very fatal.

Lobar pneumonia is endemic in Malaya, and causes a fairly large proportion of the deaths among all classes of the community. Thus it may easily happen that the first few cases in an epidemic of this kind are regarded merely as an unusual incidence of ordinary lobar pneumonia. In this way valuable time may be lost ere precautions against the spread of the epidemic are taken.

While the disease produces a true pneumonia, there are many symptoms which serve to distinguish it from the ordinary lobar type of that disease.

The onset is usually heralded by a rise of temperature with hacking cough and a pain, which is almost invariably located by the patient in the front of the chest, and not at one side or another as in lobar pneumonia. The onset of this pain is preceded by sore throat and a nasal discharge; the latter persists during the illness. The coughing is painful, but the cough is not of the kind usually found in ordinary pneumonia. It is deep and full, and pain excited is much more generalized. The coughing occurs in long bouts, and in the intervals there is great exhaustion with the vocal breathing or groaning present in most grave illnesses. The facies is marked by an anxious look, which persists even after delirium has set in. The complexion is a yellowish-grey. The nostrils are dilated, and the reddened mucous membrane coated with encrusted haemorrhagic discharge is a notable feature in severe cases. The sputum is rusty and of the nummular form at first, but very speedily becomes more profuse and greenish-yellow, though remaining glutinous. Profuse epistaxis is common and of unfavourable import. Haematemesis and haemoptysis have both been seen in very severe cases, always as a terminal phenomenon.

The temperature exhibits a much greater diurnal variation than in lobar pneumonia, varying between 99° and 103 F., and usually touching both these limits in

each twenty-four hours. Delirium usually sets in much earlier than in lobar pneumonia, but it is very rarely violent or maniacal, even in alcoholics, but is of a muttering type, as in typhoid.

The pulse is by far the best guide as to progress in these cases. It falls in volume and increases in rate to a remarkable degree, almost as soon as the patient becomes ill. The rate rises to about 120, and in many cases that rate was maintained almost to the very end, with the pressure steadily falling. The respiratory rate is more variable, ranging from 40 to 60, or higher. The breathing differs from that in pneumonia. The breaths are deeper, and are not cut short in the way commonly seen in lobar pneumonia. The principal differences from ordinary pneumonia observed on auscultation are that practically no areas of complete absence of breath sounds are found, and the fact that all parts of both lungs are affected. Over the sternum and inner margins of the lungs loud bronchitic rales are heard, and further out, and towards both bases, coarse crepitations everywhere, with occasional patches of loud pleuritic rubbing. The sounds indicate a severe general bronchopneumonia with pleurisy. Percussion reveals areas of dullness in several parts of both lungs, or there may be a board-like dullness over a large area on both sides. The intercostal spaces are drawn in with inspiration. Deep and rapid breathing of the air-hunger type is frequently seen, and is of the gravest significance. The great quantity of sputum gives trouble very early in delirium, owing to the absence of efforts to clear the throat while coughing goes on. This leads to an accumulation of sputum in the throat which is very troublesome. The blood in these cases showed marked leucocytosis, especially of polymorphonuclear leucocytes.

Most of my patients were malarial subjects, and about 50 per cent. showed par-sites in the blood, either active reproductive forms or crescents, but the course of the disease did not seem to be affected, the mortality being equal in those with parasites and those without.

Post mortem the lungs were either entirely or in great part hepatized. The pleura was covered with pus exudate, and there were many soft adhesions and free pus in the pleural cavity; the liver showed signs of early fatty degeneration, but the other viscera were not markedly affected. There did not appear to be any characteristic change in the spleen, though enlargement due to this specific disease might have been present and not distinguishable, owing to the malarial enlargement present.

The course of the disease was generally short. The mortality was very high, and no treatment appeared to be of the slightest avail.

I tried the injection of saline intravenously and intracutaneously and by the rectum, and quinine by various routes. I also tried novarsenobenzol intravenously, and exhibited salicylates and expectorants, besides giving the usual stimulant dietary, but the course was unaffected. The condition seemed to be one of severe toxæmia from the very commencement.

As with plague, typhus, and many other of the gravest epidemic ailments, prophylaxis should be given the first and greatest attention.

THE OCCURRENCE OF MORGAN'S BACILLUS IN CHRONIC DISCHARGING WOUNDS.

BY

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THE following observations were made on wound infections occurring in a Poor Law infirmary. Here it was noticed that certain deep wounds, which were moderately clean on admission, gradually went from bad to worse in spite of careful treatment. These cases ultimately developed chronic discharging sinuses, the discharge having a peculiar colour very like that of a bacillary dysentery stool. Several of these patients were obviously suffering from a toxæmia; blood cultures performed were negative.

Cultures made from wound discharges of six of these cases revealed the presence in all of an organism identical with Morgan's No. 1 bacillus.¹ This organism was the predominant one in most instances, but other organisms, such as streptococcus and staphylococcus, were numerous.

Autogenous vaccines of Morgan's bacillus, given in two of these cases, greatly improved the wound and general toxic condition of the patient.

Where did this infection with Morgan's bacillus occur? Was it the cause of this chronic wound infection?

The points to decide were: (1) What organisms were present in the wounds on admission to the hospital? (2) What organisms gained entrance to the wounds during residence in the hospital? (3) The source of any infection developing whilst in hospital.

Technique.

Immediately on admission to hospital swabbings were taken from wounds of twenty cases. Cultures were made aëroically in broth, on agar, blood agar and MacConkey's bile-salt-lactose-neutral-red-peptone-agar, and incubated at 37° C., and on gelatine plates at room temperature for seventy-two hours. Anaerobic cultures were made in glucose broth incubated at 37° C. for four days. At weekly intervals, for as many weeks as the patient was detained in hospital, the above procedure was repeated. The stools of these cases were examined on two consecutive days for organisms of the dysentery group.

Results Obtained.

From the swabs taken on admission various micro-organisms were found, often a mixed flora, chiefly *Streptococcus viridans* and *Staphylococcus aureus* and *albus*, in one case *B. pyocyaneus*, and in another *B. perfringens*. In none of the cases could Morgan's bacillus be isolated. Examination of pus from these wounds whilst in residence in hospital revealed the presence of Morgan's No. 1 bacillus in five out of the twenty cases—that is, 25 per cent. These organisms made their appearance in two weeks after admission in four of the cases, and in the third week in the remaining one. This was the only modification found of the admission flora except in one instance, where *Staphylococcus pyogenes aureus* was superimposed.

Morgan's bacillus soon became the predominant organism in the five infected cases. In this connexion two agar platings might be mentioned. One plate developed 205 Morgan's bacillus and 26 streptococcus colonies, the other plate 226 colonies of Morgan's bacillus and 51 of *Staphylococcus pyogenes albus*, after incubation for forty-eight hours at 37° C. The characters of this Morgan-like bacillus¹ were fairly constant in all the cases observed—namely, a short Gram-negative bacillus, non-motile or feebly motile, fermenting glucose with the production of acid and a little gas, although in some there was no gas formed; slight acid production in maltose. Lactose, saccharose, mannite, and dulcife were unchanged. Litmus milk was rendered slowly alkaline from the second day without previous acidity. Indol production was distinct in all except one case. This latter organism corresponded closely with Eyre's No. 9.²

As regards the source of infection with this bacillus, all the cases which developed this condition occurred in two wards widely separated and under different medical officers. The sterilized dressings used in the wards were examined on two occasions, with negative results. Stools of all cases proved to be negative to organisms of the dysentery group.

Agglutination reaction of the bacilli isolated with the patient's own serum yielded negative results, except in one case, where there was a positive reaction to a dilution of 1 in 40 in half an hour at 37° C.

Treatment.

Wounds infected with Morgan's No. 1 bacillus responded slowly, if at all, to ordinary surgical drainage and antiseptic dressing. In four cases treated by autogenous vaccine there was marked improvement of the local and general condition. The septic type of fever and odour began to disappear usually about three to four days after the first inoculation. Four to five inoculations were found to be sufficient. The dosage of vaccines employed was:

First dose	...	100 million Morgan's No. 1 bacillus.
Second dose	...	200 " " "
Third dose	...	300 " " "
Fourth dose	...	400 " " "
Fifth dose	...	500 " " "
Sixth dose	...	600 " " "

In two cases there was a marked local and general reaction after the first inoculation, but when this passed

off there was a distinct improvement in the condition of the patient.

Conclusions.

That an infection by Morgan's No. 1 bacillus was superimposed on the wounds in this Poor Law hospital is evident from the absence of that organism in the twenty cases dealt with on admission, and its presence in five of them at varying periods after admission. The pathogenic action of this organism in wounds is evidenced by the toxic condition of the patient and the chronicity of the suppuration as compared with similar wounds from which this bacillus was not recovered; also from the fact that under treatment with an autogenous vaccine prepared from this virus the general and local conditions markedly improved. The odour perceptibly diminished from the wound in three days, and within ten days a dull and apathetic bed patient would be up and cheerily smoking, with his wound comparatively "clean."

The source of infection in the hospital is uncertain. The question of non sterile dressings was considered but threw no light on the subject; bacteriological tests all proved negative. That the source was general is apparent from the fact that cases occurred in surgical wards widely separated, and attended by different medical officers and members of the staff. This point eliminates "carrier" infection. Owing to my leaving the institution I was prevented from concluding these investigations. But as the dysentery group of the bacilli, including Morgan's No. 1 bacillus, has been repeatedly found associated with cases of asylum or institutional dysentery in this country, the suggestion arises that a Poor Law infirmary is a likely habitat of these organisms, and the infection may have occurred from the dust of the place.

Although these notes are incomplete their publication may call forth similar observations from others. Should this be the case institutions of the kind should not be used as general hospitals for troops, at least until they have been thoroughly cleansed and disinfected throughout.

REFERENCES.

¹ H. D. Morgan, BRITISH MEDICAL JOURNAL, 1906, vol. i, p. 908; *ibid.*, 1907, vol. ii, p. 16. ² J. W. H. Eyre and E. P. Mirett, BRITISH MEDICAL JOURNAL, 1909, vol. ii, p. 1227

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE NASAL PLUG AS A GUARD AGAINST INFLUENZA.

THE wearing of masks in railway carriages and crowded public rooms has been advocated as a means of protection against influenza. There is, however, a natural disinclination among most people to make themselves conspicuous by wearing masks, and rather than do this they prefer to take their risk of infection.

This objection can be met by the use of the nasal plug, which, when properly employed, is just as efficacious as the mask. All that is necessary is to carry about a piece of cotton-wool and, as occasion requires, pull from this two small plugs and insert one into each nostril.

It is important that these plugs should be made properly. Each should be big enough to fill the nostril completely, and the texture loose enough to allow of easy respiration through it. This is ensured by taking quite a small piece of cotton-wool and pulling it out so that it becomes really *fluffy* and about the size of the end of the thumb. One of these plugs is then lightly packed into each nostril so that it is just out of sight. While in place air should be inspired through the nostrils only, never through the mouth. Expiration may take place either through the nostrils or mouth. This procedure requires the minimum of attention and speech is not interfered with as this normally takes place only during expiration. If the plugs are made too thick, then, besides interfering with respiration, they render the speech stuffy as though one has a cold in the head.

They are best removed, on coming out into the fresh air, by blowing them into a handkerchief. They can then be taken home and burnt.

The use of an antiseptic wool such as cyanide is an extra precaution, but ordinary cotton-wool is more easily

procureable and answers the main purpose which is mechanical.

It should be impressed upon the public that—

1. Infection takes place by the droplet method—small particles of mucus laden with microbes which may be coughed by an infected person to a distance of three or four feet.

2. It is when within this range that the danger of infection occurs.

3. This danger is increased when the atmosphere is confined, as the air becomes more heavily laden.

4. To prevent any of these droplets from being breathed in some form of screen or filter is necessary.

H. C. LUCKY, Captain R.A.M.C.,
Bacteriologist, No. 5 Stationary Hospital, B.E.F.

MUSK IN INFLUENZA.

THE present serious epidemic of influenza, with its heavy mortality both from the disease itself and from subsequent pneumonia, reminds one forcibly of the epidemic of 1890. It also recalls to my mind a method of treatment I adopted. This was the employment of musk as a powerful heart stimulant. I used it in the form of a pill, dose 1 grain, in combination with an equal quantity of quinine, given every four hours. I cannot tell whether it was *post hoc* or *propter hoc*, but shortly after the commencement of the treatment I noticed a distinct improvement in the course of the disease, especially in the mortality from pneumonia. The drug certainly did no harm, and it would probably be worth trying in the hope that some good may come from it. The drug is certainly costly; I am told it costs 6d. a grain at the present time.

Bournemouth.

ARTHUR RANSOME, M.D., F.R.C.P.

LOSS OF HAIR DUE TO LIGHTNING.

DURING a thunderstorm in October, 1918, a house was struck by lightning and much damage done. Three children, a girl aged 9 years and two boys aged 7 and 5 years, were in the same bed on the first floor. According to the mother's statement, the children were all lying with their heads up at the same end of the bed, and all were asleep on their right side, as is their usual custom. The children were naturally frightened by the thunder and lightning, but did not suffer any harm. A fortnight afterwards the hair on the left side of their heads from the middle line downwards began to come out, and in a few days the scalp on the left side was quite denuded of hair. The right side of their heads was protected from the lightning by the pillow. At the present time (three months later) the hair is slowly growing again, and all the children are in good health. The lightning seems to have had a direct effect on the hair follicles like the x rays.

HUGH T. ASHBY, B.A., M.D., M.R.C.P.Lond.,
Visiting Physician to the Manchester Children's Hospital
and to the Salford Royal Hospital.



THE ASSOCIATION OF HERPES ZOSTER AND VARICELLA.

THE interesting article by Dr. R. Cranston Low (January 25th, p. 91) recalls a case that occurred in my practice some time ago.

Mrs. P., aged 40, was delivered of her fourth child in April, 1917, the delivery being normal. Three weeks afterwards severe pains set in in the region of the right hip, followed after a week's interval by a typical eruption of herpes zoster affecting the distribution of the twelfth dorsal and first lumbar nerves. A week afterwards several vesicles appeared on the left side of the neck. Phenacetin was administered, and afterwards morphine for the relief of the pain, which was excessive, but no other drugs were used. My friend Dr. W. H. Maidlow saw the case in

consultation with me, and we were both puzzled to account for the aberrant vesicles on the neck, but the following day the patient was covered with a rash indistinguishable from varicella, the spots being discrete, flattened, and a few umbilicated. The eruption followed the usual course of varicella, and disappeared before the original herpetic eruption.

The family consisted of husband and wife and three children (the eldest aged 6), besides the newly born infant. None of the family had previously had either herpes or varicella, and none contracted them on this occasion. The patient herself had no history of a previous attack. No precautions as to isolation were taken, and the infant remained with the mother. Varicella was somewhat prevalent in the neighbourhood, but the patient lived in an isolated dwelling, and in consequence of her confinement had not left the house for several weeks. The only child of school age did not contract varicella, and, unless one is to admit the possibility of infection having been conveyed through the agency of the doctor or district nurse at the time of the patient's delivery, it is difficult to explain the route by which it was conveyed.

Uminster.

H. DOWNES, M.B.

Reports of Societies.

PSYCHIC SECRETION.

At the quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland, held in the rooms of the Medical Society of London on February 20th, the President, Lieut.-Colonel JOHN KEAY, M.D., made sympathetic reference to the death of a past-president of the association, Dr. George Mould. The General Secretary, Dr. R. H. STEEN, read a letter from the sister society of Paris, expressing the desire for a bond of closer relationship with the British association in the same specialty. The letter, they said, was but a feeble testimony of their sincere regard, and of their keen admiration for Great Britain. The meeting approved the sending of a suitable letter in response, and the issue of an invitation to send representatives to the next annual meeting.

Lieut.-Colonel E. P. CATHART, M.D., read a communication on psychic secretion. He said we lived in a world which influenced us more than we were conscious of, for we were apt to regard ourselves as a superior caste of animal. In this attitude of mind we recognized that lower animals were much subject to their environment—were, indeed, victims of it. But so, too, were human beings. The influencing and controlling of the secretions was only one of the simplest demonstrations of the effect of environment. The term "psychic secretion" as usually employed was a misnomer, as in essence it meant a reflex secretion in which the stimulus was not the commonplace one. He recounted Pavlov's experiments on the effects on the salivary flow in the dog of various outside stimuli, and the researches into the gastric secretion by means of a gastric fistula. One of the practical results was that the taking of food was, or should be, a serious function; unless it were eaten with interest and enjoyment the full value was not obtained from it. It was not the food alone which was of primary importance; the prandial ritual had assumed gradually a position of prominence and without it the meal did not seem normal. Mental strain or emotion played a large part in influencing secretion. Pavlov carried his researches into the realm of the central nervous system, and the method he named the formation of conditioned reflexes. He divided the salivary reflexes into two—(1) conditioned reflexes, (2) unconditioned reflexes. Pavlov said that the so-called psychic secretion—which resulted, perhaps, from a stimulus which in itself was indifferent—was a conditioned reflex, whereas the ordinary stimulation of the buccal cavity on the taking of food, the normal way in which saliva flowed, he called the unconditioned reflex. From a study of these two Pavlov had evolved a wonderful method of gaining information about our relationships with the outside world. In developing this relationship there were two fundamental factors. The first was what he called temporary association—that is, the bringing of external phenomena into relation with the reactions of the organism, this becoming more complex with the evolution of the higher

centres. The second fundamental mechanism was the analyser, which was usually called in physiology the sense organ, such as the ear and eye.

How was an indifferent stimulus converted into an active one? Why was it that one man on reading in the newspaper that meat could be had without a coupon had an anticipatory flow of saliva, a vegetarian had no such emotion, his only concern being one of disgust that so much meat should be liberated? Pavlov showed that if a new indifferent stimulus were presented repeatedly along with one which was known to cause a secretion, then, in the end, the indifferent stimulus alone would cause a response. It meant that the reflex arc had taken on a new afferent neuron, but it had not done so unconditionally; in other words, there was not yet a beaten-down path—a right of way had not yet been established. For instance, if every time dried meat powder was put into a dog's mouth (to exclude the need for mastication) a bell were rung, or the skin of the animal were scratched, a time would come when the ringing of the bell or the scratching of the skin would of itself cause a flow of secretion; in other words, a conditioned reflex to a specific stimulus had been created. It had been found that similar reflexes could be generated by practically any phenomenon in the external world, provided the animal possessed a suitable analyser or receptor. Pavlov further showed that not only could one inhibit, either internally or externally, these reflexes, but one could even produce an inhibition of the inhibition, and so get back to the secretion again. The author went on to elaborate the theme, and to show how accurately responsive the organism was to carefully trained impulses.

The paper was discussed by several speakers, and the author replied.

THE PARIS THERAPEUTIC SOCIETY.

At a meeting of the Société de Thérapeutique, Paris, held on December 11th, 1918, Dr. J. LAUMONIER reported a case of typhoid fever treated by colloidal iron; 5 c.cm. were injected intravenously every three days, each cubic centimetre containing 1 mg. of pure iron. Six injections were given in all. The treatment appeared to have a moderating effect upon the fever and to prevent the occurrence of anaemia and leucopenia, usually present in typhoid. Dr. L. RENO and Dr. R. MIGNOT read a note on the inefficacy of injections of saccharose in human and experimental tuberculosis. A solution containing 5 grams of saccharose and 2 cg. of novocain was injected subcutaneously or intramuscularly in cases of pulmonary or surgical tuberculosis without the slightest improvement being observed after thirty to forty days' treatment. Saccharose was also injected into guinea-pigs previously infected with tuberculosis, but the course of the disease was not affected, and one of them even died before the controls. In a paper on the treatment of influenza and infectious diseases in general by lymphotherapy and haematotherapy, Dr. S. ARTAULT DE VEVEY stated that lymphotherapy consisted in producing a bulla by any blistering agent and injecting 5 to 6 c.cm. of the serum intramuscularly into the patient's shoulder or buttock. As this process was not very rapid and as sometimes the patient's skin was refractory to blistering agents, in cases where a blister did not form at the end of ten hours, the speaker had been in the habit of removing 10 to 15 c.cm. of blood and reinjecting it at once. To prevent clotting, 2 to 3 c.cm. of a 10 per cent. solution of sodium citrate was first drawn into the syringe. This operation of haematotherapy was easy in the adult, whereas in the child lymphotherapy was the best method. Within a few hours of the injection of serum or blood the patient feels considerable relief; in the simple and abdominal forms the temperature becomes normal in ten to twelve hours, and in patients with nervous complications or bronchopneumonia in thirty-six to forty-eight hours. Dr. A. CHALLAMEL read a note on hypodermic injections of eucalyptus oil in the present epidemic of influenza. During the last few months he had been treating soldiers poisoned by mustard gas with hypodermic injections of eucalyptus oil (1 in 10) in doses of 2 c.cm., morning and evening. The treatment was started before any signs appeared in the lungs with the object of introducing an antiseptic into the finest ramifications of the bronchi. Eucalyptol was chosen owing to its proved value in the prophylaxis of contagious diseases. The success obtained in this class of case encouraged the speaker to adopt the same treatment in influenza, with equally satisfactory results.

Reviews.

WAR PENSIONS.

THE book *War Pensions, Past and Present*,¹ owes its origin to the fact that in 1917 its authors, Judge PARRY and Lieut.-General Sir A. E. CODRINGTON, were invited to become members of a Pensions Appeal Tribunal, an independent body formed to hear and determine certain specified appeals from decisions made by the officers of the Ministry of Pensions. The other members of the tribunal were Admiral Sir Wilmot Fawkes, G.C.B., K.C.V.O., Dr. Norman Moore, Mr. Bilton Pollard, F.R.C.S., and Mr. Albert Bellamy, C.B.E.

The earlier chapters are interesting but by no means pleasant reading. The authors seem to believe that until very modern times the "traditional" lines which are prefixed to the first chapter were but too true in their application to the peoples of this country:

When troubles rise and war is nigh,
God and the soldier is the cry;
When war is o'er and trouble righted,
God is forgotten and the soldier slighted.

It may be hoped—and perusal of the later chapters in this book certainly justifies the hope—that this state of things has ceased. The whole attitude of the Government towards the soldier has undergone a profound alteration during the course of the war, and the establishment of an Appeal Tribunal afforded a clear indication that Government, fully supported by the people, were prepared to do ample and speedy justice to the disabled soldier.

The authors certainly did not spare those who had the privilege of administering the Royal Patriotic Fund when they wrote:

For over half a century it was the chief pension institution in the country, and its rulers fought hard against local administration, publicity of action, and nearly every first principle of pension management that we hope will prevail in the future.

This is a stern verdict, and the evidence for the prosecution is by no means set out at full length in the volume before us. No doubt the authors have satisfied themselves that it is correct by consulting the numerous documents to which they refer in footnotes. We confess, however, to having been unable to find in their pages any recorded justification for the statement that the Commissioners "fought hard against local administration and publicity of action." We believe, indeed, that if the gentlemen who, it may be supposed without fee or reward, undertook the difficult and arduous duty of administering the Royal Patriotic Fund, had been given the free hand which (as we shall presently show) was accorded to Judge Parry and his colleagues in relation to the question they had to decide, it might never have been possible to criticize the management of the fund.

The Tribunal of Appeal was appointed on July 25th, 1917, by the then Minister of Pensions (Mr. Barnes), who wrote:

The question whether medical unfitness in the case of sailors or soldiers, or the deceased sailors' or soldiers' death in the case of widows, is attributable to, or aggravated by, military service, is determined in the first instance for me by my officers who have before them recommendations of boards of medical officers. Against these determination appeals are made to me. I have decided to refer these appeals to a Special Tribunal. The decision of this Tribunal will be final in the foregoing matters. No question with regard to the amount of award, whether the awards follow on the decisions of the Tribunal or have been made independently of the Tribunal, and no other matters are referred to them.

No rules were laid down for the guidance of the tribunal; but, as if the Minister were one of those who would "trim mercy's trembling balance with a tear," he subsequently expressed the opinion (in which the members of the tribunal always concurred) that where there was a real doubt the benefit should be given in favour of the man.

At a very early stage the tribunal decided that it would not consider itself bound by the rules of evidence. This was a necessity, because, in the nature of things, it was extremely difficult to ascertain the pre-enlistment medical

history of the applicant for a pension. Some knowledge of that history is essential if a comparison is to be instituted between a man's physical condition before and after his military service. The same difficulty has presented itself to many persons who have been called upon to conduct inquiries during the present war. It was an unfortunate necessity for the reason that, if the rules of evidence are once abandoned, there is a danger that all kinds of evidence may be treated as of equal value. Evidence given in person and on oath is the best of its kind, and mere hearsay must be unreliable. By hearsay evidence we mean such things as generally follow the words "He told me . . ." "Hearsay" also includes (as a rule) a letter or other document written by someone who might come to court and be cross-examined, but cannot, or prefers to stay away.

Some of the decisions recorded in this book seem to show that the tribunal did in fact attach considerable weight to hearsay. "A letter from the mayor of a borough" as to a man's condition before he joined was received in one case. In another we read of a letter from "the vicar of his parish." No doubt such letters have some evidential value; but where there is any real evidence opposed to the statements contained in them they should (in general) be disregarded. But the Tribunal of Appeal was really established to do what the public wanted—to deal generously with claims for pensions. "Better let many improper claims for relief succeed than let one fail through lack of proper evidence." That was the motto which should have been emblazoned on the shield of this court; the public desired that it should be so.

The tribunal dealt with 927 cases; the majority involved only personal matters in which questions of general principle did not arise; but 21 are recorded, and of these 20 were allowed. It would be interesting to know how many of the whole 927 were allowed. If only one in every 21 was dismissed the tribunal clearly justified its existence. It held its last sitting on June 28th, 1918. The published decisions are interesting, and certainly evince a desire on the part of the tribunal to be freed as far as possible from technicality. The records of the tribunal will have some use in dealing with future cases; but, of course, in the nature of things the evidence could not be set forth in full. The principal value of the cases reported is that they show in very clear fashion how the case "for" and the case "against" is presented. The case "against" is usually founded entirely upon documents drawn up at some remote time and place by some person who cannot be summoned as a witness when the question "pension or no" has to be decided. Again, the actual decisions in these cases are of value. Although they turn on questions of fact, they are decisions in actual cases of frequent recurrence to which distinguished medical men contributed. Those who now discharge the duties so ably and sympathetically carried out by the distinguished members of this tribunal will derive real assistance from this record of their labours.

"GRAY'S ANATOMY."

*Gray's Anatomy*² has reached its twentieth edition and its sixty-first year of usefulness and popularity. The work has been entrusted once more to the skilful editorship of Professor ROBERT HOWDEN, who has again had the assistance of Dr. A. J. Jex-Blake and Mr. W. Fedde Fedden in the section devoted to applied anatomy. There are some sixty new illustrations, and the whole volume has been carefully revised, though we regret to find that the so-called "Basle" terminology is still used. It is true that where a B.N.A. name differs materially from an old one, the latter is placed in brackets after the former, and both sets of names are indexed; but for reasons with which our readers are familiar we hope that in its twenty-first edition *Gray's Anatomy* will revert altogether to the familiar nomenclature of the first seventeen editions.

An interesting addition to the present volume is a short biography of Henry Gray, F.R.S., the author of the original work, whose brief but brilliant career is not recorded in the *Dictionary of National Biography*. Gray was born

¹ *War Pensions, Past and Present*. By His Honour Judge Edward Abbott Parry and Lieut.-General Sir Alfred Edward Codrington, K.C.V.O., C.B. London: Nisbet and Co., Limited. 1918. (Cr. 8vo, pp. 180. 5s. net.)

² *Anatomy: Descriptive and Applied*. By Henry Gray, F.R.S., F.R.C.S. Twentieth edition, edited by R. Howden, M.A., D.Sc., M.B., C.M. London: Longmans, Green, and Co. 1918. (Roy. 8vo, pp. xvi + 1324; 1168 figures. 37s. 6d. net.)

in 1827, and at the early age of 25 he was elected a Fellow of the Royal Society. He was in turn demonstrator of anatomy, curator of the museum, and lecturer on anatomy at St. George's Hospital. In 1861, when a candidate for the post of assistant surgeon, he was struck down by confluent small-pox, and died in his thirty-fifth year. The original engravings, which added so much to the early success of the book, were made from drawings by Gray's colleague at St. George's Hospital, Dr. H. Vandyke Carter. *Gray's Anatomy* has, indeed, always been noted for its clear illustrations no less than for the lucidity and accuracy of its text.

Of the present edition we can say, as we said of its predecessor, that it contains all the anatomical information which any but a professed anatomist will ever require, and the medical student can safely choose it for his study in preference to more voluminous textbooks. This is a tribute to the wise policy of successive editors, who have striven to keep the size of the book within moderate bounds.

NOTES ON BOOKS.

THE new edition of *Hadden's Pocket Vocabulary of Medical Terms*,³ revised by Dr. PHILIP COWEN and Mr. DAVEY, furnishes the student with a list of the commoner medical terms in use, with their pronunciation and meaning. There is also a list of the chief Latin and Greek words used as sources by the inventors of new terms or equivalents. There is always room, in our opinion, for dictionaries of this sort, because their use encourages clearness of expression.

Mr. HENRY CARTER, in his book on *The Control of the Drink Trade*,⁴ traces the history of the subject from the general election of 1908, when the public mind was strongly directed towards devising measures to ensure better conditions of life for workers and their families. He describes at length the various rules and regulations made during the war, and praises the arrangements for providing wholesome food at reasonable prices in the canteens.

The second edition of Dr. COBB'S book on *The Organs of Internal Secretion*,⁵ presents the same characters as the first, which was reviewed in the *BRITISH MEDICAL JOURNAL* of April 21st, 1917 (p. 515). It gives a clearly written and optimistic account of the subject, and will be useful to those undertaking the treatment of disease by hormone therapy.

The second edition of Dr. WHITING'S *Aids to Medical Diagnosis*⁶ is a brave attempt to condense a vast amount of information into a small space. It is based to a large extent on the experience of a hospital out-patient department, and should be of service as a guide to the medical student during his hospital days. It is clearly written and well arranged.

To see the joke of the *Craft of thy Caduceus*⁷ it is necessary to have spent, or perhaps it should be said wasted, some time on the literature of what is called occult science; those who have done so will enjoy the jest amazingly. The mass of printed matter on the occult is enormous and increases yearly; here all its tricks are neatly touched off, from the portentous air of muddled mystery down to the faint hint of mild impropriety. If ridicule could kill, this skit might put an end to a witches' sabbath. Though those occultists who have the disease in a confirmed form may be beyond rescue, some in whom the infection is still mild may be saved from becoming chronic sufferers. It is so like the twaddle seriously presented in solemn treatises that talk of new religions and higher thought.

³ *Hadden's Pocket Vocabulary of Medical Terms* (with their pronunciation). By Henry Payne, M.D., M.R.C.S., L.S.A. Revised and enlarged by Philip Cowen, M.D., Durb., D.P.H.Camb., and Herbert Davey. Fifth edition. London: Hadden, Best and Co. 1917. (31 x 5½, pp. 264.)

⁴ *The Control of the Drink Trade*. A Contribution to National Efficiency, 1915-1917. By Henry Carter. London: Longmans, Green, and Co. 1918. (Demy 8vo, pp. 325 7s. 6d. net.)

⁵ *The Organs of Internal Secretion: Their Diseases and Therapeutic Application*. A Book for General Practitioners. By Ivo Geikie Cobb, M.D., M.R.C.S. London: Baillière, Tindall, and Cox. 1918. (Cr. 8vo, pp. xiv + 274. 7s. 6d. net.)

⁶ *Aids to Medical Diagnosis*. By A. Whiting, M.D. Second edition. (Fcap. 8vo, pp. viii x 167; 15 figures. 3s. net.)

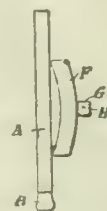
⁷ 6, Walton Place, London, S.W.3. 5s. post free

MEDICAL AND SURGICAL APPLIANCES.



An Emergency Crutch.

ARTIFICIAL limbs are always removed on retiring to bed. Hence in case of sudden emergency at night, when there is no time to re-apply the artificial limb, the patient is practically helpless, for he cannot move about, even a short distance, without assistance. To remedy this inconvenience, Captain R. T. Kelly has recently patented a device which consists of two or more lengths or sections of metal tube, A, C, D, E, telescoping into each other to allow extension or contraction. The lower section is shod with a pad or ferrule of rubber, B, and the upper tube of the set has at the end a crutch head, F, formed of a solid piece of curved wood or metal, or other appropriate material, supplied with a pad to give support beneath the amput. The sections can be extended instantly, so that the crutch can be brought into use at a moment's notice, and then locked by a self-acting catch. When not in use it takes up little room. The head-piece, F, has a spigot, G, and is locked in position by a pin, H, engaging a bayonet slot, I.



MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

(Continued from p. 283.)

THE approach of the Budget sees the many motoring organizations bestirring themselves in the interests of the car user, notably in respect of the new transport scheme that threatens road interests in favour of camouflaged railway schemes; also in regard to the fuel problem. Nothing but debate—and little enough of that—has yet come of it all; but the matter will presently bulk more largely in the public view, even as will the post-war cars concerning which announcements are now being made in a much more generous quantity than actual examples are forthcoming.

ENTERPRISE OF OLD ESTABLISHED FIRMS.

There are a number of post-war light cars in prospect, but they are in general a class which cannot be recommended for the average doctor's work at this stage of development, in that, necessarily, many of the new makes should be in the hands of the public before sufficient can be known about them to that end; it may incidentally be mentioned that the Stellite, one of the very few light cars of absolutely novel design which was introduced before the war, and established itself before hostilities broke out, is probably to be marketed after the war by Messrs. Vickers's concern, the Electric and Ordnance Accessories Co., Birmingham, with three-speed gearbox; but it is not possible to announce complete details in this connexion at the time of going to press. It differs from the bulk of cycle and light car propositions in that the Stellite enterprise is run by a firm of ample resources, alike engineering and financial, as distinct from more or less being built by any local works, as are a great number of cycle and light cars. I am promised details within a fortnight.

Another well-established motor car engineering house, Clement Talbot of Kensington, is to supplement its series of 12, 25, and 36 h.p. chassis by a light car, which, however, will not be ready for delivery before the end of June. The incursion of this company into the light car field, however, is a sign of the times, and all the more interesting to medical men in that it reveals that such propositions are certainly not coming entirely from small or new concerns, but that, instead, some of the most responsible and oldest established houses in the industry are going to play a part in this notable development.

The Humber 1919 models consist of the range of cars which are already familiar to the public, including a 10 h.p. four-cylinder type of 65 mm. bore by 120 mm. piston

travel, which will sell as a "two-three seater" for £425, as a coupé for £460, and as a four-seater with longer wheel base for £560. A 14 h.p. model with 75 mm. cylinder bore and 140 mm. piston travel will be listed as a five-seater touring car at £600; all these types are fitted with separate unit dynamo lighting and electric starting gear as standard.

The new 12 h.p. Swift model is expected to be marketed some time this summer at about £300, with a four-cylinder block engine and offset crankshaft, the bore measurement of the cylinder being 69 mm. and the piston travel 130 mm. Special provision is made for the removal of the valves and the tappet spindles complete with their roller ended tappets. The oiling of the main bearings and connecting rod big ends is by forced lubrication. The gearbox gives three speeds forward and a reverse. The radiator takes a "Vee" form, and the bonnet tapers gradually to a scuttle dash, the over-all length of the complete car being 12 ft., and the wheel base 8 ft. 9 in. The vehicle complete scales somewhere about 17 cwt. Between now and July, when the new model is expected to issue in quantity, the 10 h.p. light car and the 15 h.p. five-seater types will be available; but once the 12 h.p. model comes through in quantity it will be the type made by the works on a scheme which has given excellent results, as is sufficiently manifest from the Rover policy in the pre-war period.

The Star Engineering Company of Wolverhampton will market 15.9 h.p. and 20.1 h.p. four-cylinder types, brought up to date, as notably by cutting down the weight in the reciprocating parts, and improving the balance of the engine. A special white metal alloy is employed in the crankshaft bearings of the big ends of the connecting rods.

SOME ESTABLISHED MAKES OF MIDDLE POWER.

The Daimler programme for 1919 consists of three types of chassis, those most likely to be of use for the doctor being a light six-cylinder 30 h.p. model and a six-cylinder 30 h.p. standard chassis; the remaining type is a larger six-cylinder "special." Wolseley will also be marketing three models, of which the most likely to be of service to the medical man is the 16/20 four-cylinder type that has been developed consistently, notably in the light of experience in war service. It will be issued complete with mechanical engine starter, and so forth. It is understood that later in the season the firm will introduce a light car, but this in any case will not make its appearance until the autumn.

The Subbeam programme embraces various models, the most interesting to the medical man being again a nominal 16 h.p. four-cylinder type, such as has given great satisfaction in transport service, for staff work and so on, during the war, the engine measurements being, as formerly, 80 mm. bore by 150 mm. piston travel. The suspension and frame details, as well as the equipment of a mechanical engine-starter, all mark improvements on what was available in this connexion before the war.

The most notable Vauxhall development is the 30/98 h.p. type. The mere indication of the range of power suggests that it is somewhat beyond the requirements of the average medical man. Indeed, it is rather a sporting car. But the four-cylinder 25 h.p. Vauxhall chassis is in the main akin to the latest patterns supplied to the army, and this is the car that has given perhaps the most satisfactory service of any for light transport work throughout the campaign. The differences in the Vauxhall peace model of 25 h.p. are that the springs are adapted to use on English roads. The frame is lower and the radiator is higher and narrower in design. During the course of the war the chassis has undergone constant revision, though there have been few radical alterations. The detail improvements include a spiral bevel drive, the substitution of ball valve oilers for grease-cups, the use of inclined steering pivots, the double master leaf in the springs, a new form of gear teeth and a spring drive between the engine and the gearbox. The smaller Vauxhall chassis will be marketed at £875; the complete equipment will include electric engine starting gear, so that the increase of the price in this case is only about 60 per cent. over the pre-war costs, despite wages and materials having increased over 100 per cent. It is said that the introduction of an eight-cylinder Vulcan model is in mind, but the 1919, 15.9 h.p. four-cylinder engine, with measurements of 80 mm. bore by 130 mm.

piston travel, and four-speed gearbox and worm drive, is the variety most likely to appeal to the medical user.

The four-cylinder Hillman car has undergone various developments, the chassis being designed to accommodate a two-seater, a light four-seater, or a coupé body. Three speeds forward and reverse are furnished by the gearbox, the final transmission being by worm drive. The four-cylinder monobloc engine has a bore measurement of 65 mm. and a piston travel of 120 mm. One of the features of the construction is that each valve-cap covers two valves, and each pair of caps is held in position by two yokes, while the inlet and exhaust manifold is a combination design. The gear change is of the central type introduced by the Americans, the brake levers also being worked from the centre. The Scott dynamo is incorporated in the equipment, while the tubular oil supply gallery is designed to ensure adequate lubrication for the piston details when the vehicle is climbing steep gradients. A small six-cylinder Hillman engine has also been evolved.

FROM OVERSEAS.

Though Willys-Overland markets various models in America, one type only will be offered in this country in 1919, the body being considerably lower than in the case of most American cars, while the petrol tank is at the rear. The four-cylinder monobloc engine has a bore measurement of 85 mm. and a piston travel of 127 mm., the crankshaft being driven by helical gears, and the dynamo by a side chain. The thermo-siphoning principle is employed for the cooling, and the equipment comprises a two unit six-volt electric engine starting and lighting system, with the usual dashboard instruments, as well as an electric horn and a complete range of tools. The price is not fixed yet. The Hupmobile is always a one-model programme, the chassis for 1919 being suitable for two-seater or four or five seater coachwork, the four-cylinder engine having a bore measurement of 83 mm. and a piston travel of 140 mm. High-pressure lubrication is employed, as well as a central change speed lever to control a gearbox giving three speeds forward and a reverse, the final drive in the back axle being by helical bevel. Electric engine-starting and lighting equipment are standard, and a spare rim is carried at the back of the vehicle. A special type of piston of hour-glass shape has been standardized with three rings, two being above and the other below the gudgeon pin. The frame is a straight-sided construction tapering outwardly in plan from the front dumb irons to the back cross member.

From France comes information that the Delage firm proposes to market a six cylinder car with 80 mm. bore and 150 mm. piston travel, giving cubic contents of 4½ litres, this model being entirely new, with two carburettors and "Autovac" feed. Electric lighting and starting equipment are built into the chassis, and a novelty worthy of note is that brakes are supplied to all four wheels. The rear axle has spiral bevel gears. Lorraine-Dietrich are due to produce a four, a six, and a twelve cylinder model. La Buire, on the other hand, will go in for a one model programme, a middle-sized vehicle of 70 mm. bore by 150 mm. piston travel with oscillating rear axle and cantilever springs; but deliveries are not promised for six months. Charron will continue to produce the small Charronette model with four-cylinder engine, 58 mm. bore by 100 mm. piston travel. Rolland-Pilain will market a 10 h.p. four-cylinder model of 70 mm. bore by 125 mm. piston travel, which, like the other French vehicles, will be manufactured complete with electric engine-starting and lighting set. Th. Schneider will make four models, the smallest with a four-cylinder engine with a bore measurement of 75 mm. and a piston travel of 130 mm.

The smallest of the post-war Panhard models has a nominal 10 h.p. four-cylinder engine, with a bore measurement of 70 mm. and a piston travel of 120 mm., produced for a chassis price of £500; while the smallest post-war Renault is a nominal 12 h.p. four-cylinder vehicle with a bore measurement of 80 mm. and a piston travel of 140 mm., to sell in France at a chassis price of £558, or complete with a touring body at £675. The smallest Berliet will be a nominal 15 h.p. four-cylinder machine, with a bore measurement of 90 mm. and a piston travel of 130 mm., to be sold in France complete with touring body, electric lighting and starting equipment, at approximately

£348. The small 8 h.p. Peugeot will be fitted with electric lighting and sold at £346 for the chassis and £461 for a touring body in France.

NOTABLE MASS ASSEMBLY PROPOSITION.

Undoubtedly the most notable novelty yet announced on the part of French makers, however, is the Citroën four-cylinder post-war vehicle, with a bore measurement of 65 mm. and a piston travel of 100 mm., giving an engine of 1327 c.cm. capacity, to sell, with standard bodies, at from £290 to £330. The scale of output is planned at 36,500 vehicles a year, which is the record for any European programme yet conceived. The proposition originates with the André Citroën Company, makers of the well known Citroën double helical, or herring-bone, type of bevel and crown wheel-drive gear. The car is expected to scale about 11 cwt. complete, while it is claimed that the petrol consumption will be about forty miles to the gallon. Accessibility has been had in mind, in that part of the low cost of production is to be achieved by the quickness with which the parts may be dismantled and assembled, so that the user is no less the gainer than the producer. Obviously, interchangeability is aimed at, since that is the only possible way of achieving what is styled mass production. The gearbox provides three speeds forward and a reverse, the maximum speed of the vehicle being estimated at forty miles an hour. Five detachable wheels, equipped with Michelin tyres, are being supplied as standard, the track of the car being about 8 in. narrower than the average British one. Perhaps the most novel mechanical feature is the suspension, details of which, however, are not yet released for publication. The body has pleasing outlines, and the chassis is intended to take a town coupé and touring types of coachwork. For the French market the American style of steering on the left side is to be furnished, while the vehicles for England will have the steering on the right. It does not follow that the price suggested is that at which the vehicles will be marketed in England; rather are the figures taken from retail sums aimed at in France. In this connexion it must be had in mind that foreign cars cannot yet be imported to this country, and doubtless a tariff of at least 33½ per cent. will be imposed when they are released, else there will be trouble with British labour.

It is to be regretted that the smallest four-cylinder car yet schemed by a big motor engineering house, the "Baby" Fiat, with a bore measurement of 55 mm. and a piston travel of 80 mm., giving 760 c.cm. engine volume, tested for two years past, will not be manufactured this year on account of factory conditions, and of the scale of the demand for the nominal 10 h.p. four-cylinder Fiat, with a bore measurement of 65 mm. and a piston travel of 110 mm., giving 1460 c.cm. engine volume, or approximately double the size of the "Baby" model. The 10 h.p. vehicle will be introduced at the Lyons Fair.

SOME PRACTICAL POINTS IN MEDICAL RECONSTRUCTION.*

By N. BISHOP HARMAN, M.A., M.B., F.R.C.S.

THE idea of reconstruction implies that we are not content with things as they are, and I think there are few doctors who are content, or wholly content, with medical conditions of to-day. The ideals of medicine compel us to strive to attain such conditions as will ensure the best possible health for the community; and also such modes of work for us doctors as will call into play all our best energies, and satisfy our instinct for good.

For the purpose of this discussion let us consider clinical work only under four divisions: (1) The treatment of the poor; (2) of the employed; (3) of the middle classes; and (4) of the well-to-do. It will be obvious these divisions are arbitrary and not watertight compartments. The work of the doctor is but rarely confined to one of these divisions, but they will help us to arrive at practical conclusions.

CLINICAL SERVICES.

1. At the present time the medical provision for the poor is in the hands of the Poor Law authorities, and, so far as my experience goes, the work is well provided for and well

done. The parish doctor is one of ourselves, engaged in the full work of his profession; the work he does under his appointment is the same as that which he does for his well-to-do patient. The Poor Law infirmaries, at any rate those I know in London, are first-rate institutions—well built, well equipped, and often with a first-rate staff, save only their numbers are so small that they are always engaged in a desperate endeavour to overtake their work.

But for all that, this work in the eyes of the people, and perhaps also in those of our profession, is the least esteemed of any work done by our profession. A stranger to our history might be amazed at this, especially when he learnt that all this good work was done under the aegis of bodies bearing the poetic title "the guardians of the poor." But the poor know history, or, rather, they bear in their memories a long tradition of injustice and of cruel tyranny; so the Poor Law and all that pertains to it is hated. The Poor Law will never live down its past. It is for this reason we doctors insist that medical relief must be completely divorced from all connexion with the Poor Law and married to the proper health services of the country. If the projected Ministry of Health be realized, and succeed only in this one thing, it will have done well.

2. Let us next pass to the second division, the medical treatment of employed persons. Within this are grouped all who come under the provisions of the National Insurance Act and their dependants. These persons are very numerous, their numbers rise as high as 80 per cent. of the community in some areas, and 75 per cent. of general practitioners take part in insurance practice. Yet there is no part of our work which doctors regard with more opposite feelings. Forgetting all the conflict of the initiation of this work, I will take into account only such expressions of opinion as I have gathered during work with the Central Medical War Committee. The divergence of statement has amazed me. In one large industrial city I found almost all the doctors on this service, and one of them said to me, "You could not dynamite us off it"; in another large township, mainly residential, I found only a small minority on the service, and the majority could not be persuaded to help in it even when high patriotism and war service were involved.

There must be some good reason for this divergence—something altogether beside prejudice. There undoubtedly is such a reason. Compare the pre-insurance practice of these typical regions. In the industrial city work was done through a system of clubs. The system, the arrangements, and the remuneration, were reflected in the character of the medical work, and this was such that no man with a proper pride in his profession could take pleasure in it. The insurance service as compared with the club system is a transfiguration, and is appreciated accordingly. In rural and residential areas, and towns not wholly industrial, the insurance service has brought no such improvement in the character of the medical work, nothing that could be appreciated as an advance on former practice; but it has changed the relations between doctor and patient, and introduced a third and somewhat bureaucratic party, and both these innovations are disliked. This divergence in view is bound to be reduced in time, but which way will it go? I think it will inevitably tend to the general view that the practice of the insurance service, as it now is, does not fulfil our medical standards. It certainly does not. I as a hospital surgeon can affirm that. In my out-patient clinic 60 per cent. of the patients are insured persons who attend for treatment that is essential to their industrial efficiency. Yet these persons pay for a medical benefit which makes no provision for these essential needs; they must still apply to a charity. A scheme of medical benefit which does not provide for specialist services and for institutional treatment is no scheme, it is poorer in status than the Poor Law provision which does all these things. Consider the thoughts of the insured person: his child attends the public elementary school, and as of right receives such specialist treatment as may be needed, whether for eyes, ears, throat, or teeth. But the man himself cannot get his eyes examined when they fail at his work; his sore throat will be treated, but he cannot get his Eustachian tubes catheterized; for these, and a host of other necessary services, he must pay himself or apply to a charity. From the doctor's point of view the case is worse. He loses his patient just when his interest in the case is developing. Unlike the parish doctor, or the doctor of the middle classes or of the well-to-do, he cannot follow up his patient and gain that advance in medical knowledge which comes to both general practitioner and consultant when they meet to consider a difficult case. Hence, if the insurance service is to be appreciated by us doctors, it must give such facilities for practice as will make the work good in our

* An address delivered to the medical profession of Maidstone, by invitation of the Maidstone Division of the British Medical Association, January 13th, 1919, at the West Kent Hospital.

eyes. These improvements become the more necessary if, as is contemplated by some, medical benefit is to be extended to the dependants of insured persons. If the service as it now exists be extended, criticism and hostility will increase; if a real service be provided, the reality of it will disarm criticism.

3. The medical provision for the middle classes is good, save in one respect. The relations of doctor and patient are all that could be desired; the complete freedom of both ensures that the best possible service shall be maintained. But there is one weak spot that seems likely to bulk more largely in the near future. Consider the average £500 a year household. In ordinary sickness treatment can be carried on in the home; but in serious illness, particularly when operation is involved, the difficulty of home treatment is great. It will be greater with the increasing cost of domestic service. Recourse must be had to the nursing home or private hospital. But the establishments which those of moderate means can enter are few, and the few are scarcely on a level in service, cleanliness, and comfort with the home of the patient. The truth is they cannot be. A clean comfortable nursing home with a good nursing service cannot be made to pay as an independent unit, let alone provide a living for the proprietor, within the charges the patient of moderate means can pay. How, then, is the need to be met? In my view it should be met by the voluntary hospitals. To each of these there should be an annexe for paying patients. The experienced managers of the greater hospital would, through a joint administration, nursing service, and house staff, secure economy and efficiency. Further, such hospital homes would secure greater safety for the patient. Under present conditions the doctor has to be his own house-physician, dresser, clinical clerk, clinical investigator, and operator whilst, for twenty-three out of the twenty-four hours he must leave his patient alone, with no trained deputy at hand who can act in an emergency; and the more sought after the doctor the greater is this difficulty. The anxiety on this score vanishes when the patient is in a home which can provide a full staff. The hospital annexe could do this. The idea is no novelty; it is in working order in many parts of the country, both in great and small hospitals. I would urge you to bring these facts to the notice of hospital boards.

4. I shall say nothing on the medical provision for the well-to-do. Their demands will always be met with the best supply that can be obtained within our knowledge. But in the conclusion of my address I want to say something to the doctors who are mainly occupied in this work.

SPECIAL PROBLEMS.

We may now consider some special problems that arise out of the unique conditions of to-day. First let me deal with a certain noisy demand for a State medical service—that is, a State clinical service manned by whole-time salaried officers.

A "State Service."

The advocacy of such a service is nothing new; as students we wrangled over its pros and cons in the hospital common room. Such a service can be produced in a few minutes on paper, and it will look as attractive and logical as any paper constitution. But would these airy creations work? From my judgement of human nature I am convinced they would not. I propose to give two reasons only: Consider the present distribution of medical personnel. There are with the forces some 6 million men, and in the home population some 33 million infants, women, old persons, Grade 3 men, and some other. The need for medical attendance must surely be far greater for the 33 million unassorted persons than for the 6 million picked men; no war risks could possibly be as great as for the multitude five times greater. Yet the medical personnel of the 6 million is nearly as numerous as for the 33! Indeed, I believe if we could count effectives only, and put all the military work done by home civilian doctors into the right side of the balance, the military medical personnel would outweigh the civilian. Why is this? The answer can be given in one word—*Fear*. Fear on the part of the responsible authorities, and a very natural fear; it would possess you and me if we were in their position. For fear of accident they are bound to maintain at all points of the military system such an equipment as will meet every possible contingency. Now if there were a whole-time salaried clinical service, just the same condition of fear would be operative. Indeed, I have seen this fear operating to-day. The department of State responsible for the rationing of medical personnel would be obsessed with the fear of making short provision. Some trivial incident, a queue outside a State doctor's surgery, or a long wait at a central State surgery, would fill the post-bag of the M.P., with the sequelae of questions

in Parliament and a profusion of promises from a distraught Minister. The medical personnel of these islands would be doubled in ten years—and the cost —!

The people will not have State doctors, and if for any reason they are obliged to submit to their services they do not like them, and do not believe in them, just because they are officials. It may seem a foolish reason, but there it is; we do not like officials, whether they be flunkys, overseers, or doctors. As a part-time official I have had not a few amusing experiences, and found myself viewed as an oracle to be obeyed and an official to be combated by one and the same person in the space of a few weeks. At hospital a mother has received with gratitude a warning on the state of her child's eyes and of the necessity for special educational treatment; and a few weeks later bridled with maternal fury at the same warning given by an official—the same, but unrecognized, hospital doctor. How illogical! Not at all. She chose the hospital doctor herself, and so she believed in him. If a whole-time State clinical service ever came it would mean a division of medicine into "established" and "free," and the advantages of status and credit would not be with the "established."

But, it may be objected, arguments, however good, will not prevent a State service coming when the politician drives. As to that I would bid you observe the straws of the recent election. Did the State service men make any show? If there be a party which might be debited with this heresy it is that of Labour, yet two Labour candidates making their appeal to constituents, amongst whom were many doctors, plainly gave their reasons against such a service. I refer to Dr. Peter Macdonald for the Scottish Universities and Mr. Sidney Webb for London University. These men are among the thinkers of their party, and it is thinking that will tell in reconstruction, and not prejudice.

There will undoubtedly be an increase in the provision of State services in this or that direction of medical treatment; but these special services will almost certainly be modelled upon the lines which are proving successful in the treatment of venereal diseases, and these developments will occur when gaps are found in existing medical provision which cannot otherwise be filled.

Demobilization.

In this connexion there is the problem of the settlement of the doctor now on military service. It is said that many of these favour a State service. I do not pretend to know their mind; I do not think any one knows it. If demobilization came *en masse* there would be unemployment, and therefore trouble, but it will be a gradual process. I cannot do better than refer you to the scheme for priority in demobilization¹ which has been evolved by the Central Medical War Committee and approved by the authorities. I believe that we shall find that with a regulated return home of men there will be a satisfactory resettlement in civilian work. Even those who have been away four years, whose practices have suffered most, will, as amongst the earliest to return, find a rapid re-establishment of their work. This belief is based upon our experience of the rapidity with which men already demobilized have regained their work. The reason lies in the present shortage of doctors, and the consequence that much work is left undone that is waiting to be done, and the people's idea of medical treatment is growing greater not smaller. Nevertheless it is our part to help the home-comers by giving up such war-time posts as we may hold. The settlement of men who have never been in practice is a separate problem.

Co-operation.

In all problems of reconstruction we individual doctors have our part to play: we must not wait and see what the State will do, but act for ourselves. One lesson has been forced on me in the work of the Central Medical War Committee: That the work of men in partnership is far safer than that of the single-handed man. I know the stock objection of the difficulty of two men hitting it off; but the partnerships that are desired should be multiple—three, four, five, or six men, either united by a working arrangement or through a closer financial agreement. In multiple partnerships the personal difficulty disappears; whilst the advantages of selection of work according to aptitude, area of working, and provision for leisure, study, holiday, or illness, make each partner a free man such as he can never be when single-handed. The strength that would come through such combination is manifest. There is yet another advantage to the general practitioner. Amongst laymen there is a growing feeling of hostility to the sale of practices, something like the hatred of the sale

¹ BRITISH MEDICAL JOURNAL SUPPLEMENT, January 11th, 1919.

of "livings"; men do not like to be bought or sold either in cures of souls or in medical practices. With a partnership the difficulty can never arise; men may come and men may go, but the firm goes on for ever! Partnerships, too, will solve the problem of the settlement of the unattached doctor on military service. There are some thousands of these young men who will come home some day; they have been receiving good pay, and should have saved money. Take them into partnership. It will be better to bring them in as colleagues than to find them as competitors on the other side of the road.

Post-Graduate Study.

This is a pressing problem. Thousands of doctors have gone into the army straight from graduation. Their general medical knowledge has been subservient in the army to their special work. How, then, will they be fit for general practice? Again, thousands of doctors from all parts of the world journeyed yearly to Berlin and Vienna for post-graduate study, but they will not go there now. Our own men and those men will all be wanting post-graduate study. Where will they get it? London is the obvious centre; nowhere else is there such wealth of clinical material. But at present there is no sufficient arrangement for the work. It is true special hospitals have done first-rate work in their specialities in the past; and a few general hospitals, notably the West London Hospital, have succeeded admirably in organizing post-graduate colleges even in the face of official cold-shouldering. But this work is as nothing to what is now waiting to be done, if only we have imagination enough to grasp the situation. Some would exploit the graduation medical schools for this work; but undergraduates and post-graduates will not mix in the same field. We ought to secure for post-graduate study the use of half a dozen of the splendid Poor Law infirmaries. These are filled with first-rate clinical material, both acute and chronic, and no use is made of this great field for study. Some may object that patients do not like students. My experience belies the objection. A patient does not object to a long and critical examination of his case in the presence of others, provided it be done with that consideration which is the characteristic of British doctors; rather he resents a look-and-carry-on attitude bred of overwork or indifference. Those who do clinical work in the presence of students know that the critical observation of the student is the best guarantee of continuous work of high quality. Medical post-graduate study is a national key industry, just as much as the making of magnetos or dyes. We have lost it in the past, now is the time to regain it.

CONCLUSION.

I have urged co-operation, the formation of local committees or partnerships, for the private security of doctors. Now I want to urge another form of co-operation for the security of the profession generally in dealing with these great problems. This can be done by each individual doctor joining the British Medical Association and bringing his weight to bear in the forces which that Association concentrates. The influence and weight of the Association amongst those who know and count in national affairs is unquestionable. I could cite a string of war-time responsibilities and conflicts which the Association has borne. The Central Medical War Committee is an example. A committee of the Association was made a statutory body by the insertion of a special clause in an Act of Parliament, and finally became the model for other professional committees.

Doctors in difficulties know the value of the Association: we find membership highest where difficulties are greatest. But I make my appeal to men in varieties of practice little touched by the problems we have discussed, to recognize their responsibility to their profession and particularly to those whose work is surrounded by difficulties—the weaker members of our body. I appeal to consultants, specialists, and doctors whose work lies almost wholly with the well-to-do, to stand in with their brethren now. Do not wait until trouble is at the door—a "scare" membership is an uninstructed membership, a difficulty if not a danger. I appeal also to doctors in the services, especially the home health services, "look unto the rock whence ye are hewn." Your sectional associations are good, but the great association of the profession is a necessity.

THE Census Bureau at Washington reports that the recent epidemic of influenza caused 111,588 deaths in the forty-six largest cities of the United States, and increased the general death-rate of these communities in 1918 to 19.6 per 1,000, the highest rate recorded since 1880, when the death-rate was 19.8 per 1,000.

MEDICAL RESEARCH IN INDIA.

THE Secretary of State for India in his speech on February 10th to the deputation of the British Medical Association, which, in addition to the representations it made with reference to pay, urged the need of further facilities for medical research in India, referred to the steps already taken, and mentioned in particular a conference of sanitary and bacteriological experts, held at Delhi last December, to consider the extension of such activities. Accounts of what the Government of India has done during the last ten years have been published from time to time in the JOURNAL, but in his opening speech to the conference at Delhi the Director-General told a story of the various schemes already on foot to improve health conditions in India, which when thus consecutively stated, shows how considerable are the efforts already made, and encourages belief in his expectation that the Government of India will be willing to find the funds for any sound schemes of development. A summary of what Surgeon-General Edwards had to say will be of general interest.

He pointed out that there were three main agencies—the Sanitary Department, the Bacteriological Department, and the Imperial Research Fund Association.

Sanitary Department.

The sanitary organization was on a purely provincial basis, and the Government of India exercised no direct control over provincial health matters. The Sanitary Commissioner with the Government of India was an advisory officer whose advice was at the disposal of provincial governments when they asked for it. The sanitary organization consisted of provincial sanitary cadres, with, at the head of each, a provincial Sanitary Commissioner assisted by two, three, four, or five Deputy Sanitary Commissioners in charge of the districts or circles into which the provinces are divided. Civil surgeons of districts were, in addition to their ordinary duties, advisers in sanitary matters. The large towns and municipalities had their own health officers locally employed and controlled. A scheme of health administration in the rural areas did not, strictly speaking, exist, but the provision of such an administration was under consideration.

The Sanitary Department was staffed by I.M.S. and non-I.M.S. officers. Of the latter some were recruited from England and some from India. All the Sanitary Commissionerships were reserved to the Indian Medical Service except the Sanitary Commissionership with the Government of India, which was ordinarily held by an officer of the Indian Medical Service. All the Deputy Sanitary Commissionerships—five in Bengal, five in Behar and Orissa, three in the United Provinces, four in the Punjab, two in Madras, three in Burma, and two in Bombay—were open to independent practitioners. In the North-West Frontier Province the administrative medical officer was the Sanitary Commissioner and the Deputy Sanitary Commissionership was reserved for an Indian Medical Service officer. Before the outbreak of war in 1914 the Deputy Sanitary Commissionerships were held by fifteen I.M.S. officers and ten non-I.M.S. officers. At the present time only one I.M.S. officer was a Deputy Sanitary Commissioner, the remaining fourteen being on military duty. There were, also, three health officers employed in Simla and Delhi; these posts are reserved for the Indian Medical Service, as are also the posts of Port Health Officer, Bombay and Aden. In addition, there were twenty specially recruited plague officers of the Indian Medical Service who were employed on plague duty or in travelling dispensaries. Health officers of the first and second class, of which there were some forty-five and ninety-four respectively in the provincial organizations, were not I.M.S. officers.

The Bacteriological Department.

The Bacteriological Department, a central organization directly under the Government of India in the Department of Education, consisted of thirty officers utilized to staff the Central Research Institute, the Pasteur Institute of India, the provincial laboratories, the provincial Pasteur Institutes, and for pure research work. The work done in these places fell into certain well-defined categories:

(1) Bacteriology and proto-zoology; (2) the preparation of vaccine and serums; (3) malariology, helminthology and entomology; (4) rabies work, and (5) water analysis and experimental work connected with pure water supplies.

The officers of the department conducted researches and investigated epidemics and other diseases, and it was hoped that a branch for epidemiology would shortly be added. The thirty officers of the department consisted of seven directors of institutes, and twenty-three other appointments, all open to non-service men. Six of them were at the time held by non-service officers; when war broke out thirteen were filling appointments as directors and assistant directors of the various laboratories, and seventeen were appointed for special research work.

The Indian Research Fund Association.

The Indian Research Fund Association, controlled by a governing body assisted by a scientific advisory board, made proposals for research, examined schemes received from outside, and exercised general administrative and financial control over inquiries carried out at its instigation. The income of the association was five lakhs a year (£33,333), out of which it engaged, financed, and equipped men for special research work, and also made grants to men in the bacteriological department engaged on research work; occasionally it gave grants to independent workers. It had no fixed body of officers for employment, but at the present time had working under its direction one I.M.S. officer and three non-I.M.S. officers. The number was small because so many men were doing work connected with the war.

Amalgamation.

Before reaching any conclusion regarding the amalgamation of the provincially organized sanitary department and the centrally organized bacteriological department, it was necessary to decide whether it was desirable and practicable to combine the provincial sanitary departments into one service, and to make one Imperial Service of Public Health. In the Montagu-Chelmsford report the subject "medical and sanitary" appeared on the list of provincial subjects, and also on the list of transferred subjects, as a transferred subject. Under that scheme sanitation, which would include public health, would be in charge of a minister chosen from the elected members of the provincial legislative council, who would be assisted by a standing committee elected by the legislative council from among its own members.

Future Developments.

Vast extension of research in public health services and institutions was necessary. In considering whether the provincial public health services should be combined into an imperial service the disadvantages of watertight compartments in limiting selection of officers for advancement to the particular occupants of each compartment were obvious. Assuming that at present the provincial organizations would be maintained, there would be in each province a Director of a central public health laboratory, a Sanitary Commissioner, and an administrative medical officer in charge of medical affairs. The relation between these three heads of departments, who should be in close touch with each other, ought to be defined. At present, so far as the activities of the Indian Research Fund Association were concerned, the arrangements and organization for research were separate from and independent of the sanitary and bacteriological departments, and the question arose whether this arrangement should continue. The Central Research Institute at Kasauli, at present part of the Bacteriological Department, required complete reconstruction; the buildings were inadequate, and it was doubtful whether the situation was suitable. It was a matter of urgency to establish an additional research institute in a central position, where clinical material for research was available. Delhi had been suggested as the site for a new up-to-date institute to serve as the head quarters of the research organization, but Dohra Dun and Nasik had also been mentioned. Many thought that the appointment of a Superintendent of Medical Research in addition to the Director of the Imperial Institute, was desirable; such an officer would have executive powers and be responsible to the advisory board. The Imperial Research Institute would remain under the central Government, but this would not prevent local governments from developing existing facilities for research and establishing research institutes of their own.

After a passing reference to the establishment of tropical schools of medicine, Surgeon-General Edwards concluded by saying that medical research must remain an imperial subject, and that the money required would, he felt

certainly any re

on by the Government of India to be put forward.

Discussion.

The conference discussed the various matters raised. It expressed the opinion that the Central Research Institute should be retained on its present site and a larger institute established within easy reach of clinical material, preferably at Delhi; it would serve as the head quarters of the Imperial Research Library and as a bureau of information. It was thought that the sanitary and bacteriological departments should be co-ordinated, but that, save in exceptional cases, the posts should not be interchangeable. Co-ordination should be effected through the Imperial Health Board, and the provincial health boards should be representative of remedial as well as of preventive medicine. The two branches should be dealt with in the Imperial Government by a single member of council. The Central Health Board should have a permanent nucleus at head quarters to advise regarding research, general policy, and appointments. Major appointments should be made by the Secretary of State on the advice of the Health Board, but recruitment for the service should be purely on grounds of efficiency, without race distinction; appointments should not be made for more than five years at a time, some increase of pay both for service and non-service members was recommended, especially in view of the fact that the general opinion was that private practice should not be permitted. Non-service officers appointed in future should have the benefit of a provident fund.

ROYAL MEDICAL BENEVOLENT FUND.

At the meeting of the Committee held on February 11th, 1919, eighteen cases were considered, and £193 6s. voted to fifteen of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 69, of M.R.C.S.Eng. who was a surgeon in the Royal Navy for twenty-one years, and then practised in Cornwall and died in November, 1918. She has had some temporary assistance from friends. Husband's income ceased at his death. Voted £18 in twelve instalments.

Widow, aged 44, of M.B.Lond. who died in 1907. Was left with two boys, now aged 12 and 14. Applicant acts as matron of a day and resident nursery, and receives £60 a year. Youngest boy lives with her at present, but this privilege is not likely to be continued. Eldest boy earns 9s. a week, but the mother has to supplement this by 11s. a week. Wants help for youngest boy's school fees. Was helped by the Fund in 1911 and 1912, £10 each time. Voted £10.

L.R.C.P. and S.Edin., aged 72, married. Has one daughter, aged 32, who helps at home. Has lost an annuity of £180 through the war. Earns £102 from practice, less £12 for drugs. Has received £39 from the National Relief Fund, and an annuity of £8. Rent £35 per annum. Voted £10.

Widow, aged 37, of L.R.C.P.Edin. who died in 1917. Applicant left with three children, aged now 3 to 11, the two eldest going to school. She has been living on the capital left by her husband which is now nearly exhausted. Weekly home expenses, £3. Rent 11s. Voted £10.

M.R.C.S.Eng., aged 73, widower. Income, £30 from another charity, and £19 from relative. When acting as ship's surgeon was torpedoed in 1917, and as a result of exposure suffers from rheumatism and asthma. Relieved three times, £11. Voted £12 in twelve instalments.

Orphan, aged 13, of L.R.C.P.Edin. who died in 1917. Applicant was left with two elder brothers penniless, and friends looked after her. She is now receiving a good education and doing well, and help is asked for towards paying school fees. A grant of £25 was made last year to help her and her brother, who is now earning his living. Voted £15.

Daughter, aged 60, of M.D.Lond. who died in 1868. Applicant left without means, and has earned a living by acting as a nurse and housekeeper, but never been able to save. Health now very indifferent, and not able to work for any long period. Relieved five times, £24. Voted £12 in twelve instalments.

Daughter, aged 56, of M.R.C.S.Eng. who died in 1880. Applicant is a chronic invalid, and lives with a widowed sister. Her only income is a pension of £25. Relieved eight times, £96. Voted £12 in twelve instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.1.

British Medical Journal.

SATURDAY, MARCH 15TH, 1919.

TUBERCULOSIS AMONG INDUSTRIAL WORKERS.

THE Medical Research Committee have just issued¹ a report upon the prevalence of tuberculosis among industrial workers, by Captain M. Greenwood of the Lister Institute and Dr. A. E. Tebb. The authors' attention was attracted to the subject by the increase of mortality from tuberculosis in women at ages 15 to 45 since the outbreak of war. They point out that Dr. Stevenson's surmise that the increase might be due to the influx of women into factories is borne out by the observation that if the occupational death-rates from tuberculosis of women employed in the German (pre-war) industries are applied to the female population, as approximately distributed into industrial groups on the basis of the Board of Trade's estimates, the calculated deaths agree well with the observed deaths in 1914 and 1916 in England and Wales. The observed deaths were 22,214 and 24,131, the calculated 22,446 and 23,986. Captain Greenwood and Dr. Tebb accordingly decided, with the sanction of the Ministry of Munitions, to make a preliminary survey of the available statistics and to carry out a field inquiry in Birmingham.

In the first part of the report the general question of the mortality from tuberculosis of industrially employed males is discussed. The authors point out that to measure the direct influence of employment itself is a most difficult task, since the actual death-rate is the product of the combined action of factory conditions, housing conditions, and the inherent resisting powers of those employed, while the available data are open to many criticisms, some of which they specify.

They endeavour to allow for the factors of physique and social status by assuming that the death-rate from all causes other than tuberculosis is some measure of the combined action of both factors; and then, with the help of a regression equation correlating the death-rate from all other causes with that from tuberculosis, they note the occupational groups which show a mortality from tuberculosis at least 25 per cent. in excess of that predicted from the other death-rate. The authors devote a good deal of criticism to this device, which had previously been adopted in principle in attempts to isolate the environmental factor of infant mortality. They point out that the inclusion of industries to which specific risk of any disease (for example, lead poisoning or dust phthisis) attaches would render it nugatory, and they have been guided by the advice of Dr. E. L. Collis in excluding particular occupational groups. They note, however, that the possibility that the tuberculosis death-rate is more highly correlated than is the death-rate from other causes with the combined workings of physical selection and extra-occupational environment cannot be overlooked, so that the method remains suspect.

Since, however, nothing better could be done with the existing data, they have utilized the method in sorting out occupations. Its application to the data of three decennial reports in the English experience and to a recent tabulation of Dutch industrial mortalities showed that in all statistics studied, four occupations—bookbinding, printing, tailoring, and cabinetmaking—returned excessive mortality from tuberculosis; while four other groups of industrially employed males—hatters, hosiery makers, shoemakers, and hairdressers—had excessive mortality in each of the English collections of data (but not in the Dutch statistics). When the process was applied not to standardized mortality figures but to the death-rates in separate age groups, bookbinders and printers were found to have excessive mortality in each age group studied; tailors had no excessive mortality from tuberculosis at ages 55 to 65; cabinetmakers showed the excess only at ages 35 to 45. The authors, very tentatively, suggest that the factory conditions of printers, bookbinders, and tailors may be specially unfavourable, since, notwithstanding the selective effect of a heavy death-rate from tuberculosis in the youngest age group, mortality is still excessive between 35 and 45. But they point out the precarious nature of this argument owing to the fact that, even when the mortality at age 25 to 35 in one decennium is brought into relation with that at age 35 to 45 in the following decennium (a method they have adopted in one case), migration from occupation to occupation prevents the population of, say, tailors aged 35 to 45 in one decennium from being merely the survivors of tailors ten years younger at the previous census.

In the second part, the morbidity and mortality of industrially employed women are examined. The authors have collected the less unreliable figures—in particular they give a useful table compiled from the elaborate German analysis of the Leipzig insurance data, which at least proves that the morbidity of employed women is higher than it should be, since, for instance, the annual case rate of tuberculosis for women employed as bookbinders is 9.5 per 1,000, while for domestic servants it is only 2.2. But the reader will share the authors' disappointment with the extremely meagre statistical data as yet available.

In the third part of the report, Drs. Greenwood and Tebb consider the regional distribution of tuberculosis among women before the war, and show that the correlation between the death-rate from tuberculosis and the death-rate from other causes decreases with urbanization, being greatest for rural districts and least for county and metropolitan boroughs; a difference similar in form but showing throughout lower absolute correlations was observed for males. The lowest correlation of all was found for thirty-three towns, centres of great industries. The authors think that this somewhat strengthens the argument for a special industrial factor in the genesis of tuberculosis.

In the fourth part the war-time statistics of England and Wales are examined. As death-rates are not available, but only deaths, the reliability of the ratio of deaths from tuberculosis to all deaths or to all other deaths (the proportionate mortality) as an index of tuberculosis prevalence had to be tested. The authors show that the proportionate mortality is sufficiently highly correlated with the death-rate from tuberculosis for the former to be a fair criterion of the latter when an average result is in question, but that the stringency of the correlation is not sufficient to make it a satisfactory measure in individual cases.

¹ An Inquiry into the Prevalence and Etiology of Tuberculosis among Industrial Workers, with special reference to Female Munition Workers. By M. Greenwood and A. E. Tebb. Medical Research Committee, Special Report Series No. 22. London: H.M. Stationery Office, 1919. Price 1s. 6d.

They tabulate the ratios of tuberculosis mortality to mortality from other causes (women aged 15 to 45) in the principal administrative units of England and Wales from 1913-16; it appears that the ratio has increased in a majority of areas and there is a faint indication that the increase has been more general in the industrial areas. They also provide a series of graphs showing the proportionate mortality of women from phthisis at each age group in a series of representative groups of towns, from which it appears that in London and the great industrial towns the proportionate mortality at ages 15 to 20 has been increasing through the war. The *prima facie* suggestion is that war industry has drawn upon the weaklings of the rural areas, but the authors think some further statistical confirmation of this is needed.

In the fifth part a careful account of Dr. Tebb's field inquiries in Birmingham is given. The outcome was that, although no trade habit directly conducive to the spread of tuberculosis could be detected in the munitions factories, with one doubtful exception, the hygienic conditions, particularly with respect to ventilation, in factories of older type and construction were found to be thoroughly unsatisfactory, and the incidence of tuberculosis upon the employees in such factories, so far as could be determined in a sampling inquiry, was especially heavy.

The general conclusions reached by Captain Greenwood and Dr. Tebb were: (1) That the incidence of pulmonary tuberculosis upon the employees in particular trades was higher than could readily be accounted for by the hypothesis that these trades attracted persons of inferior physique and low general resistance to disease-producing causes. (2) That the incidence upon inhabitants of towns was similarly greater than could be accounted for by the general lowering of health associated with the bad home environment of the urban poor, and also pointed to an industrial factor. (3) That the proportionate mortality in women at ages 15 to 45 has increased in a majority of registration districts since the outbreak of war. (4) That the proportionate mortality in girls 15 to 20 has increased in the great industrial towns. (5) That a field inquiry in Birmingham has revealed a relatively greater incidence of phthisis upon those employed in hygienically unsuitable factories. As we have indicated, Captain Greenwood and Dr. Tebb import a good deal of caution into their deductions from the material, and are clearly of opinion that much more remains to be done before the conclusions suggested can be deemed established facts of science. None the less, their report is of value, and will be of service to others desirous of tackling an important and difficult problem.

TREATMENT OF WAR WOUNDS BY GERMAN SURGEONS.

A RECENT issue of the "Medical Supplement"¹ gave a well arranged and painstaking account of the treatment of wounds by German military surgeons from August, 1914, to the early months of 1918, culled from the writings and reports of no fewer than forty-two surgical authors. Some comments thereon may be of interest.

German surgeons started the treatment of war wounds with fixed ideas and definite plans formed on the teaching of surgeons of the previous generation (Langenbeck, Bergmann and Esmarch), on the

experience of the aseptic system in civil practice, and on the expectant methods of the South-African war. Their awakening to the fact of invariable and inevitable suppuration was rude and early. Marwedel at Aachen found the total mortality rush up from 1.2 per cent. on August 14th to 16.9 per cent. on October 14th, and primarily infected wounds rose from 29.1 per cent. on August 14th to 62.2 per cent. on October 14th. In that period the war of movement had given place to stationary warfare, and the number of shell wounds increased; there were difficulties and delays in transport, and increasingly bad weather. Enderlen at Metz and at Peronne met with extensive suppuration, destruction of tissues, and gas gangrene very early, and apparently made up his mind that more radical methods than those initially practised were necessary. He says that he began to operate for wounds of the intestine in August, 1914, and found that success depended upon operation within ten hours; 67 recoveries out of 154 cases, many with multiple perforations (within what period is not stated), made a good record. In October, 1914, he began more thorough treatment of head wounds by raising depressed fragments, removing clots, and drainage.

The active treatment of wounds by incision, excision, and exploration, followed by primary or secondary suture, does not seem to have become general in the German army until after Garré had advocated it at the Brussels meeting in 1915. No records, however, were published until 1917, when Hufschmid, Preusse, and Eckert narrated their experiences with 207 cases of wounds of soft parts dealt with by excision and primary suture. There were 11 total failures, 10 in wounds involving muscle, of which class there were 78 cases; all the 78 scalp wounds, including 8 trephinations with uninjured dura mater, and all but one of the 51 wounds of skin and subcutaneous tissue healed by primary union. Fründ of Bonn stated in October, 1917, that he was doing primary suture of wounds complicated by comminuted fracture of long bones. In a series of 280 cases admitted to a field hospital in a period of six weeks, exclusive of small superficial wounds, 184 were treated by primary suture, with 14 failures; 35 of these were wounds complicated by injury to long bones, and of these 8 were failures; all four of the femur cases and one-third of the humerus cases were unsuccessful. This surgeon's final method of dealing with the wound was to excise the skin margins, remove piecemeal the lacerated deep structures and irrigate with chlorine water rendered alkaline by addition of soda. This solution demarcated dying from living tissue; at first all the tissues were stained a dirty brown, then vascularized tissue, especially muscle, assumed a bright red colour and the devitalized tissue remained brown. It was not a powerful antiseptic, but it promoted hyperaemia and thus aided phagocytosis. In comminuted fractures, fragments which were loose or not firmly attached were removed, the wound washed with alkaline chlorine water, and sutured without drainage.

Gas gangrene afforded the Germans plenty of clinical worries and was the theme of papers and lectures innumerable. The features of the disease were not in any sense different from those experienced by our armies, but Fründ and Payr tried to make distinction between epifascial gangrene and a deep subfascial muscular form; the latter they thought attacked lacerated muscles and spread more rapidly in the distal portion of the muscle. Thies of Giessen attempted to prove that gas gangrene appeared in two chief forms: a brown form amenable to surgical

¹ Medical Supplement to the Review of the Foreign Press. Compiled by the Medical Research Committee. January, 1919. London: H.M. Stationery Office. (1s. net.)

treatment caused by *B. welchii*, and a blue, much more deadly, variety with early thrombosis of the large vessels, caused by a mobile bacillus belonging to the butyric acid bacillus group. Latent gas gangrene infection, the liberation by operation of gas-producing organisms from a site in which they were encapsulated was recognized, and Marwedel collected a series of published cases in which gas gangrene was set alight again by the removal of a foreign body—affording, he thought, proof that the bacilli lie latent in contact with the foreign body and in the degenerated tissue enclosing it.

Hyperaemia is a term often employed by German surgical writers. It is claimed that hyperaemia promotes cleansing by rapid separation of sloughs and by stimulating phagocytosis. We are not surprised to find Bier as an advocate of hyperaemia; he produced venous congestion by a band applied continuously or rhythmically (one minute on and one minute and a half off), and by local application of linseed poultices and hot fomentations. Going further in his efforts to produce hyperaemia, he made a moist chamber of the wound in which pus ("tissue juice" he calls it) collected, the dressings not being changed for four to six days; then after irrigation of the wound he found active granulation tissue formation in full swing. Bier seemed to have had little success in dealing with gas gangrene by hyperaemia, and not many surgeons adopted his methods.

Chlorine water is frequently referred to, but the antiseptic value of Carrel-Dakin solution or of eusol was not understood. "Chlorine water" was regarded as a means of producing hyperaemia and of demarcating dead from living tissues, instead of, as we have come to regard it, an antiseptic chemically delicate and bactericidally powerful, easy to use, and painless for the patient. Aniline dyes as antiseptics were not much in favour, though a certain "vuzin" (isooctyl-hydrocuprein) was strongly recommended by Klapp in May, 1918. This seems to have been an irritating and painful substance though of high antiseptic power.

If we may judge from perusal of these excerpts, the Germans became alive as soon as other nations to the character and danger of war wounds, and fought hard to combat the ravages of sepsis and gas gangrene. Why they failed to recognize the immense advance made by the Carrel-Dakin-Daufresne method we cannot suggest, except that the thing was not German, and therefore could not be good. In any case it is characteristic of the German mind that it sought to explain the action of hypochlorites and other antiseptics by the theory of hyperaemia, travelling, it seems to us, very widely astray in reviving linseed poultices and fomentations instead of recognizing the beautiful and convincing work of Carrel and clinical observations of many surgeons by which sterilization of a wound in a given time became almost mathematically certain. There would appear to have been no original contribution by the German military surgeons to the problems of treatment of war wounds.

THE CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, APRIL 8-11.

THE President of the Royal College of Physicians of London (Dr. Norman Moore) has informed the secretaries of the clinical meeting of the British Medical Association to be held in London next month that it will give him and the officers of the College great pleasure to receive on Thursday, April 10th, members of the British

Medical Association and Colonial or American guests who would like to see the portraits and books of the College. Tea will be provided at 4.30, and Dr. Norman Moore will point out some of the chief objects of interest. At 6 p.m. Sir H. D. Rolleston, K.C.B., will give a Lunnleian lecture on cerebro-spinal fever in the Library. The President of the Royal College of Surgeons of England (Sir George Makins) will hold a reception at the College (Lincoln's Inn Fields) on Wednesday, April 9th, from 4.30 till 6 p.m., when there will be an exhibition of Hunterian and Listerian relics and other objects of interest. As already announced, the Metropolitan Counties Branch of the British Medical Association will hold a reception in the Guildhall, London, lent by the Lord Mayor, on the evening of Tuesday, April 8th, when the guests will be received by Sir T. Clifford Allbutt, K.C.B., F.R.S., President of the Association. On Wednesday, April 9th, the Royal Society of Medicine will hold a reception at its house (1, Wimpole Street, W.1.). On Thursday evening, April 10th, a dinner will take place at the Connaught Rooms. Ladies will be invited to these three entertainments, but the number of invitations which can be issued is in each case limited, and early application should be made. Communications should be addressed to the General Secretaries, British Medical Association (Room 46a), 429, Strand, London, W.C.2. We must repeat the warning that, owing to the fact that so many hotels are still occupied by various Government departments, there may be considerable difficulty in obtaining accommodation. The programmes for the three sections have undergone a few modifications in detail since they were published in the SUPPLEMENT to the JOURNAL of March 8th. In the Section of Preventive Medicine and Pathology a communication will be made on Friday, April 11th, at noon, by Major-General Sir John Rose Bradford, A.M.S., Captain E. F. Bashford, R.A.M.C., and Captain J. A. Wilson, R.A.M.C., on filter-passing virus in certain diseases, with special reference to polyneuritis, encephalitis, trench fever, influenza, and nephritis. A preliminary note by these three officers on the virus of the last three named diseases was published in our columns on February 1st (p. 127), and an account of their observations on polyneuritis, founded on their paper in the *Quarterly Journal of Medicine*, was published in the JOURNAL of February 22nd (p. 224). On the morning of April 11th, at 10 a.m., a discussion on malaria will be opened by Lieut.-Colonel S. P. James, I.M.S.; and Sir Ronald Ross, K.C.B., F.R.S., who will be in the chair, will arrange a demonstration on malaria and an exhibition of specimens. A demonstration on malaria will also be given on Wednesday, April 9th, by the London School of Tropical Medicine at its new central premises, Endsleigh Palace Hotel, Gower Street, W.C.1. At the discussion on the dysenteries, to be opened by Colonel L. S. Dudgeon, C.M.G., A.M.S., and Professor W. Yorke, on Wednesday morning, Colonel S. L. Cummins, C.M.G., A.M.S., Adviser in Pathology, British Armies in France, will be in the chair. A demonstration on the subject will be given on the following afternoon at St. Thomas's Hospital. At the discussion on influenza, for which the Sections of Medicine and of Preventive Medicine and Pathology will combine, the chair will be taken by Colonel Haven Emerson, Medical Corps, U.S.A. At the discussion on war neuroses in the Section of Medicine the chair will be taken by Sir David Ferrier, M.D., F.R.S.; the subject will be introduced by Lieut.-Colonel F. W. Mott, and Lieut.-Colonel A. F. Hurst will give a cinematograph demonstration of illustrative cases. It has been decided that the papers with which the discussions in the several sections will be opened shall be put into print and copies supplied beforehand to those who intend to take part in the discussions. It is hoped that all those who have kindly consented to open discussions will remember that they are asked to supply the text of their opening remarks by March 14th; the text should not exceed 5,000 words, and may of course be shorter if desired.

HOSPITAL TEACHING UNITS.

MUCH publicity was given last week to an announcement made by Lord Knutsford on March 5th, at the quarterly Court of Governors of the London Hospital. So deftly did Lord Knutsford handle his theme that the general public may have formed the idea that the London Hospital alone of the hospitals of London contemplates the appointment of whole-time salaried staffs for certain duties. The fact is, of course, that, as we have frequently indicated, this matter has been engaging the close attention of the authorities of the great teaching schools for some time past; the object is to place the education of the medical student on a sounder basis, having regard to the growing complexity of medicine and the increasing number of methods of precision in diagnosis by which treatment is guided. The object may be attained in more than one way, and the governors of the London Hospital, under the inspiration of its able chairman, have been the first to sanction an experimental scheme. Lord Knutsford, after dealing generally with the existing arrangements for the medical service of the hospital, said that the committee and medical staff had come to the conclusion that there must be some modification in the system, and that an opportunity for trying an experiment was afforded by the two vacancies now occurring in the honorary medical staff through the retirement of Dr. Henry Head and Dr. F. J. Smith. There was no question, he said, of changing the present honorary staff for a paid and whole-time staff; but, instead of appointing honorary physicians to fill the two vacant posts, whole-time and adequately paid officers would be appointed to the vacant beds. Under the proposed arrangement the team or "firm" would consist of a director, three clinical assistants, laboratory assistants, and clerical assistants, all giving their whole time to the work and paid for their services. In addition to the duty of teaching, each unit would carry out the same work as other parts of the staff of the hospital, admitting cases in the ordinary way. The staff would be occupied with the cure of disease, research into its cause, and the education of students. Lord Knutsford added that if the scheme proved sound and advantageous it might be repeated as vacancies occurred, while whole-time units might be formed on similar lines for such special departments as those of dermatology, syphilology, gynaecology, orthopaedics, and genito-urinary surgery. His committee asked the permission of the governors to make a limited experiment now which would be judged by its results. It will be seen that the scheme thus outlined has been inspired in part at least by the report of the Royal Commission on the University of London and by the principles laid down in the memorandum addressed by Sir George Newman to the President of the Board of Education. The idea, we believe, has commended itself to many teachers and members of the governing bodies of hospitals, but the main obstacle has been that of finance. It is expected, however, that the Board of Education will be disposed to obtain the sanction of Parliament for largely increased grants to such medical schools as adopt a scheme conforming to the requirements of the Board.

GRADUATION INSTRUCTION IN LONDON.

IN an article on this subject last week we stated that a movement to establish a permanent system of graduate medical instruction in London, to be managed by a post-graduate association, was in a forward state. We understand that a public meeting will be held in London on March 31st, under the chairmanship of Sir William Osler, when a scheme, which has received the approval of the existing London medical schools, will be considered. It is proposed that the instruction shall comprise general and special courses, and that after attending one of the latter a graduate might apply to the teacher responsible for the courses for permission to do research work under him or to

act as his clinical assistant; for instance, a graduate after attending a course of children's diseases or orthopaedics could then, if regarded as sufficiently qualified, stay on at the hospital as clinical assistant, or do research under the physician for children's diseases or the orthopaedic surgeon respectively. Those who have given post-graduate instruction in the London post-graduate schools and special hospitals in the past will continue to do so in co-operation with the other teaching institutions working with the association, which include all the undergraduate medical schools in London. The medical schools of the United Kingdom will be invited to co-operate with the London association in providing periodic courses to run concurrently, especially at times, such as the summer months, when those seeking to attend courses will probably exceed the number that can be dealt with adequately in London. The recently formed British Association of Radiology and Physiotherapy has agreed to co-operate. As an example of what is meant by a special course at a general school, diseases of digestion may be taken; the course would include lectures by an anatomist, a physiologist, a pathologist, a radiographer, a physician, and a surgeon, clinical teaching in the wards and out-patient departments, practical instruction in the *x-ray* investigation of disorders of digestion by the radiographer, in chemical analysis of gastric contents and faeces by the clinical chemist, in bacteriological and microscopical examination by the pathologist, demonstrations on museum and *post-mortem* specimens, and on the use of the sigmoidoscope, and opportunities for seeing operations on cases already studied. The participating schools would be under no financial liability in connexion with the scheme, and it is hoped that sufficient money will be forthcoming from private donations to provide for the erection and equipment of a building containing offices for the permanent secretarial staff, a library, recreation and lunch and tea rooms. Each graduate student will pay a registration fee, and fees for courses. It is hoped that the cost of maintenance of the organization and house of this post-graduate association may be in part provided by an endowment raised by subscription and in part by a grant from the Board of Education. The permanent secretarial staff will co-operate with the teaching institutions in organizing courses of instruction, will receive fees, and register students. It is intended that the house of the association shall be a building in central London, and it is hoped that it will become the meeting place for the medical graduates of the empire and allied nations.

EMERGENCY POST-GRADUATE FACILITIES IN LONDON.

IN the JOURNAL of last week (p. 281) we gave a preliminary account of the arrangements made by the Fellowship of Medicine with the medical schools in London and other hospitals for an emergency post-graduate course of three months for qualified medical officers of the R.N., R.A.M.C., and R.A.F., and of the Dominion, United States, and Allied Forces. A list was given of the institutions participating in the scheme and of the special courses already in progress. The Fellowship of Medicine was founded to link together all English-speaking members of the medical profession for the exchange of medical knowledge and the advancement of the medical sciences; the present scheme falls naturally within the scope of such ideals. Facilities have been offered by the Directors of the Overseas Medical Services whereby medical officers are allowed three months' leave for post-graduate study before demobilization or return to their home units. In addition to the facilities for clinical and laboratory instruction at the various schools and hospitals enumerated in our last issue, arrangements are being made by the Fellowship of Medicine for a course of lectures and demonstrations on general and special subjects, to be held five days a week

for several months, at the house of the Royal Society of Medicine (1, Wimpole Street, W.). We understand that the number of applications to join the course received from members of the Canadian, American, and Australian Medical Services is already large, and it is expected that the programme of lectures and demonstrations will be completed at once. The purpose in view has been to provide a centralized course of instruction for those whose time is limited but who wish to devote every possible moment to the furtherance of their medical education. The special post-graduate course on the medicine and surgery of the liver and gall bladder at the London (Royal Free Hospital) School of Medicine for Women will begin on Monday, March 17th, at 10 a.m., and will continue during the two weeks following; those wishing to attend should send in their names to the Warden and Secretary (8, Hunter Street, Brunswick Square, W.C.1) at once. Full particulars of all the courses at the various general and special hospitals may be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, where time tables, syllabuses, and daily programmes are posted in the entrance hall.

THE MECHANISM OF BACTERIAL INFECTION.

In a paper communicated to the Royal Society on February 20th, W. E. Bullock and W. Cramer stated that the bacteria of gas gangrene (*B. welchii*, *Vibrio septique* and *B. oedematiens*) and of tetanus, when completely freed from their toxins either by washing or by heating to 80° for half an hour so that spores are formed, do not produce the specific disease when injected into a mouse or a guinea-pig. The normal animal disposes of the bacteria mainly by lysis and partly also by phagocytosis; this defensive mechanism is so efficient as to render these bacteria non-pathogenic when injected by themselves. It was found that if a small dose of a soluble ionizable calcium salt was injected together with the bacteria of their spores, the specific disease was elicited in a very virulent form. The chlorides of sodium, potassium, ammonium, strontium and magnesium, when injected together with *B. welchii*, did not produce gas gangrene. A direct contact between the bacteria and the calcium salt is not essential. The phenomenon will occur if the bacterial suspension and the calcium salt are injected at different times into the same site or into different sites at the same time or at different times. From these experiments and other experimental evidence the conclusion was drawn that calcium salts when injected subcutaneously produce a local change in the tissues at the site of injection. The effect of this dose is to bring about a local breaking down of the defensive mechanism against the bacteria of gas gangrene and tetanus. The term "kataphylaxis" was proposed to designate this new phenomenon. Sterile watery extracts of earth were found to be capable of producing this phenomenon. It was thought that they might owe this property in many cases entirely to the presence of calcium salts, but some evidence was found that in some cases the extracts of earth owed their kataphylactic action to the presence of chemical substance or substances not yet identified. The bearing of these observations on the etiology of gas gangrene and tetanus lends them much interest.

THE THERAPEUTICS OF RADIUM.

The report of Dr. Arthur Burrows, radiologist to the Manchester and District Radium Institute, for 1918, describes the work done during that year and contains also a summary of the lessons that have been learnt and the results obtained during four years. The number of persons applying for treatment has increased and reached 648 in 1918. In 48 cases of malignant disease the patient was rendered free from symptoms and signs during the course of the year, and 18 out of 33 cases of rodent ulcer

treated to a termination were cured. In the summary of the four years it is stated that practically all early rodent ulcers can be cured by radium alone. To date, 31 cases have been well for two years or more, and of a number of other patients who have not reported it is believed that many are still well. With regard to the treatment of malignant disease, it is observed that at present only inoperable cases are treated by radium. In its use various factors have to be considered: extremely rapidly growing tumours, like melanotic sarcomata, cannot be expected to yield good results; it is also found that carcinoma of the tongue does not usually respond favourably to radium. Extremely large growths are apt to slough and ulcerate, and the tendency to resolution is small. Growths involving bone cannot as a rule be satisfactorily treated, but a case of periosteal sarcoma is illustrated, which remained well for twelve months and then died of another disease. Tumours which retain some mobility, have a good blood supply, and are surrounded by healthy tissues, generally respond best to radium treatment. So far, it has not been satisfactorily demonstrated that the histological nature of the tumour, with a few exceptions, has much bearing on the immediate result of radium treatment. The best results from radium treatment have been obtained in carcinoma of the cervix of the uterus. "These cases are always treated by burying five to seven platinum tubes, the walls of which are three-tenths of a millimetre thick, containing altogether not less than 120 millicuries of radium emanation. The tubes are maintained in position for twenty-four hours by gauze packing. The quantity of emanation used must vary somewhat with the size of the tumour, but it is found that the best results are not obtained if not less than 120 millicuries are used. This heavy dosage is, of course, somewhat of a drain on the resources of any radium institute." From a numerical list of the cases of malignant disease of all varieties treated at the Institute it appears that thirty such cases previously deemed inoperable have been well for a period of two years or more. Radium has a very remarkable and rapid effect on certain local tumours. Lymphosarcoma disappears rapidly, but fresh tumours usually continue to arise in distant lymphatic glands. Glioma or gliosarcoma of the orbit disappears within a fortnight, but returns. Good results are obtained in some sarcomata, notably inoperable sarcoma of the superior maxilla. The local lesions of Paget's disease of the breasts, as a rule, clear up, but as the formation of secondary deposits in the breast and glands is to be expected, a radical operation should be advised. Individual secondary carcinomatous glands, if not too large, rapidly disappear if treated by burying radium tubes in their substance, but infection of glands at a distance commonly ensues. Another point made is that radium treatment may render operation possible, in carcinoma of the breast, of the bladder, of the cervix of the uterus, and for the removal of sarcomatous masses. Apart from all this, radium is of great use in relieving the discomfort of patients suffering from hopeless cancer. It is employed to relieve pain, heal ulceration, check discharges, stop bleeding, and thus to improve the general health of the patient. An appeal is made to the supporters of the Manchester Radium Institute to provide more suitable premises, and special beds for the treatment of cases in which it is thought desirable to bury tubes of radium emanation in the growths. Well lighted, well ventilated premises are very essential for the welfare of the radiologists and the nurses.

MEDICAL RESETTLEMENT.

The Presidents of the Royal Colleges in London and Edinburgh have made appeals drawing attention to one of the problems of demobilization which deserves sympathetic consideration from the general public. Sir R. W. Philip and Dr. R. McKenzie Johnston write: "Many doctors who, throughout the war, have held commissions in the

Navy, the Army, or the Air Force, have now to face the question of return to civil practice. This is for them far from an easy matter. The natural growth of their practices has ceased during their absence. In spite of loyal help given, in most cases, by their colleagues—who deserve all thanks for their ungrudging efforts—and by professional committees, to hold together the practice in the interest of the absentee, the normal wastage due to deaths, changes of residence, etc., has had the effect of materially reducing the practice from what it was in 1914. Beyond such unavoidable influences there is risk of curtailment from other causes. It is known to us that many of those who have been absent with the forces of the Crown view their future with grave anxiety. In a profession like medicine where the work is essentially personal, the future of those men evidently depends largely on the attitude of the general public. It is greatly to be hoped, therefore, that every patient will feel it an honourable duty to return, whenever possible, to his old doctor, and that public institutions will reinstate, as far as they can, to their former positions those medical officers who have sacrificed so much at the call of the empire." Dr. Norman Moore and Sir George Makins, after making special reference to public appointments and expressing the hope that public bodies will reinstate as far as possible to their former posts the medical officers who before the war held appointments in their service, continue: "It will be an important aid to the returning men if their former patients will continue to call them in, and it may be pointed out that the practitioners returning from service with the army will come home with an enlarged experience and are likely to be of greater value than before to the patients to whom they return. They have in most cases been engaged in duties which have increased their professional knowledge and skill."

THE ABUSE OF COCAINE.

EVERYBODY who reads the newspapers must have been struck by the frequency of prosecutions during the past few months for the illegal sale or possession of cocaine, and of similar but less frequent charges with regard to opium. In one case, out of which a charge of manslaughter, still unsettled, arose, the coroner, in addressing the jury, called their attention to the fact that the proceedings before him were taken under the regulations made in virtue of special powers conferred by the Defence of the Realm Act, a temporary measure. He appeared to be of opinion that the proceedings could not have been taken under the ordinary laws and regulations. The numerous cases recently reported seem to prove that the cocaine habit is common among certain sets of people in this country. In Paris there are cocaine pedlars who ply their trade chiefly in night restaurants, and some of the cases reported favour the belief that secret peddling has been going on in London. The abuse of cocaine is by no means confined to Europe, and appears to be particularly prevalent in certain parts of India, especially Calcutta. Attempts have been made by International Conferences to regulate the sale of cocaine, as well as of opium and its derivatives. Such conferences were held in 1911-12, 1913, and 1914. Sir William Collins, one of the British delegates, brought up before the full Conference in July, 1914, draft articles, one of which would have bound the contracting powers to enact pharmacy laws and regulations so as to limit the manufacture, sale and use of morphine, cocaine, and their respective salts to medical and legitimate uses only, and to co-operate among themselves to prevent the use of these drugs for any other purpose. By a further article the undertaking was applied to heroin and to every new derivative of cocaine, or of morphine or any other alkaloid of opium which, as the result of scientific research, was generally recognized as giving rise to analogous abuse, or as producing the same injurious effects. At the last Conference (1914), the adoption of this inter-

national undertaking was obstructed by Germany. We are glad to observe that the Parliamentary Under-Secretary of the Foreign Office stated in the House of Commons, on March 10th, that the British Government hoped to bring the matter before the Peace Conference in Paris with a view to the adoption of a resolution binding the Powers represented at the Conference to the speedy enactment and enforcement of the laws, regulations, and measures contemplated by the Opium Convention of 1912 for the purpose of confining to medical and legitimate purposes the manufacture, sale, and use of opium, morphine, cocaine, and similar noxious and habit-forming drugs; such a resolution to be made binding on the enemy powers.

INFLUENZA.

THE deaths from influenza in the ninety-six great towns declined to 3,198 in the week ending March 8th, from 3,889 in the previous week, the London deaths being 597 (808 the previous week). The only towns with more than 100 deaths, apart from London, were Birmingham (134), Liverpool (149), Manchester (210), Salford (119), Bradford (106). Of these, Manchester and Salford returned more deaths than in the previous week—an increase of 14 at Manchester and of 23 at Salford. The only other great towns returning more deaths than in the previous week were Croydon, 26 (25); Hornsey, 18 (12); Tottenham, 26 (15); West Ham, 42 (40); Northampton, 8 (5); Great Yarmouth, 15 (13); Norwich, 16 (10); Swindon, 4 (3); Exeter, 15 (11); Bath, 4 (3); Bristol, 76 (70); West Bromwich, 27 (23); Dudley, 4 (2); Smethwick, 27 (15); Warrington, 29 (23); Bury, 25 (19); Burnley, 20 (8); Blackburn, 50 (46); Preston, 30 (23); Barnsley, 18 (14); Sheffield, 83 (64); Darlington, 17 (13); Cardiff, 36 (27); Merthyr, 7 (4); Swansea, 37 (17). The figures in brackets are the deaths returned in the previous week. It seems plain that this third wave is subsiding. From the week ending February 1st to the end of last week the great towns recorded 12,383 deaths from influenza, the maximum occurring in the week ending March 1st. In the last wave the maximum fell in the week ending November 9th, and the deaths from the week ending October 12th to the week ending November 16th (that is, the corresponding weeks) were 27,903. Thus, so far, the mortality has been about 44 per cent. of that experienced in the autumn.

SIR WILLIAM OSLER will deliver an address on acute pneumonic tuberculosis before the Tuberculosis Society on Monday, March 24th, at 8.30 p.m., at the house of the Royal Society of Medicine, 1, Wimpole Street, W.1.

Medical Notes in Parliament.

Ministry of Health Bill.—The consideration of the Ministry of Health Bill in Grand Committee of the House of Commons could not be begun on March 11th as anticipated owing to the illness of Dr. Addison. The first meeting was accordingly postponed until Thursday morning, March 13th, when Dr. Addison was present. Sir Archibald Williamson was appointed chairman. It was decided that the Committee should sit on Tuesdays and Thursdays from 11 till 1, and usually from 4 till 6. In the debate on the second reading exception was taken by several medical M.P.'s to the proposal that the Medical Research Committee should be placed under the control of the Privy Council. An additional argument for maintaining a central research body has been afforded by the decision that there is to be a separate bill for Scotland. There is, however, a feeling that the Ministry of Health should have some authority for scientific investigation in its own department, and alternative amendments have been put down by Dr. Farquharson and Sir Watson Cheyne to give this power. There is an impression that one or other of these amendments will be accepted.

No Sanction for State Hospitals under Ministry of Health Bill.—Mr. Leonard Lyle asked, on March 11th, whether, under the provisions of the Ministry of Health Bill, the Minister would have power to institute in any form state hospital treatment, other than that already sanctioned by Parliament; and whether he would require new legislation to enable him, if he wished, to convert any of the existing Poor Law infirmaries into state-conducted hospitals freed from association with Poor Law relief. Major Astor replied that no such powers as were

mentioned in the first part of the question were conferred by the Ministry of Health Bill; and specific legislation would be required for the purpose mentioned in the second part.

War Bonus on Officers' Pensions.—Sir L. Worthington-Evans announced, on March 6th, that the present bonus of 20 per cent, payable to disabled men and the widows of deceased men, which was awarded until the end of June next, would be extended until the last pay day in September next. The extension applied to all pensions and allowances in respect of which the war bonus was granted by the Cabinet decision of December last. For the period from January 1st last to the end of September, a bonus of 20 per cent, would be added to the disability retired pay of officers, and the disability pensions of nurses and naval warrant officers, and to the pensions and children's allowances of widows and relatives of officers granted for service in the war. In the case of regular officers and certain other cases the retired pay awarded was a composite sum covering service and disablement. In these cases the bonus would be confined to the latter element; it would be payable only in respect of the amount of disability retired pay which would have been awarded to a temporary officer of the same rank and having the same degree of disablement. The bonus would be added also for the same period to the alternative retired pay of officers, the alternative pensions of men, and the alternative pensions of the widows of all ranks. In the case of officers and their widows or relatives, there were, however, money limits, which the pensions and bonus combined must not exceed. These limits were at the following rates: Officers £300 a year, nurses £175 a year, naval warrant officers £175 a year, officers' widows (exclusive of children) £200 a year, naval warrant officers' widows (exclusive of children) £100 a year, officers' parents or sisters £100 a year, naval warrant officers' parents or sisters £75 a year. It was not necessary for applications to be made for the bonus, which, with arrears, would be paid as expeditiously as possible.

Women Doctors in Military Hospitals: Income Tax.—Mr. Baldwin, Secretary to the Treasury, in a written answer to Captain Tudor-Rees, stated that the ladies employed upon medical duties at the Military Hospital, Endell Street, London, were civilian medical practitioners, and were not serving as members of the naval or military forces of the Crown; he did not dispute that they were drawing pay and allowances under Royal Warrant from army funds, and were under the command of the D.D.M.S., London District. The District Commissioners of Taxes, on appeal on behalf of some of these doctors, had decided that they were not entitled to service rates of income tax.

Doctors and Nurses for Home Duties.—In reply to Mr. Leonard Lyle, on March 11th, Captain Guest said that every effort was being made to release as many doctors and nurses as could be spared by the army. The latest returns gave the total number of trained and untrained nurses demobilized since the armistice as 7,441, and steps had been taken to demobilize large numbers of medical officers. This had now become possible, owing to the removal of certain restrictions which had delayed action.

Irish Poor Law Medical Officers' Pay.—Mr. Macpherson (Chief Secretary for Ireland) stated on March 10th, in reply to Sir William Whitla, that the Local Government Board had urged all the boards of guardians throughout Ireland to make graded scales of payment to the Poor Law medical officers, with the result that 143 boards out of a total of 154 had granted improved remuneration to medical officers. There were only eleven boards of guardians which had not improved the salaries of their medical officers, and these were again being urged to adopt graded scales of salary. Mr. Macpherson promised to consider the suggestion that steps should be taken to improve the conditions of service with a view to provision being made therefor in the Ministry of Health Bill which would be extended to Ireland.

Influenza and Cholera in India.—Mr. Fisher, in a written reply to Mr. Bennell, stated that the following telegram had been received from the Government of India:

The first influenza epidemic in Bombay City was in June last and was responsible for over 1,600 deaths; subsequent virulent outbreaks occurred in September, October, and early in November, during which period the mortality in Bombay City exceeded the normal by 14,678. Besides bacteriological investigation relief measures consisted of treatment in hospitals, house-to-house visitation, free supply of milk and woollen jackets to prevent pneumonia, opening of roadside dispensaries in several wards, and supply of free medicine. Cholera appeared in epidemic form during second week of December last and continued till third week of February. The disease was mainly confined to mill districts, and recent strikes not only aggravated it but prolonged its duration. Deaths reported in Bombay City from cholera during the period number 9,589. In view of scarcity prevailing in neighbouring districts steps were taken to segregate immigrant labour in special camps, etc. Deaths from influenza in India as a whole in 1918 are calculated at 5,000,000 for British India and 1,000,000 for Indian States.

Guilty but Insane.—In reply to a question about a man found guilty of murder, but insane at the time, at the recent Kent assizes, the Home Secretary said that the man had been certified under the Mental Deficiency Act in 1914, but could not be sent to a home at that time as no suitable accommodation was available. At the outbreak of war the building just completed for a state institution at Moss Side was lent to the War Office as a hospital for men suffering from mental disorders. The building, it was hoped, would be returned to the Board of Control in a few months. Until this was done, the accommodation for imbeciles with criminal tendencies would be insufficient. In the meantime some temporary accommodation would be provided by the Board in another institution as soon as the staff was available.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON SUB-LIEUTENANT F. W. LE MARCHAND.

Surgeon Sub-Lieutenant F. W. Le Marchand, R.N.V.R., was returned as having died on service, in the casualty list published on March 3rd.

ARMY.

Died on Service.

CAPTAIN J. CAMPBELL, R.A.M.C.

Captain John Campbell, R.A.M.C. (S.R.), died at Liverpool on February 19th, aged 30. He was the third son of Mr. J. S. Campbell of Wigan, and was educated at Liverpool University, where he took the Kanthack medal in pathology in 1909, and graduated M.B. and Ch.B., with honours, in 1910, and M.D. in 1916. He also gained the Robert Gee research fellowship in anatomy at Liverpool. After filling the posts of house surgeon and house-physician in the Royal Infirmary, Liverpool, and of senior assistant to the professor of anatomy in the Royal College of Surgeons, Ireland, he became demonstrator of anatomy in Liverpool University, and surgical tutor and registrar of Liverpool Royal Infirmary. He took a commission as lieutenant in the Special Reserve of the R.A.M.C. on August 6th, 1914, and was promoted to captain on April 1st, 1915. He went to France in August, 1914, and served for some time as surgeon in No. 7 Stationary Hospital, Boulogne, then in the same post in a general hospital at Camiers, and subsequently as orthopaedic surgeon in a London hospital.

CAPTAIN F. B. CHENOY, I.M.S.

Captain Ferozeshah Bapuji Chenoy, Indian Medical Service, was reported as having died on service, in the casualty list published on February 28th. He was educated at Bombay University, where he graduated L.M.S. in 1912, and at the London Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1913. He entered the I.M.S. as lieutenant on August 1st, 1914, and was promoted to captain on August 1st, 1917. He was just thirty years of age.

DEATHS AMONG SONS OF MEDICAL MEN.

Brown, Ralph Vipont, younger son of Dr. Vipont Brown of Longsight, Manchester, died in France on March 1st, aged 20, at his work under the Friends' War Victims' Relief Committee.

Dunlop, Harry Holms-Kerr, Lieutenant Army Service Corps, youngest son of the late Dr. James Dunlop of Glasgow, died in Italy of influenza on February 13th, aged 33.

FitzPatrick, Noel, Australian Flying Corps, son of Dr. FitzPatrick of New South Wales, died of pneumonia at Gibraltar on February 16th. He had gained the Military Medal before he got his commission.

Johnson, Malcolm, only son of the late Mr. Frank Johnson, F.R.C.S., of Spain, died at Endsleigh Palace Hospital for Officers on February 18th.

Johnson, Samuel Clement, late Lieutenant Royal Field Artillery (T.F.), son of the late Colonel W. E. Johnson, I.M.S., died suddenly on February 8th, at Bournemouth, of illness contracted on active service. His commission was dated March 3rd, 1917.

Milligan, James Henry, Captain 58th Vaughan's Rifles, eldest son of the late Dr. David Milligan of Edinburgh, reported wounded and missing in France on September 25th, 1915, now presumed killed on that date. He was born on December 9th, 1886, got a commission in the Connaught Rangers on May 4th, 1907, and joined the Indian Army on October 26th, 1909.

Milligan, John Richard, Lieutenant Indian Army Reserve of Officers, son of the late Dr. David Milligan of Edinburgh, reported wounded and missing on March 8th, 1916, in Mesopotamia, now presumed killed on that date, in the unsuccessful attempt to relieve Kut. His commission was dated December 11th, 1914.

Murray, Ulric George, eldest son of Colonel G. R. Murray, A.M.S. (temporary), Professor of Medicine in the Victoria University, Manchester, died of pneumonia at Winchester on February 17th, aged 24, while on duty at a Y.M.C.A. hut. He had served for some time in France under the Red Cross.

Saunders, Harold Cecil Rich, D.S.O., Major East Yorkshire Regiment, eldest son of the late Mr. Arthur Rich Saunders, F.R.C.S., of Kingston, Jamaica, reported wounded and missing at Hamard Wood, on the Somme, March 30th, 1918, now presumed killed on that date. His brother, Captain Arthur Hugh Rich Saunders, 2nd King Edward's Own Gurkhas, the Sirmoor Rifles, was killed on March 8th, 1916, while leading an assault on the Dugaila redoubt, Mesopotamia, in the unsuccessful attempt to relieve Kut.

HONOURS.

A SPECIAL Supplement to the *London Gazette* dated March 8th contains a further list of awards in recognition of "gallantry and devotion to duty in the field." The list includes the following medical officers, who receive the awards indicated; all belong to the R.A.M.C. unless otherwise noted:

Bar to D.S.O.

Lieut.-Colonels: Daniel P. Kappele, D.S.O., 5th Ambulance C.A.M.C. (D.S.O. gazetted June 3rd, 1918); Thomas McCleask, D.S.O., 10th Field Ambulance C.A.M.C. (D.S.O. gazetted January 1st, 1918).

Major Orvil A. Elliott, D.S.O., C.A.D.C., attached 5th Field Ambulance C.A.M.C. (D.S.O. gazetted February 15th, 1919).

Captain (acting Lieut.-Colonel) William R. Gardner, D.S.O. (S.R.), attached 138th Field Ambulance (D.S.O. gazetted January 1st, 1918).

D.S.O.

Major Robert F. Craig, 15th Field Ambulance A.A.M.C.

Captains (acting Lieut.-Colonels): William W. Boyce, No. 2 Field Ambulance; William H. L. McCarthy, M.C. (S.R.), attached 19th Field Ambulance.

Temporary Captain Clarence R. Young, M.C., attached 1st Battalion Shropshire Light Infantry.

Second Bar to Military Cross.

Temporary Captain (acting Major) George Rankine, M.C., D.A.D.M.S., 9th Division (M.C. gazetted November 4th, 1915; first bar gazetted July 26th, 1918).

Bar to the Military Cross.

Captains (acting Majors): Herbert B. Low, M.C., 2/2nd (Northamptonshire) Field Ambulance, T.F. (M.C. gazetted January 10th, 1917); James B. Scott, M.C. (S.R.), attached 16th Field Ambulance (M.C. gazetted October 18th, 1917).

Captains: James E. Barry, M.C., C.A.M.C., attached 2nd Canadian Battalion East Ontario Regiment (M.C. gazetted December 2nd, 1918); Frederick T. Campbell, M.C., C.A.M.C., attached 8th Canadian Battalion, Manitoba Regiment (M.C. gazetted February 1st, 1919); Henry C. Davis, M.C., 10th Field Ambulance, C.A.M.C. (M.C. gazetted January 13th, 1918); Harry C. Moses, M.C., 5th Field Ambulance, C.A.M.C. (M.C. gazetted February 15th, 1919).

Temporary Captains: Michael C. Burke, M.C., attached 2nd Battalion Durham Light Infantry (M.C. gazetted August 25th, 1916); George M. Cameron, M.C., attached 65th (W. Lancs.) Field Ambulance, T.F. (M.C. gazetted July 26th, 1918); James C. Ogilvie, M.C., attached 1st Battalion Border Regiment (M.C. gazetted September 16th, 1918); John Roger, M.C., attached 1st Battalion Border Regiment (M.C. gazetted September 16th, 1918); David C. Suttie, M.C., attached 1/2nd (North Midland) Field Ambulance, T.F. (M.C. gazetted January 1st, 1917); Gwilym D. Watkins, D.S.O., M.C., attached 2nd Battalion West Riding Regiment (M.C. gazetted January 1st, 1918); William B. Wilson, M.C., attached 1st Battalion Devon Regiment (M.C. gazetted December 2nd, 1918).

Lieutenant (acting Major) James La F. Lauder, D.S.O., M.C., 138th Field Ambulance (M.C. gazetted December 11th, 1916).

Lieutenant (temporary Captain) William H. Ferguson, M.C., attached 8th Battalion Royal Berkshire Regiment (M.C. gazetted September 16th, 1918).

Military Cross.

Captains (acting Majors): Henry M. Barrett, No. 2 Field Ambulance, C.A.M.C.; William D. Frew, T.F., attached 131st Field Ambulance; Harry P. Rudolph (Egypt); Michael White, No. 1 Field Ambulance.

Captains: Leslie T. Allsop, 10th Field Ambulance, A.A.M.C., attached 39th Battalion Australian Infantry; Joseph R. Anderson, A.A.M.C., attached 45th Battalion Australian Infantry; William J. Binns, A.A.M.C., attached 33rd Battalion, Australian Infantry; John S. Clarke, T.F., attached 5th Battalion Royal Irish Rifles; Lambert D. Densmore, C.A.M.C., attached No. 1 Field Ambulance; Albert G. Fleming, C.A.M.C., attached 4th Canadian Infantry Battalion; Frederick McN. Johnson, C.A.M.C., attached No. 2 Field Ambulance; Arthur P. Lawrence, 6th Field Ambulance, A.A.M.C.; Gladstone W. Loughheed, 4th Field Ambulance, C.A.M.C.; Allan Y. McNair, C.A.M.C., attached 10th Infantry Battalion Alberta Regiment; James Thompson, attached 2nd Battalion, Bedfordshire Regiment; Rene E. A. Weston, C.A.M.C., attached No. 2 Canadian Field Ambulance; Henry P. Whitworth, S.R., attached 6th Battalion King's Own Scottish Borderers; Edward A. Woodward, 8th Field Ambulance A.A.M.C., attached 29th Battalion Australian Infantry.

Temporary Captains (acting Majors) Samuel B. B. Campbell, 108th Field Ambulance; James A. Doull, 103rd Field Ambulance; Stanley Penwick, 16th Field Ambulance; Robert B. Rutherford, 91st Field Ambulance, attached 6th Division; Christopher Sullivan, 75th Field Ambulance; Alexander W. Uloth, 132nd Field Ambulance.

Temporary Captains Harold J. Bensted, 140th Field Ambulance, attached 138th Field Ambulance; Gideon A. Beyers, S.A.M.C., attached 1st Battalion South African Infantry; Gavin S. Brown, attached 1/4th Battalion Leicester Regiment, T.F.; George O. Connell, attached H.Q. R.F., 41st Division; Cedric L. Dold, attached 1st Battalion South Wales Borderers; Colanda Madieh Ganapathy, I.M.S., attached Grenadiers, I.A.; George A. C. Gordon, attached London

Regiment; Edward H. H. Grainger, attached 1st Battalion Leicester Regiment; Zachariah A. Green, attached 7th Battalion Wilts Regiment; Alfred P. Hart, No. 2 Field Ambulance; St. George M. L. Homan, attached 1/8th Battalion Notts and Derby Regiment T.F.; George Jackson, attached 15th Battalion Notts and Derby Regiment; Henry R. Lawrence, 1st Field Ambulance, S.A.M.C.; Malcolm Manson, attached 10th Battalion Royal West Surrey Regiment; Robert C. McMillan, attached 38th Battalion M.G.C.; Frederick R. Sturridge, attached Royal Scottish Fusiliers; Edward C. Tamplin, attached 9th Battalion Scottish Rifles; William Tudhope, 17th Field Ambulance; Robert W. L. Wallace, attached 9th Battalion East Surrey Regiment.

Lieutenant (temporary Captain and acting Major) Gerald E. Spicer, 107th Field Ambulance, R.A.M.C.

Lieutenants: Will G. F. Owen-Morris, S. R., attached 2nd Battalion, Leinster Regiment; Sohan Lal Bhatia, I.M.S., attached Infantry I.A. (Egypt).

Temporary Lieutenant William Hickey, attached 8th Battalion, East Surrey Regiment.

CIVIL PRACTITIONERS' WAR SERVICES.

The names of the following civil medical practitioners have been brought to the notice of the Secretary of State for War for valuable medical services rendered in the United Kingdom in connexion with the war:

J. McK. Ackland, G. Alexander, C. W. Alford, C. M. Anderson, W. D. Anderson, Sir W. M. A. Anderson, J. F. Atkins, S. E. Atkins, J. P. Atkinson, W. Baigent, W. E. Baker, G. F. Barnes, W. R. Bates, R. A. Bennett, P. H. Benson, H. Bentley, H. W. Bethell, J. Black Milne, R. H. Blaikie, J. F. Blood, C. Bolton, V. Bonney, H. Bott, R. O. Bowman, J. C. O. Bradbury, F. Brightman, T. B. Broadway, E. H. Brock, T. H. Brown, M. Bryson, H. M. Bunday, W. F. R. Burgess, M. Burnet, A. C. Burrows, H. B. Butler, W. B. Butler, G. Y. Caldwell, J. E. G. Calverley, C.M.G., W. E. Cant, J. W. Carr, A. J. Carter, E. G. Carter, J. W. Caton, E. Cautley, W. L. Chubb, J. Chute, Miss I. M. Clarke, J. J. Clarke, T. W. Clay, P. P. Cole, L. Cole-Baker, D. W. Collings, E. G. Colville, C. T. T. Comber, C. J. Cooke, J. G. Cooke, H. P. Costobadie, E. A. R. Covey, G. Cran, E. P. Cumberbatch, C. Curd, F. C. Curtis, H. G. Dain, J. D. Davies, H. C. Dent, L. G. Dinon, L. C. T. Dobson, J. A. Drake, C. E. Drennan, D. Drummond, R. H. W. Dunderdale, M. A. Dutch, H. P. Ealand, A. M. Elliot, W. F. Erskine, W. J. Essery, C. J. Evers, R. W. T. Ewart, H. L. Ewens, E. H. Ezard, G. Faris, E. Farr, F. Fawcett, G. W. B. Featherstone, R. A. Fegan, E. C. Fenoulhet, A. C. Ferguson, W. A. Fogarty, S. G. Fowler, T. W. Fowler, A. D. Fraser, A. M. Fraser, L. Fraser, A. L. Fuller, P. Furnivall, M. H. Gardner, A. T. B. Gavin, Miss G. Gazdar, H. W. Gell, W. D. Gimson, B. Glendinning, L. G. Glover, H. J. Godwin, R. M. Goins, T. A. Goodfellow, W. A. Gordon, T. P. Gostling, R. Grant, Miss H. Gray, H. T. Gray, G. R. Green, E. C. Greenwood, G. Grindlay, R. M. Grogono, C. N. Groves, G. Gunn, L. G. Guthrie, G. R. Harland, H. Head, J. W. Heekes, W. Hern, H. T. Herring, C. M. Hewer, E. S. E. Hewer, T. B. Hickley, D. W. C. Hood, C.V.O., G. H. J. Hooper, B. Hulke, J. Ingram, W. S. Inman, A. Jackson, P. S. Jakins, J. R. Jeffrey, R. C. Jewsbury, R. G. Johnson, G. J. Johnston, G. Jonckheere, S. E. Jones, J. F. Jordan, N. H. Joy, D. Kennedy, F. W. Kennedy, J. C. King, T. S. Kirk, Miss A. Kirker, Mrs. A. V. Knox, F. Lace, J. H. W. Laing, G. J. Lane, F. C. Langford, C. P. Lankester, J. B. Lawford, P. C. W. Laws, A. Laws, C. F. Le Sage, E. E. Lewis, P. G. Lewis, J. E. Linnell, F. S. Lloyd, J. D. Lloyd, T. E. Lloyd, G. H. Lock, J. P. Lockhart-Mummery, H. L. Lewis, A. Lyndon, E. Lynn, D. R. Macdonald, J. Macdonald, H. J. Macevoy, G. MacGill, H. H. B. Macleod, F. R. Mallett, H. Marshall, F. E. Marston, W. Martin, W. B. Maurice, L. T. McClintock, A. M. McConnell, K. C. McKenzie, H. J. McKisack, G. E. P. Meldon, J. H. Menzies, J. Metcalfe, I. G. Modlin, A. P. Mooney, A. Morison, A. E. Morison, E. F. Morris, R. D. Mothersole, W. T. Mullings, R. A. Murray, J. F. Nall, G. P. Newbolt, W. Norbury, A. E. Normington, W. W. Nuttall, E. J. P. Olive, W. W. Ord, D. R. Oswald, T. E. Pallett, F. S. Palmer, J. L. Palmer, Sir T. W. Parkinson, A. R. Parsons, A. G. Paterson, E. de F. Payne, H. G. Pennell, E. V. Perry, J. P. Philip, T. B. Poole, J. F. Porter, J. C. Potter, R. H. Powers, G. L. Preston, W. A. Pride, B. L. Pritchard, B. G. Pullin, R. M. H. Randall, E. F. Reeve, P. Rendall, J. Richardson, G. A. Roberts, Mrs. A. L. C. Robson, J. D. Robson, W. Roughton, A. R. P. Russell, F. J. Sailer, H. Sainsbury, F. J. Sarjeant, G. J. Scale, R. E. Schofield, C. P. Scott, E. W. Selby, H. T. Sells, R. H. Shaw, O. B. Shelswell, E. W. H. Shenton, D. A. Shields, J. Simcock, J. D. Sinclair, J. A. Small, C. W. Smeeton, G. Smith, J. A. Smith, Sir T. R. H. Smith, Bt., J. C. Smyth, R. V. Solly, T. F. Southam, J. A. Southern, G. R. Sparrow, H. J. Spon, E. Stainer, L. E. Stamm, G. S. Staushield, R. de S. Stawell, O. T. Stephenson, G. St. George, H. W. M. Stover, A. J. Swallow, F. T. Talbot, J. G. C. Taunton, A. Tennyson-Smith, G. C. Thomas, W. E. Thomas, W. T. Thomas, A. Thompson, S. Thompson, J. Thomson, M. Thomson, N. F. Ticehurst, S. A. Tidey, H. T. M. Townsend-Whitting, R. H. Trotter, A. J. Troughton, R. Turner, G. B. Wainwright, R. A. Walter, A. H. Varde, W. Washburn, R. de C. Wheeler, W. S. Whitcombe, C. P. White, E. F. White, G. B. M. White, A. Wightwick, L. E. Wigram, S. M. Wilson, R. Wilkins, D. J. Williams, H. C. Williams, J. A. Wilson, M. S. Wilson, G. M. Winter, G. V. Worthington, R. B. Wright, D. T. Wylie, E. C. Young, J. C. Young.

Scotland.

THE MINISTRY OF HEALTH.

WHEN the Ministry of Health Bill was made public in November last it was considered expedient to form in Scotland a temporary council or committee drawn from the recognized official medical bodies, to collect and formulate the views of Scottish practitioners. The proposal was considered by the Scottish Committee of the British Medical Association at a meeting in Edinburgh on January 4th, and it was agreed to co-operate with the other official medical bodies in the formation of such a committee. At a conference held on the same date, to which were invited representatives of the Scottish Branch of the General Medical Council, the Scottish Universities, the Scottish Royal Medical Corporations, the Scottish Committee of the British Medical Association, and the Association of Medical Officers of Health, it was agreed to form a committee—to be known as the Scottish Ministry of Health Committee—for the purpose of collecting and formulating the views of the Scottish members of the medical profession on the proposals under discussion for the establishment of a Ministry of Health, and on other important problems of medical reconstruction.

It was decided that the committee should consist of 44 members, made up as follows:

Scottish members of the Scottish Committee of the British Medical Association	18
Members of the Scottish Branch of the General Medical Council	9
One representative from each of the Medical Faculties of the Scottish Universities	4
Two representatives from each of the other licensing bodies in Scotland	6
Two representatives from the Association of Medical Officers of Health	2
One representative from the Scottish Association of Medical Women	1
Four members to be co-opted later	4
	44

At the first meeting office-bearers were appointed as follows: Chairman, Sir Donald MacAlister. Vice Chairmen, the Presidents of the Royal Medical Corporations, the Direct Representative for Scotland on the General Medical Council, the Chairman of the Scottish Committee, and Dr. Goff (Bothwell). Secretary, Dr. Frederick K. Smith (Aberdeen). It was agreed that the office-bearers should form a Business Subcommittee to prepare business for the full committee.

The committee has met twice to consider the Ministry of Health Bills as published in November, 1918, and February, 1919. Each clause in the bills was discussed, and various suggested amendments were considered. Ultimately it was resolved to communicate the following to the authorities concerned:

1. That provision ought to be made by direct enactment in the Ministry of Health Bill for the transfer to the Minister of Health of the administration of the Anatomy Acts, and to the Scottish Board of Health of the administrative work of the Highlands and Islands Medical Service Board.
2. That with regard to the constitution of the Scottish Board of Health, the proposed minimum of medical representation—namely, one member—is totally inadequate, and that not less than one-third of the members of the Board ought to be registered medical practitioners; and also that the special provision that a medical member of the Board should be the holder of a "diploma in sanitary science, public health, or State medicine under Section 21 of the Medical Act, 1886," is unnecessary, and should be omitted.

The Secretary of State for Scotland said on March 11th, in reply to Mr. Cathcart Wason, that the Highlands and Islands (Medical Service) Grant Act, 1913, provided for the payment of £42,000 a year for medical service in that area and the transfer of powers to the Ministry of Health would not affect that specific appropriation.

HEALTH IN THE HIGHLANDS.

Dr. Lachlan Grant, whose long connexion with Ballachulish as medical officer enables him to speak with special knowledge, gives an interesting account of the conditions of life and health in the Highlands in a paper reprinted from the *Caledonian Medical Journal* for January. Although the land of brown heath and shaggy wood does not offer riches to the cultivator there are commercial

possibilities in farming by scientific method, the utilization of electrical power, fishing, and afforestation, which have hitherto been to a considerable extent neglected. Dr. Grant expresses the belief that most of the areas now allowed to run to waste and many of the deer forests will soon be things of the past, but it is to be feared that the best of Scotland's manhood will still continue to be attracted by the opportunities of a richer life overseas. Dr. Grant deals with the housing question in a somewhat optimistic spirit. All will agree that in the interest of the public health and the amenities of life an "elastic and comprehensive scheme" is imperatively required; the difficulty is to frame such a scheme and then to get it carried through a legislature. Although the Highlander is still, as the war has abundantly shown, hardly beyond most classes, men, women, and children suffer from bad housing, wrong diet, and neglect of hygiene, and thus conditions are produced which make for the degeneration of the race. The root of the evil is poverty, and this can only be remedied by the intelligent use of natural resources and industrial development. The chief obstacle to this is the difficulty of transport, which may be to a considerable extent overcome by the application of modern methods, especially the motor boat. The scope of the aeroplane seems likely to be limited by the want of landing grounds. Dr. Grant considers that, though the Highlands and Islands Medical Service Act is good, it should be replaced by a more generous scheme. He urges the provision of better housing and surgery accommodation, arrangements for the relief of doctors when overworked or struck down by illness in remote parts, improvement of the economic conditions of the service, and the grant of pensions to men who have spent themselves in the work. He also insists on the need of school clinics, more local hospitals with maternity wards and some system for the removal of serious cases to city hospitals, periodical visits by skilled dentists, and more maternity nurses in outlying districts. The powers of the medical officers of health should be enlarged, and there should be a special Highlands department in the proposed Health Ministry. We commend Dr. Grant's suggestions to the attention of all interested in the prosperity of the Highlands, which are a national asset of the highest value as a breeding ground of men who deserve well of the State, a field for manly sport which is a training for war, a source of new vigour to the wearied intellectual toiler, and a joy for ever to lovers of things of natural beauty.

Correspondence.

A RURAL VIEW OF SCHEMES FOR NATIONAL MEDICAL SERVICES.

SIR,—I have been much interested in the schemes for a state medical service suggested by Sir Bertrand Dawson, Dr. Howarth and Dr. Richmond, and others. Whether such schemes would be conducive or not to the public welfare, or of benefit to the medical profession, I do not presume to argue. But the airy way in which all pass over rural conditions is almost fatal to their schemes. I would suggest that these writers, and others who may think of evolving schemes, should spend at least two months working in a rural—not semi-rural—practice during the winter months. They would then realize the futility of their schemes as applied to rural conditions, and the totally inadequate scale of remuneration suggested. The present rate of payment under the Insurance Acts for such work is as bad as it can be. I may add that, speaking for myself, nearly all my work is done by visiting, and that surgery work, with the exception of dispensing, is almost negligible. —I am, etc.,

Wrrington, Somerset, March 10th.

HUBERT C. BRISTOWE.

THE IDEAL OF THE PROFESSION.

SIR,—I have been much struck of late by one characteristic of letters of correspondents, and of views expressed in certain meetings purporting to represent the medical profession. That to which I refer is the reiterated theme, "What shall I get?" "How shall we be compensated?" "How shall we defend ourselves from the Government?" Surely this attitude of mind is entirely foreign to the

highest ideals which should, and in the main have, animated the best workers of our profession.

The war perhaps more than any other emergency has shown that the members of the medical profession are good citizens and patriots first, imbued with a love of their country, and enthusiasm for their profession. In the changed world in which we find ourselves, surely our first thought ought to be, "How are we going to organize the profession throughout, so as to be a more efficient instrument for carrying out the many branches of work which the community requires of us?" Not how are we going to thwart the Government and say "hands off"? but how are we going to advise the Government, whom we have taken our share in electing as our leaders, and through whom (for that is what they are there for) we are going to modernize the profession to be best fitted for fulfilling the heavy responsibilities which the needs of the country throw upon us? We have got to be an A1 nation, and the sound advice of the medical profession will be one of the chief factors in forming A1 citizens.

The question of fees, remuneration, and rewards is as important to us as to any other class of the community, and there should be a special department to watch our financial interests. Many of us have suffered as a result of the war, some more than others; it is inevitable that sacrifices should be unequal, and it ought to be the duty of the profession to see that hard cases are investigated and, as far as may be, relieved. But with shame I noticed that some members of the profession suggested that we should follow the example of certain trades—which every decent citizen deplores—and try to make the whole community suffer to gain our ends.

What could be more foreign to every tradition of the profession?—we, who are the trustees of knowledge obtained by the work and devotion, and sometimes lives, of an illustrious brotherhood of famous men.

For the purpose of reconstruction it is necessary for every member of the profession to discard any mental bias which self-interest in his particular branch of work may have given him, whether he be consultant, specialist, member of hospital staff, or general practitioner.

What I wish to emphasize is, that the last four and a half years have altered, or should have altered, the outlook of every one. If energy and devotion to duty are needed for war, surely in peace the same qualities are as much worth while for our country, redeemed at such a price; and the unity of the profession is required first and foremost for this purpose.—I am, etc.,

February 25th.

COLONEL R.A.M.C.(T.F.).

PROHIBITION OF UNQUALIFIED PRACTICE.

SIR,—It is to be hoped that steps will be taken by the British Medical Association to effect, under a Ministry of Health Act, due and proper protection of sick persons from the dangers of unqualified medical and surgical practice. The evils of unqualified dental practice have been lately fully exposed by the report, just issued, of the Departmental Committee; these evils are small in comparison with those which result from charlatans in medicine and surgery. Protection is now afforded under war legislation to persons suffering from specific diseases, in that none but registered practitioners can treat such cases; and unqualified midwifery practice is also banned by law. No Ministry of Health will be sound unless the treatment of all diseased conditions is placed in the hands of lawful practitioners, and penal measures of an effective character made possible against quackery.

The medical profession deserves well of the country; it has met the almost overwhelming claims made upon it by the Government without demur or delay, and has not sought, by strikes or threats of strikes, or trade union bluster, to make capital out of the death struggle which engaged the empire. The least the country can do as a slight recognition of the valuable skilled service given so generously is to grant to the registered the monopoly of the treatment of disease, especially as by doing this it will afford equal protection to the public and greater security to public health. The existing Medical Acts, as is well known, only protect scheduled titles and not practice. Unqualified practitioners abound in this country, and amongst them are numerous aliens, using titles M.D. Berlin, M.D. Vienna, LL.D. Vienna, and whether they possess these degrees or not is immaterial. It protects them from

prosecution under Section 40 of the Medical Act, 1858. Whilst our members have joined up, given up lucrative practices, lost their lives, their health, these aliens and other unqualified persons have, as "osteopaths" and "specialists" self-styled, been making handsome incomes, safe and secure from any danger of conscription or active service. It is high time that a clean sweep be made of these persons, who trade upon the credulity of the public; unqualified practice of every description must be suppressed as a fraud and a danger to public health. This we have a right to insist upon, and it must be clearly understood by the Government that no Ministry of Health Act will be satisfactory to us unless it deals effectively with this pernicious scandal. Dr. Addison is now in a position to effect this, and no one knows better than he the absolute necessity for the due measure of protection which we registered practitioners claim, not only in our own interests, but in the interests of public health.—I am, etc.,
London, W.C., March 11th. A. GEORGE BATEMAN.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—My observation that my article on prophylactic cystotomy in the paraplegic bladder was without effect on Colonel Fullerton and his colleagues, has been taken to mean (1) that the method was not considered and tried, (2) that it had no effect on the surgical practice in these cases.

I am extremely sorry to have written so loosely that there should have been a doubt in the matter, the more so that this has apparently hurt the feelings of a group of surgeons in France of which Colonel Fraser is the able champion. My meaning, which certainly should have been stated at full length, was that the article had no general effect on the method of treating these cases. I further stated that the stream of cases dying of catheter infection continued unabated.

These statements are capable of proof. From October 1st, 1916, to December 31st, 1917, I had the opportunity of examining or getting full notes of 369 cases of paraplegia—of these 110 (29.81 per cent.), about one-third, died. With a very few exceptions, when haemothorax was a complication, death was due to septic pyelonephritis the result of catheter infection in the first few days after the injury.

This only represents the mortality of these 369 cases in a limited period of time. The real mortality is very much higher, and from my experience of the later stages of such cases, I should say that the mortality from pyelonephritis is very moderately stated at 80 per cent. In a number of these cases cystotomy had been performed after the bladder was infected. I could find no case in which the bladder had been drained before a catheter was passed.

Colonel Fraser states (BRITISH MEDICAL JOURNAL, March 8th, 1919) that the method I advocated was practised at the Boulogne base in 1915, and Colonel Fullerton says it had already been tried "when hospitals began work in France." Base hospitals, I suppose. Does Colonel Fraser wish us to understand that the paraplegics reached the Boulogne base without having a catheter passed? If not, I am afraid he is confusing the drainage of a catheter infected bladder with drainage of a bladder before any catheter has been passed, which is a very different matter. Colonel Fraser goes on to say that after my article appeared, suprapubic drainage without catheter became the routine practice with himself and some other surgeons. It is very gratifying to know this, and to realize that in the hands of Colonel Fraser and some of his colleagues the method had a fair start.

We must leave Colonel Fraser now, for he has evidently no more first-hand knowledge of these cases, and turn to Colonel Fullerton for information. The method, he says (BRITISH MEDICAL JOURNAL, March 1st, 1919), was tried and rejected owing to the "practical difficulty of nursing of such cases." When we remember that at that time the only alternative method had a mortality of 80 per cent., these difficulties of nursing must have been very formidable, and it would be of practical interest to know what they were.

I have before me the notes of the only two cases I have seen that were treated by prophylactic cystotomy. Both were operated on at a Canadian casualty clearing station. There was no leakage alongside the cystotomy tube at any time. There was mild alkaline cystitis in both, which

cleared up under treatment, leaving a sterile urine. There was no pyelonephritis in either case. The bladder was allowed to heal up when the second stage commenced, and in one case the patient eventually regained voluntary control for ten minutes after the call.

One final word. I protested against Colonel Fullerton attributing to Dr. Fearnside's work done by myself. To this he replies that "Dr. Fearnside's excellent article is familiar to everyone as chiefly a review of all previous work." Possibly it may be; but this does not explain, and certainly could not excuse, Colonel Fullerton quoting the words I wrote, and placing them under "Dr. Fearnside points out."—I am, etc.,

London, W., March 11th.

J. W. THOMSON WALKER.

THE STATICS OF THE FEMALE PELVIC VISCERA.

SIR,—As my name was mentioned in your columns of March 1st by the reviewer of a book on the statics of the female pelvic viscera, I must say that I have not noticed any change in the structure of the female pelvis. Why discuss *ad nauseam* matters that have been settled by direct observation and experiment? My own work and that of others has been described in my article in Eden and Lockyer's *System of Gynaecology*, and in various other places. But let me say once more that if you will take any case of uterine prolapse and remove the upper half of the anterior vaginal wall, going well back on each side of the cervix, you will expose the two lateral fibromuscular pedicles of the uterus, the parametria, which carry the blood supply of the organ ensheathed in connective tissue and unstriped muscle. If you will now amputate the cervix and stitch together in front of the stump thereof the tissues you have cut away from the sides thereof, you will cure the prolapse so far as the uterus is concerned. The lower part of the vaginal walls and the perineum may require attention; but it is the chain that keeps the dog at home and not the gate of the garden. Stitching the edges of the levatores together is a step in the repair of the perineum; but to rely upon it for the cure of prolapse of the uterus would be like offering garters to a man who requires braces.

A writer in the *Medical Press and Circular* stated the other day (February 19th) that "the cure of prolapse is still a problem." But surely each should speak for himself. I know a dozen operators to whom the cure of prolapse presents no problem, but who secure it with monotonous regularity without using either clumsy devices like interposition or suspension done by the abdominal route. When one has to deal with six or eight cases of a mechanical condition every week, year after year, one naturally discovers the quickest and easiest way of securing both good immediate results and freedom from recurrence.

These things are on view at St. Mary's Hospital every day except Sundays, and also at the Manchester Royal Infirmary on Tuesdays and Fridays.—I am, etc.,

Manchester, March 10th.

W. E. FOTHERGILL.

METHODS OF INFANT FEEDING.

SIR,—In answer to Dr. G. H. Hickling's letter, the point about which we do not agree is the interval between feeds. Perhaps I did not make it clear enough that the two-hourly interval was only for the first few weeks of the infant's life. I quite admit that it is frequently possible to lengthen the times between feeds to three hours after the first three or four weeks, provided that the baby is satisfied, gains weight, and sleeps well at night.

In reply to Dr. Hickling's point that mothers of the working class do not have time to feed their babies two-hourly—it is my experience that these women always have someone staying in the house to help them for the first three or four weeks, and it is easy for the mother who is in bed to feed the baby while the other woman does the work; it is much better and more restful for her to do this than to hear the baby crying. For many young babies, even if they are allowed to take as much as they like, cannot hold sufficient to last them the three hours, consequently they wake up about two hours after a bottle and cry till the next feed is due. If it is reasonable to say that babies require different amounts of food, it is surely common sense that some have a naturally smaller capacity, and so one baby may do well on three-hourly feeds and another badly—four-hourly feeds of course are very much worse.

But the main object I had in writing on this subject was to draw attention to the fact that the *total quantity of food* given to babies at many hospitals and infant welfare centres is quite inadequate. I have known of a 10 lb. baby fed at three-hourly intervals, giving a total of seven feeds in the twenty-four hours, and getting only 2 oz. a feed during the second week—that is, a total of 14 oz. of food a day, which I am sure Dr. Hickling will agree is to say the least of it, insufficient. It is the small measured feeds without making any allowance for the size or natural appetite of the baby which I so strongly condemn. It is babies fed on this plan to whose pitiful cries I referred, for I have lived in the same house with them, and suffered much in consequence.—I am, etc.,

Limpfield, March 7th.

G. D. LAING.

HOSPITALS FOR MIDDLE-CLASS PATIENTS: THE RED CROSS SOCIETY.

SIR,—The desirability of providing pay hospitals for middle-class patients has often been pointed out, and many who are in favour of such hospitals will be interested to hear whether the Red Cross Society will indirectly help such a scheme.

Very many patients of the middle classes are quite unable to pay the charges of the average nursing homes during a prolonged illness. If admitted into a general hospital, as paying patients, they occupy beds which ought to be reserved, and are badly needed, for the poor; and other very important objections could be added. Some patients are able to engage a trained nurse, but for many this is most difficult and inconvenient, owing to the extra strain in the cooking, etc., for the nurse thus thrown on the household; and in these times so often the help of a servant, or of an additional servant, cannot possibly be obtained.

Pay hospitals for patients of this class, where the charges would be under four guineas weekly, and reduced to the lowest possible amount, would be most helpful. In all such hospitals the patients should, of course, be treated by their own private medical attendant, who would be paid by the patient separately for his services. The need for such hospitals is greatest in medical cases, especially in prolonged illnesses, and it has never been greater than during the last twelve months. The difficulty in such a scheme is the practical one of the expenses. At first no doubt, in these times, the difficulty would be great, but by careful management the money paid by the patients would soon clear the expenses; it could not do more. We have also the difficulty of finding a committee willing to attempt such a scheme.

Possibly the Red Cross Society might be willing to help indirectly. In all our large towns many Red Cross hospitals will soon be closed. Large numbers of Red Cross nurses and men of the R.A.M.C. will soon be discharged, and we have now a favourable opportunity for the trial of such a scheme. In some of our large towns one such hospital, with a staff of Red Cross nurses and men discharged from the R.A.M.C., might be retained as a pay hospital for middle-class patients, under the charge of a special committee.

It is to be hoped that medical men and others who may be able to advise the Red Cross Society will urge the careful consideration of this matter at an early date.—I am, etc.,

March 5th.

R. T. W.

THE SELECTION OF RESEARCH WORKERS.

SIR,—The following figures may be of interest:

During my fifteen years as head of a laboratory I have had 37 researchers associated with me. Each of these was selected by open competition. Of the 37, 1 should, roughly, grade 12 as being "first class," and 5 of these found it necessary to give up research owing to lack of prospect in that direction; 11 I should grade as "good, sound workers," but not first-class brains (possibly the "laborious mediocrities" of your leading article of last week), and of these ultimately 6 passed into medical practice for financial reasons; 14 proved unsuited for research after a careful trial.

Various morals might be drawn from these figures, but,

at all events, it would look as if there were a two to one chance in favour of selecting a man who will not waste your outlay on him.

I enclose my card, and am, etc.,

March 10th.

PATHOLOGY.

ASYLUM MEDICAL OFFICERS.

SIR.—The grievances of asylum medical officers need full ventilation. They are underpaid and overworked, and unsympathetically controlled. When an officer leaves the asylum to go out and take exercise he should give up his keys to the medical officer on duty, and should not be checked or stopped by any gatekeeper or subordinate. On his return he should get his keys from the medical officer on duty and take up his work again. Every medical officer of an asylum should have a house within the grounds of the institution. It is a terrible life to lead, and every relaxation and possible comfort should be available.

I cannot think how medical men take up such underpaid and uncomfortable billets. Reform after reform is needed.

—I am, etc.,

March 3rd.

ANTI-PATHOLOGY.

Obituary.

COLONEL C. M. BEGG, C.B., C.M.G.,

Director of Medical Services, New Zealand Expeditionary Force.

COLONEL CHARLES MACKIE BEGG, who died suddenly on February 2nd from pneumonia following influenza, was born at Dunedin in 1879, the fourth son of the late Alexander Campbell Begg. After a distinguished career as a student at Edinburgh University he graduated M.B., Ch.B. in 1903, and subsequently took the M.D. degree and the diplomas of F.R.C.S.E. and F.R.C.P.E. During the Somaliland fighting in 1903 he served as medical officer on the transport *Itaura*; after, he returned to New Zealand, where he built up a large and lucrative practice in Wellington. He also took great interest in the Territorial service. On the outbreak of the war he volunteered for service, and left New Zealand with the main body of the N.Z.E.F. as lieutenant-colonel in charge of the ambulance. He was present at the fighting on the Canal in 1915. He went to Gallipoli with the Anzacs on April 25th, 1915, and on June 27th was slightly wounded in the knee by a shell. He returned to duty after a few days' absence, but later on developed dysentery, and was invalided after the heavy fighting in August. He returned in November as temporary colonel and A.D.M.S. to the New Zealand and Australian Divisions, and remained in Gallipoli till the evacuation. He then went back to Egypt, where he became colonel and A.D.M.S. to the New Zealand Division. For his services at Gallipoli he was mentioned in dispatches and received the C.M.G. After further service in Egypt he landed in France with the New Zealanders, being present at the fighting at Armentières and on the Somme in 1916. On October 20th, 1916, he became D.D.M.S. to the Second Anzac Corps, which subsequently became the XXII Corps, and saw fighting around Ypres, Messines, La Basse Ville, and later on in the great German offensive he worked in conjunction with the French army attacking west of Rheims. For his services in France he was twice mentioned in dispatches and was awarded the C.B. He was also mentioned in the French *Ordre de jour* and awarded the Croix de Guerre. He became D.M.S. of the New Zealand Expeditionary Force on December 1st, 1918, and retained the post till his death. A man of sterling qualities and of great administrative and professional ability, his death will be a serious loss to the medical services of New Zealand. To the officers who worked under him he was always a loyal friend, and by none will he be more missed than by the medical officers of the main body who had worked under his command. He was a man of conspicuous ability, a good organizer, and excellent administrator. As one who had to work with him during the period he was in England, I can state that he was a pleasant colleague and always endeavoured to do his duty in a manner that reflected credit on the corps of which he was the chief. His death is greatly deplored by all officers and other ranks of the Head Quarters Staff and by the whole New Zealand Medical Corps.

B. M.

GEORGE CUNNINGHAM, M.A., CANTAB., D.M.D., HARV., L.D.S.

GEORGE CUNNINGHAM, the well known dental surgeon, who practised in Cambridge and London, died in a public nursing institution, on March 5th, from the effects of influenza on a constitution already enfeebled by chronic bronchitis. He was 67 years of age, and in his time had filled many public offices; he had been at various times senior dental surgeon to the London Hospital, lecturer on operative dental surgery at the National Dental College and Hospital, lecturer on dental anatomy and surgery in the University of Cambridge, and principal of the Institute of Dental Technology, London.

His appointment by the Home Office to report upon the "Use of phosphorus in the manufacture of lucifer matches" led to considerable improvements in match factories, which resulted in the practical banishment of phosphorus necrosis from among the workers. For this work, and also for his labours in connexion with the statistical tables relating to the incidence of dental caries amongst the children of the poorer classes, which were published by the British Dental Association, he was given a civil list pension of £50 a year by Mr. Asquith during his Premiership.

Medical meetings in Cambridge, whether of the British Medical Association or other bodies, always found in George Cunningham an active local worker and organizer. In his own particular specialty he was well known throughout the country as one of its most strenuous workers in the cause of public health. His devotion to this work was so great that he neglected in great measure the excellent and high class practice he once maintained in Cambridge, and consequently found himself in later life in straitened circumstances.

His latest efforts were directed towards popularizing dentistry among the masses by means of a cinema film which he had produced and exhibited before critical professional audiences in Stockholm and Paris with considerable success. At the moment of his fatal illness he was seeking a passport to enable him to educate the soldiers of the army of occupation on the Rhine in the care of the teeth by means of a special cinema film he had designed.

His remains were cremated at Golders Green on March 8th.

RICHARD WHISH BRIGSTOCKE,

Formerly Lecturer, Medical School, Beyrout, Syria.

DR. R. W. BRIGSTOCKE, who recently died at an advanced age at Scole, Norfolk, had an interesting and varied career. He received his medical education at St. Bartholomew's Hospital when Sir Jaunes Paget was warden. He took the diplomas of M.R.C.S. and L.S.A. in 1859, and entered the navy as surgeon. He served in ships engaged in the suppression of the slave trade, and while thus employed accompanied the expedition which found David Livingstone, with whom he stayed for some time. After leaving the navy, and having obtained the degree of M.D. in Constantinople, Dr. Brigstocke settled in Beyrout; for forty years he had a very large practice in that cosmopolitan city, often going long journeys on horseback into the mountainous districts of Syria. He was an accomplished linguist, and when lecturer on obstetrics, gynaecology, and diseases of children at the Syrian Protestant College and medical school, Beyrout (1870-1882), lectured both in Arabic and English. For services rendered during the cholera epidemic in 1896 Dr. Brigstocke received the Order of the Medjidie, 3rd class, and for similar work among the Italian colony in Beyrout was made Chevalier of the Order of St. Maurice and Lazare by the King of Italy. When he returned to England he settled at Scole, and became an enthusiastic gardener; endowed with great physical strength for his years, he worked in his garden from morn till night, and wielded the axe with Gladstonian skill. He was a staunch churchman, and identified himself with the Board of Missions, serving on its committee. Dr. Brigstocke was a delightful companion and had many friends, not only in this country but also in the Far East. His wife, to whom he had been married fifty-three years, survives him, and he leaves a family of four daughters and two sons, the oldest, Dr. Percy Brigstocke, a medical missionary before the war in

Bagdad, Damascus, and Gaza, and during the war an officer of the R.A.M.C. in Egypt and France.

Dr. MICHAEL BEVERLEY, to whose tribute to Dr. Brigstocke in the *Eastern Daily Press* we are indebted for these facts, adds the following interesting note:

It will interest many of your readers to learn that the Brigstockes are descendants by marriage of the author of the *Religio Medici*. It is recorded in the preface of the "Posthumous works of the learned Sir Thomas Browne, Kt., M.D., late of Norwich. the public is here presented with manuscripts for which we are obliged to Owen Brigstocke, Esq., grandson by marriage to the author." This is clearly seen on reference to the late Mr. Charles Williams's genealogy of Sir Thomas Browne. "Owen Brigstocke married Anne, the daughter and co-heiress of her grandfather, Sir Thomas Browne, who left his property to his grand-nephew, Owen Brigstocke." My old friend, although ignorant of his connexion with so distinguished an ancestor, told me that he was descended from this Owen Brigstocke, and promised to try to get the pedigree up to date. His long illness and death has prevented this.

Dr. ARTHUR CONNING HARTLEY died on March 5th at age of 54 at Bedford. He was born in Scotland and received his medical education at Edinburgh University, graduating M.B. and C.M. in 1888. During his student days he took honours in most classes, and also entered into the life of the university, especially in the Rifle Company of the Queen's Brigade, in which he obtained many shooting prizes, and also in the work of the students' council. After qualifying he was, for a year, resident medical officer of Chalmers Hospital, Edinburgh; and also house-surgeon at the Royal Maternity and Simpson Memorial Hospital, Edinburgh. In 1891 he obtained the M.D. degree, and in 1893 the F.R.C.S. Edin. Dr. Hartley began practice in Bedford in 1892, where he soon secured the confidence and affection of a large number of patients in the town and county. He was a great believer in post-graduate courses for practitioners, and paid frequent visits, during his holidays, to Edinburgh for this purpose. He was medical examiner and referee for a large number of life assurance companies, and held the post of Admiralty surgeon for Bedford and district. He had served as president of the Bedford Medical Society and chairman of the Beds and Herts Division of the British Medical Association, and in 1912 he was elected president of the South Midland Branch of the British Medical Association. Dr. Hartley took an active share in starting both the Bedford District Nursing Association and the Bedfordshire Rural Nursing Association, and he served on the Executive Committee of the local branch of the Society for the Prevention of Cruelty to Children. He was enthusiastic in support of universal military service, and himself served twenty-eight years in many capacities in the Volunteer and Territorial forces under three Sovereigns. He received King Edward's silver medal for long service in 1909, and the Territorial Decoration in 1917, and was on service as major in the R.A.M.C.(T.), attached to the Head Quarters Staff of the East Anglian Royal Engineers, at the beginning of the war. In November, 1917, he relinquished his commission on account of ill health, and was given the permanent rank of major. In 1896 he was awarded the testimonial of the Royal Humane Society for rescuing a girl from the flooded Ouse. Dr. Hartley was a lifelong advocate of total abstinence, and for this and other reasons he supported all organizations that had for their object the keeping of the youth of both sexes constantly interested and occupied with healthy and interesting work, athletic sports, and literary pursuits. During the war he interested himself greatly to lessen alcoholism, especially amongst women, and in the observance of Sunday as a day of rest for all workers, especially in munitions areas, and in the promotion and completion of the "summer-time" Act. In 1902 Dr. Hartley married Margaret, eldest daughter of the late James Stewart, M.A. Oxon., who survives him, with three daughters and one son.

Dr. THOMAS HAMPTON of Grosmont, Hereford, who died on February 13th, received his medical education at St. Bartholomew's Hospital, took the diplomas of M.R.C.S., L.R.C.P. Lond. in 1895, and graduated M.B. Lond. in 1901.

After serving as house-physician to St. Bartholomew's Hospital and to the Metropolitan Hospital, and as resident medical officer to the Royal Chest Hospital, he settled in practice at Grosmont, where he was highly esteemed and made many friends. He was a member of the Hereford Division of the British Medical Association. Dr. C. Firmin Cuthbert (Gloucester) writes: He has been a staunch friend of mine all these years, and I have had an enormous number of opportunities of judging his sterling worth in practice. He was especially shrewd in the diagnosis of surgical emergencies arising out of medical cases, and never lost time—even at the greatest personal trouble and inconvenience to himself—in getting them operated on without delay. When Hampton made a diagnosis it was never very far off the mark. I have never forgotten the clear and definite clinical picture he drew in a case of sub-diaphragmatic abscess following old ulcer of the stomach. It was operated on with perfect result, and the lady has been in good health ever since. (Such cases were not recognized twenty-one years ago as early and satisfactorily as they are at the present day.)

Dr. WILLIAM MORTON HARMAN of Winchester died on February 12th, aged 77. He was a native of Ireland and received his education at the Carnichael School and Trinity College, Dublin. He graduated M.B. Dub. in 1866 and M.D. in 1887, and took the diploma of F.R.C.S.I. in 1883. He entered the Army Medical Service, and when he retired some twenty-five years ago with the rank of brigade surgeon he commenced practice in Winchester. He was a member of the Winchester Division of the British Medical Association and an ex-president of the Southern Branch, and was consulting physician to the Royal Hants County Hospital, Winchester. He was a member and for some time president of the Old Hampshire Field Club. Dr. John F. Briscoe (Boscombe) writes to give expression to the esteem and regard with which Dr. Harman was regarded in the Southern Branch of the British Medical Association, and especially in the Winchester Division, of which he was a member. He was a regular attendant at the meetings and took an active part in the discussions.

We regret to record the death, from pneumonia after influenza, of Dr. F. W. S. DAVIES, senior anaesthetist to the King Edward VII Hospital, Cardiff, in his 54th year. He was a son of the late Mr. Francis Davies, of Merthyr Tydfil, was a student at Guy's Hospital, and took the diplomas of M.R.C.S. and L.R.C.P. Lond. in 1890. He settled in Cardiff in partnership with the late Dr. Alfred Sheen; he was for a time secretary of the Cardiff Medical Society, and was a member of the Cardiff Naturalists' Society. He had served as medical officer and anaesthetist to the Glamorgan and Monmouthshire Hospital for French Wounded, Berck Plage, and at the time of his death was anaesthetist to the Welsh Metropolitan Military Hospital at Whitchurch, Cardiff.

Dr. IVAR BANG, professor of physiological chemistry in the University of Lund, died recently while at work in his laboratory.

The Services.

THE NAVY ESTIMATES.

THE Navy Estimates for the year 1919-20 have been presented to Parliament. Among the estimates for the effective services the sum of £600,000 is allocated to medical establishments and services. The vote for this purpose provides for the cost of maintaining naval hospitals and other medical establishments at home and abroad; for outlay on medicines and medical stores for the Fleet; for expenditure in connexion with the treatment of officers and men on shore by private practitioners; and for miscellaneous disbursements on medical service. Medicines and medical stores comprise the provisions, stores, instruments, and appliances required for naval hospitals and Royal Marine infirmaries, etc., and for the sick bays of ships. The estimate for educational services includes provision for the expense of instruction at Cambridge University of young officers whose education in the Royal Naval Colleges was curtailed owing to the war.

FLEET SURGEON S. KEAYS, R.N. (retired), has been awarded the Greenwich Hospital Pension of £50 year in the vacancy caused by the death of Deputy Inspector-General George B. Murray, R.N. (retired).

Universities and Colleges.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS.

THE Secretary of the College has issued to the Fellows a circular informing them that a meeting of the Fellows will be held at the College on Thursday, July 3rd, at 2.30 p.m., for the election of two Fellows into the Council in the vacancies occasioned by the retirement in rotation of Sir Berkeley Moynihan and by the death of Mr. L. A. Dunn. Blank forms of the requisite notice from a candidate and of his nomination may be obtained on application to the secretary, and the same must be received by him duly filled up not later than on Monday, March 17th. A voting paper will be sent by post to each Fellow, whose address is registered at the College, on April 1st. Fellows are requested to give notice, without delay, of any change of address.

The following list shows the present composition of the Council; the dates after the names are those of election:

President.—Sir George Henry Makins, G.C.M.G., C.B., (1) 1903, (2) 1911, P. 1917.

Vice-Presidents.—Mr. W. F. Haslam, (1) 1908, (2) 1916; Sir John Bland-Sutton, (1) 1910, (2) 1918.

Other Members of Council.—Sir Anthony A. Bowlby, K.C.M.G., K.C.V.O., C.B., (1) 1904, (2) 1912; Mr. W. Harrison Cripps, (1) 1905 (substitute), (2) 1909, (3) 1911; Mr. Charters J. Symonds, C.B., (1) 1907, (2) 1915; Sir C. A. B. Blance, K.C.M.G., C.B., M.V.O., (1) 1910 (substitute), (2) 1914; Mr. D'Arcy Power, 1912; Sir Berkeley G. A. Moynihan, 1912 (substitute till July, 1919); Mr. James Ernest Lane, 1913; Mr. H. J. Waring, 1913; Mr. W. Thorburn, C.B., 1914; Mr. W. McAdam Eccles, 1914; Mr. C. Ryall, C.B.E., (1) 1914 (substitute), (2) 1915; Mr. Walter G. Spencer, (1) 1915 (substitute), (2) 1918; Mr. Frederick Francis Burghard, C.B., 1915 (substitute till 1921); Sir Herbert F. Waterhouse, 1915; Mr. T. H. Openshaw, C.B., C.M.G., 1916; Mr. Raymond Johnson, O.B.E., 1916; Mr. Vincent Warren Low, C.B., (1) 1916 (substitute), (2) 1917; Mr. James Sherren, 1917; Sir John Lynn-Thomas, K.B.E., 1918; Mr. E. W. Hey Groves, 1918.

On account of the death of Mr. L. A. Dunn, who died after the notices of the election were issued last year, there has been one vacancy on the Council all through the past year.

There are only two vacancies, an unusually small number, on this occasion, as Sir George Makins, being President, does not retire. Sir Berkeley Moynihan's term as substitute expires, whilst the death of Mr. Dunn leaves the second vacancy; he was substitute in 1913 for Mr. Clinton Dent, who also died when a member of Council.

There are now five members representing the provinces, from Birmingham, Manchester, Leeds, Bristol, and Cardiff respectively, the remainder being London surgeons.

UNIVERSITY OF CAMBRIDGE.

THE next examination for the diploma in psychological medicine of the University of Cambridge will be held for Part I in October, 1919, and for Part II in December. The military special neurological hospitals are now recognized as institutions in which the clinical experience required for Part II may be obtained. Further particulars can be obtained on application to Dr. C. S. Myers, F.R.S., Secretary to the Managing Committee for the Diploma, Psychological Laboratory, Cambridge.

Medical News.

THE annual meeting of the Association for Promoting the Training and Supply of Midwives will be held at 10, Hyde Park Gardens, W.2, on March 20th, at 3 o'clock.

THE Municipal Council of Paris has decided in view of existing circumstances to raise the visiting fees of civil state practitioners and medical inspectors.

A NOTICE appeared in the *London Gazette* of February 21st, 1919, intimating that Sir John Lynn-Thomas will in future use the name of Sir John Lynn-Thomas.

THE extension of the Calcutta School of Tropical Medicine, by the building of an institute of hygiene, is being begun, and it is hoped that the whole will be opened in June, 1920.

THE annual meeting of the British Association for the Advancement of Science, which has been interrupted for two years owing to the war, will be held this year at Bournemouth, from September 9th to 13th, under the presidency of Sir Charles Parsons.

A VISCOUNTCY of the United Kingdom has been conferred upon the Right Hon. Lord Finlay, late Lord Chancellor, who, it will be remembered, is a graduate of medicine in the University of Edinburgh and the son of a medical man, the late Dr. William Finlay of Edinburgh.

IT has been arranged that five thousand soldier students of the United States army shall be distributed among the universities of France. Sixteen hundred are now following courses in the various faculties, especially that of medicine, of the University of Bordeaux.

SURGEON VICE-ADMIRAL SIR WILLIAM NORMAN, Director-General Naval Medical Department, and Lieut.-General Sir John Goodwin, Director-General Army Medical Service, have been admitted honorary freemen of the Apothecaries' Society of London, and were afterwards entertained to dinner at the society's hall.

DR. LUIGI BOSSI, the well known professor of gynaecology in the University of Genoa, was shot in his consulting room at Milan on February 1st by the husband of a woman for whom he was in the act of prescribing. The murderer, a Tunisian from Monastir, next shot his wife and afterwards discharged his revolver into his own mouth.

THE English officers and soldiers prisoners of war, lately interned at Leysin for treatment, have now returned home, with the exception of some twenty privates, who remain to complete their cure in the spring. In all some thousand officers and men, tuberculous patients, selected from the German camps at various times by the Swiss medical commissions, have been at Leysin, and, with few exceptions, have returned to this country in good health with pleasant recollections of their stay in French Switzerland.

AT its meeting on February 24th the Executive Committee of the General Medical Council received a letter from the Belgian Medical and Pharmaceutical Society in England, expressing the thanks of the Belgian profession for the welcome and assistance they received in this country. At the same meeting the final step was taken for providing medical reciprocity with this country for members of the College of Physicians and Surgeons of Saskatchewan.

ON February 15th an inter-allied sanitary congress of aviation was opened in the Great Hall of the University of Rome. Great Britain was represented by Dr. Henry Head, Professor Dreyer, Lieut.-Colonel Flack, and Dr. Birley. The object of the congress was to establish international standards by which the aptitude of candidates for the air service will be tested; the criteria of fitness of the flying personnel in the air; the best means for the protection of airmen against great barometric depressions and cold at high altitudes; and hygienic rules for future civilian aviation, and related subjects.

DR. LOCKHART STEPHENS, C.B.E., has received an illuminated address from the medical officers working in the auxiliary hospitals of Hampshire, expressing their regret at his resignation of the post of County Director, British Red Cross Society, which he held since the early days of the war. The fifty-three signatories record their gratification that the post of County Director has been held by a medical man, and conclude by thanking Dr. Stephens for his courtesy and consideration to his colleagues in every part of the county. They attribute much of the great success the society has attained in Hampshire to his untiring efforts.

MENTION was made last week of the opinion expressed by the Society of Medical Officers of Health to the effect that the responsibilities of the Home Office with regard to the sanitary condition of factories, the prevention of industrial diseases, and the work of factory surgeons should be transferred to the Ministry of Health. This opinion is reinforced by a circular letter issued by the Association of Certifying Factory Surgeons. It proposes to amend Section 2 of Section 3 by adding "all or any of the powers and duties of the Secretary of State with respect to control of sanitation in factories and workshops, the appointment of medical men as inspectors of factories, and the appointment and duties of certifying surgeons."

IT is not quite easy to form a definite opinion as to the degree of the shortage of food in Germany, for the refusal of German authorities to accept the condition with regard to merchant ships rather discounted the stories that came from Germany. At a meeting of medical societies in Berlin on December 18th, 1918, Professor Rübner said that the danger was at first under-estimated, and implied that the effects of insufficient food were most marked in children. This agrees with information that comes to us from medical officers who have returned from the occupied territories. It appears to be established that cases of "war oedema," or "hunger oedema," common among prisoners of war in Germany, have also occurred among the civil population. It is a condition without fever, the main features being oedema and asthenia, sometimes preceded by diarrhoea and mucous colitis. The oedema involves principally the lower extremities and can be cured by rest in bed and by giving at least 100 grams of fat a day. It appears that the Allied Governments have now determined to use some of the ships which Germany will be required to hand over, for the supply of food to that country, and, presumably, Austria and Rumania.

THE members of the London Panel Committee entertained their chairman, Dr. H. J. Cardale, at lunch on March 4th, and presented him with a suitably-inscribed silver tray, together with a gift of jewellery to Mrs. Cardale. Sir James Galloway, K.B.E., C.B., who presided, paid fitting tribute to Dr. Cardale, who, he said, had presided over the Committee for four and a half years, during which time he had not missed a single meeting and had attended fully 90 per cent. of the sub-committee meetings, involving, as a later speaker computed, the sacrifice of a hundred half-days. Dr. H. G. Cowie also spoke in high terms of one who was at once a good chairman and a good colleague. In his response, after thanking the members warmly, Dr. Cardale referred with pride to the fact that the London Panel Committee had done something in its brief history to heal the breach which the Insurance Act had occasioned in the medical profession.

THE annual meeting of the Central Council for District Nursing in London was held in the Conference Hall, Local Government Board Offices, Whitehall, S.W., on February 25th. The objects of the Council are to systematize the arrangements for district nursing throughout the county of London, and to promote the adequacy and efficiency of such nursing. It is composed of representatives of the various interests concerned with district nursing. The chairman and vice-chairman are Sir William Collins, M.D., and Sir Thomas Barlow, Bt., M.D., respectively. The chairman of the Executive Committee is Sir Arthur Downes, M.D., senior medical inspector for Poor Law, Local Government Board. In the annual report for 1918 the Council states that its fourth year of work confirms and emphasizes the invaluable service of the voluntary district nursing associations to national health and welfare. With depleted staffs the associations had to face demands of unexampled severity, and during the epidemic of influenza their resources were strained to the utmost. By the employment of nurses and women of varying degrees of training or experience, to assist the fully trained nurses, all that was possible was done to meet the crisis, and the Council pays a tribute to the ability and devoted courage shown by superintendents and nurses alike.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology*, Westrand, London; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

AN OLD MEMBER expresses the hope that there will be a large attendance of members of the Medical Sickness and Accident Society at the annual meeting on March 25th in order that an effort should be made to rescind the resolution passed last year stopping the payment of a bonus to old members attaining the age limit.

TREATMENT OF INFLUENZA AND INFLUENZAL PNEUMONIA.

DR. W. THOMAS (Rhyll, N. Wales) writes: In the JOURNAL of March 1st, p. 246, Dr. Humphrey Davy extols turpentine inunctions in the treatment of pneumonia, and states also that turpentine given internally in capsules does good but that patients often revolt against it. For the last twenty-five or thirty years I have frequently prescribed turpentine in pneumonia, and often with very gratifying results. Given in

the following mixture it seldom disagrees and patients hardly ever revolt against it:

R. Ol. terabinth pur.	...	...	...	...	3ij to 3ss
Pulv. tragac. co.	...	...	...	...	3j
Sp. ammon. arom.	...	...	...	...	3iij
Aq. chloroformi	...	...	...	ad	3viij
Misce.	Sig.: Two tablespoonfuls every four hours.				

Children take it even better than adults, in doses of 2 to 5 minims, and its effects on them is almost always good.

MENSTRUATION AFTER PROLONGED DORMANCY.

DR. JAMES OLIVER (London) writes: Since the outbreak of war in August, 1914, the number of cases showing a disposition to intermittent menstruation or of complete suspension of the menstrual function, without apparent reason and without any evidence of impairment of the health generally of the individual, has been increasing. Now just how long the uterus may under such circumstances maintain a state of dormancy without losing its power to function is a question of great scientific interest and importance, and one which is not touched on in any of our textbooks. I have at present under my care a single lady, aged 28, who has menstruated regularly during the last three months (December, 1918, and January and February of this year), and on each occasion for her wonted number of days (four), but who previously, although in apparent good health, had not menstruated since May, 1916. Here, then, is a case of complete dormancy of the uterus during the prolonged period of thirty months. Yet, when at last the menstrual discharge did make its appearance, it was in amount and colour and character generally as though the menstrual function had never been in abeyance at all.

SHANTUNG CHRISTIAN UNIVERSITY.

DR. R. FLETCHER MOORSHEAD (19, Farnival Street, Holborn, E.C.4) writes to draw attention to an important development in the work of medical education under direct missionary auspices at the university centre of Tsinanfu, N. China. In 1904 there was established in that city what is known as the Shantung Christian University. Two missions were concerned in the enterprise, the American Presbyterian and the British Baptist, and the scheme embraced the teaching of medicine in the Chinese language. In 1910 school premises were opened, and in 1914 a modern hospital of 118 beds was built. Through an arrangement with the China Medical Board of the Rockefeller Foundation, a large body of medical students was transferred from the Union Medical College, Peking, to Tsinanfu in 1916, and new laboratories were added to the school building. That same year the China Medical Missionary Association urged upon missionary societies the policy of concentrating at the Tsinanfu School what they were attempting in Chinese medical education, and the British Advisory Board of Medical Missions strongly endorsed this proposal. Other British and American missions joined in the undertaking, and last year a British Joint Board, representative of four co-operating missionary societies—the B.M.S., L.M.S., S.P.G., and W.M.M.S.—was formed in London with the object of promoting the efficiency of this medical school. The students are drawn from all over China, and beyond the missionary possibilities the various professorships afford a field for research and study of diseases but little known in Europe or America, as also for practice demanding ability and resource. At present there are several vacancies on the teaching staff. Dr. Moorshead, who is honorary secretary of the Joint Board, will supply a report of the medical school and hospital, and give further information to any who may be interested.

COLLOSOLO MANGANESE IN TOOTHACHE.

DR. DOUGLAS A. WOOD, M.B. (late A.M.O., Pinewood), Malvern, Jamaica, writes: In September, 1918, I gave a lady who had a severe toothache due to abscess an injection of colloso manganese (Crookes's); nine hours afterwards the pain had completely ceased, and all signs of inflammation and swelling disappeared in forty-eight hours. A cavity in the tooth had just previously been filled. The injection was given on the third day of pain. The tooth has given no further trouble for the last four months. I find 1 c.cm. injected subcutaneously into the abdominal wall most convenient.

THE following appointments of certifying factory surgeons are vacant: Bridgnorth (Salop), Harwich (Essex), Nantgaredig (Carmarthen).

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THE ETIOLOGY OF INFLUENZA.

FILTRABLE VIRUS AS THE CAUSE, WITH SOME NOTES
ON THE CULTURE OF THE VIRUS BY NORRICH'S
METHOD.

BY

THE LATE MAJOR H. GRAEME GIBSON, R.A.M.C.,

MAJOR F. E. BOWMAN, C.A.M.C.,

AND

CAPTAIN J. I. CONNOR, A.A.M.C.

(Report to the Medical Research Committee.)

THE results of our preliminary experiments were reported in the BRITISH MEDICAL JOURNAL of December 1, 1918, in an article entitled "A Filtrable Virus as the Cause of the Early Stage of the Present Epidemic of Influenza," further work has been carried out which confirms that already reported. We have also attempted to cultivate the "filtrable virus" of influenza and have made experiments in the transmission of the disease to animals by inoculation with the cultures so obtained. These cultural experiments were suggested by one of us (H. G. G.) at an early stage of the work, and later, under the supervision of G. Foster, to which we had access, clearly showed that this part of the work might prove to be a very important part of the investigation.

A full report of the work with which this article deals, with complete data and plates, will appear later. The present report is merely a summary of the work done to date and is framed in as concentrated a form as possible. It is forwarded at this time in order that other workers who may be engaged in the investigation of influenza may have the opportunity of knowing on what lines we have been working and the results that we have obtained.

The animals used by us for experimental purposes have been baboons, *Macacus rhesus* monkeys, rabbits, guinea-pigs, and mice. By the inoculation of sputum, both filtered and unfiltered, from cases of influenza, we have succeeded in producing, in all these animals, lesions that appear similar to those seen in human cases of the disease.

For experiments with blood transmission we used *M. rhesus* monkeys and mice. Although the results obtained in the only two cases in which monkeys were inoculated with blood were not wholly satisfactory, the experiments with mice gave a high percentage of positive results, and it seems to be possible to transmit the virus by means of infected blood to the latter animals. It should be noted that the mice received a very much larger dose per body weight than the monkeys, and this factor, no doubt, played a part in the results obtained.

With cultures it was found to be possible to infect monkeys, rabbits, guinea-pigs, and mice. Owing to the nature of the influenza epidemic in progress, it was thought advisable to attempt any experiments in the transmission of the disease to human volunteers, both on account of the danger involved and owing to the fact that there would have been no guarantee, in the face of so widely spread an epidemic, that the individual to be experimented upon had not already been exposed to infection. A general description of the clinical symptoms and the pathological lesions found *post mortem* is not included and will appear in a later report to the Medical Research Committee, as will also certain details regarding the preparation of material for inoculation.

ANIMAL INOCULATION AND CULTURAL EXPERIMENTS WITH FILTRABLE VIRUS.

The work may be divided into four parts:

- I. Inoculation of animals with sputum from cases of influenza.
- II. Inoculation of animals with blood from cases of influenza.
- III. Passage of the virus from animal to animal.
- IV. Cultural experiments and inoculation of cultures into animals.

I. INOCULATION OF ANIMALS WITH SPUTUM FROM CASES OF INFLUENZA.

Source of Infected Material.

The sputum used was as a rule collected as early as possible in the disease. As uncomplicated cases of

influenza as a rule present a pyrexial period of only a few days' duration, we considered that it would be during those few days that we should have the greatest chance of recovering the virus. As a rule, a certain amount of sputum was obtainable on the second or third day, and this, generally speaking, was frothy, of a greyish-yellow colour, tenacious, often markedly blood-stained, and did not present the nummular appearance seen in cases of bronchitis.

Method of Inoculation and Size of Dose Given.

Emulsions of unfiltered and filtered sputum were inoculated by the same routes and the size of the dose was the same in each case. When dealing with monkeys the method of administration of unfiltered sputum reported by Nicolle and Lebailly was followed. This consisted in injecting 0.25 c.cm. of the emulsion under the conjunctiva of each eye and instilling 0.5 c.cm. of the emulsion up the animal's nose. In one instance we inoculated one monkey by the conjunctival route alone, and gave another monkey 0.5 c.cm. of the same filtrate up its nostrils alone. The former gave a positive result, while the latter proved negative. Rabbits were given 1.2 c.cm. of the filtered sputum either intravenously or subcutaneously; positive results were obtained by both methods. Guinea-pigs and mice were always inoculated subcutaneously whether unfiltered or filtered sputum was used. Guinea-pigs were usually given 1 c.cm., and mice, when used, received 0.25 c.cm. of the unfiltered or filtered sputum.

Results.

In dealing with the results obtained it is convenient to separate the various animals employed into different groups.

Monkeys.—We may divide these into two main groups according to whether the sputum used as the infecting agent was taken from the patient during the first three days of the disease or at a later date. The results are shown in the subjoined table:

GROUP I.—Sputum Collected Early.

Type of Monkey.	Material Used for Inoculation.	Day of Disease on which Sputum was Taken.	Result.
1. <i>M. rhesus</i>	Unfiltered sputum	Third	Positive
2. <i>M. rhesus</i>	Unfiltered sputum	Third	Doubtful
3. <i>M. rhesus</i>	Filtered sputum	Third	Positive
4. <i>M. rhesus</i>	Filtered sputum	Third	Positive
5. <i>M. rhesus</i>	Filtered sputum	Second-third	Positive
6. <i>M. rhesus</i>	Filtered sputum	Third	Positive
7. <i>M. rhesus</i>	Filtered sputum	Third	Negative

This gives 80 per cent. positive results among the *M. rhesus* monkeys inoculated with filtered sputum taken from cases of influenza before the end of the third day of the disease. Out of the two monkeys inoculated with unfiltered sputum taken during the same period, one positive result was obtained, and in the other instance, although the macroscopic examination revealed little, the microscope showed patches of acute inflammation with the typical inflammatory exudate. Thus 85.7 per cent. of all monkeys inoculated with sputum, filtered or otherwise, gave positive results, if the doubtful case is included; if excluded, 71.4 per cent. were positive. Where sputum taken at a later date was inoculated the results obtained were less satisfactory. One monkey was inoculated with unfiltered sputum taken on the sixth day from a case of influenza. A negative result was obtained. A monkey inoculated with the filtered sputum from the same case also showed no signs of disease *post mortem*. A monkey inoculated with filtered sputum from a case of influenza taken on the fifth day gave a positive result.

GROUP II.—Sputum Collected Later.

Type of Monkey.	Material Used for Inoculation.	Day of Disease on which Sputum was Taken.	Result.
1. <i>M. rhesus</i>	Unfiltered sputum	Sixth	Negative
2. <i>M. rhesus</i>	Filtered sputum	Sixth	Negative
3. <i>M. rhesus</i>	Filtered sputum	Fifth	Positive

In this instance two out of three attempts failed, or only 33.3 per cent. were positive. These figures are very small and insufficient to justify any final opinion as to the period in which

it may be impossible to obtain the virus from a case of influenza, but with the number of monkeys which we had it was thought more profitable to concentrate our attention on sputum obtained at an earlier date. The time up to which the virus can be recovered must form the basis for further work on this subject. An attempt to infect a monkey with filtered sputum instilled up its nostrils, without any subconjunctival injection, failed, although subconjunctival injection, without nasal instillation, of the same filtrate, gave a positive result in another monkey.

Controls.—Two monkeys were inoculated with filtered sputum obtained from two cases of acute bronchitis on the third day of the disease. The sputum was prepared and filtered in the same way, and the monkeys were inoculated subconjunctivally and by nasal instillation in each case. They were given the same dose, but were both negative as regards symptoms, and the macroscopic and microscopic examination of their lungs. Another monkey died two days after arrival with a lobar pneumonia associated with McGowan's bacillus of distemper. The *post-mortem* findings were totally different from those seen in our experimental animals. Microscopically there was no great engorgement of capillaries, and no haemorrhagic exudate in the alveoli.

The obtaining or not of a positive result by means of the injection of monkeys with filtrable viruses depends very much more on the dose given than in the case of experimental infections with non-filtrable germs. At present it is not possible to determine the dose that is being given. It is known that while these viruses, as a rule, reproduce the picture of the human disease, as, for instance, in the case of poliomyelitis, the certainty of producing a positive result is not nearly so great as when dealing with the non-filtrable bacteria which are pathogenic for animals. In view of these facts the animal experiments with monkeys appear to us to be quite significant as far as they go.

Rabbits.—Four rabbits were inoculated. Of these, two were inoculated with filtered sputum taken on the third day from a case of influenza. One of these rabbits was given 1 c.cm. of the filtrate intravenously and the other 1 c.cm. of the filtrate subcutaneously. Both inoculations were followed by a positive result. One lung, taken from the rabbit that had been inoculated subcutaneously, was ground up in a mortar with normal saline and the extract filtered. The filtrate was inoculated into a second rabbit. (See passage experiments.) The kidney of the rabbit receiving the intravenous dose was placed in a Noguchi tube with ascites fluid. (See cultural experiments.) One rabbit was inoculated subcutaneously with 2 c.cm. of a filtrate of bronchial pus taken *post mortem* from a man who died from influenza on the twelfth day of the disease. The result was completely negative, and tends to confirm our opinion that it is likely that the virus is not recoverable after the first few days of the disease.

Control.—A rabbit was given 2 c.cm. of a filtered sputum taken on the third day of the disease in a case of acute bronchitis. Result negative.

Guinea-pigs.—Four guinea-pigs were inoculated. Two of these were inoculated with sputum taken on the night of the second day and morning of the third day from a case of influenza. One guinea-pig was given 1 c.cm. of the diluted (1 in 11) but unfiltered sputum, and the other received 1 c.cm. of the same dilution of this sputum, filtered. In each case a positive result was obtained. A guinea-pig inoculated subcutaneously with 1 c.cm. of the filtered bronchial pus mentioned above gave a negative result.

Control.—A guinea-pig inoculated subcutaneously with 1 c.cm. of the filtrate of sputum from a case of acute bronchitis also gave a negative result.

Mice.—Altogether fourteen mice were inoculated with sputum, unfiltered or filtered, from various sources. These may be divided into those inoculated with:

- (a) Unfiltered sputum from cases of influenza.
- (b) Filtered sputum taken during the first three days of the disease in cases of influenza.
- (c) Heated filtered sputum taken during the first three days of the disease in cases of influenza (heated to 71° for half an hour).
- (d) Filtered sputum taken on the sixth day of the disease and later, from influenza cases.
- (e) Filtered sputum taken on the third day of the disease from a case of acute bronchitis.

Under Group (a) 3 mice were inoculated: 1 gave a negative result, 2 died of pneumococcal infection, 1 died of streptococcal infection.

Under Group (b) 5 mice were inoculated: 4 gave positive results, 1 was killed twenty-four hours after inoculation—result negative.

Under Group (c) 2 mice were inoculated: Both gave negative results. (Mice inoculated with the same filtrate unheated all died.)

Under Group (d) 2 mice were inoculated: Both gave negative results.

Under Group (e) *Control*, 1 mouse was inoculated: Result negative.

II. INOCULATION OF ANIMALS WITH BLOOD FROM CASES OF INFLUENZA.

The following are summaries of three experiments with animals were inoculated with blood from cases of influenza:

Experiment 1.

A case of influenza of forty-eight hours' standing was selected; 25 c.cm. of blood was drawn aseptically into a flask containing 2 c.cm. of 10 per cent. sodium citrate solution. 10 c.cm. of the whole blood was diluted with 40 c.cm. of distilled water. This laked blood was then passed through Chamberland J.1 bis filter candle, under a negative pressure of 50 cm. of mercury. Both laked blood and filtrate proved to be sterile with regard to non-filtrable organisms.

Monkey No. 8 was inoculated with 5 c.cm. unfiltered whole blood subcutaneously. It was killed seven days later, and both macroscopically and microscopically gave a completely negative result.

Monkey No. 6 received 0.25 c.cm. of the filtrate subconjunctivally into each eye and 0.5 c.cm. was instilled into each nostril; five days later the animal was moribund, and it was killed on the seventh day. At *post-mortem* examination the lungs appeared quite normal macroscopically, but microscopically some capillary congestion was seen with minute small patches of inflammatory change.

Three mice were inoculated. Mouse W 1 received 0.25 c.cm. of the filtrate subcutaneously. It died the same night, and the lungs were found to be markedly haemorrhagic. Mouse W 2 received 0.25 c.cm. of the filtrate subcutaneously. It was killed on the fourth day, and showed marked haemorrhages in the lungs. Mouse W 3 received 0.25 c.cm. of the filtrate, which had been heated to 55° for one hour. It died on the third day after inoculation, and also showed a marked haemorrhagic condition of the lungs. It might be noted that both mouse W 1 and mouse W 3 were infected with coccidia.

Experiment 2.

Three mice were inoculated subcutaneously with 1 c.cm. blood from influenza cases. One mouse was inoculated with blood from a first-day case of influenza, and the lungs were typically haemorrhagic. Two of the mice were inoculated with blood from second-day cases. One was killed on the sixth day and one on the eighth day, and both were definitely positive.

As controls one mouse was inoculated with 1.25 c.cm. normal human blood and another with 1 c.cm., and both gave entirely negative results.

Experiment 3.

This experiment was undertaken to attempt to obtain information as to the earliest time after inoculation into mice of blood from influenza cases that one may expect to find pathological lesions in the lungs of those animals. Six mice were inoculated each with 1 c.cm. of blood taken from a case of influenza during the first twenty-four hours of the disease. These mice were each given 1 c.cm. of blood subcutaneously and it was intended to kill these animals at varying intervals to eight days after inoculation. However, this intention was frustrated by the fact that five out of the six mice died on the first forty-eight hours after they received the injection.

The results are best shown in tabular form:

No. of Mouse.	Inoculated.	Died.	Appearance of Lungs <i>post mortem</i> .
U 1	Dec. 2, 1918	Same night	Lungs showed nothing abnormal (inoculated peritoneally).
U 2	" "	Next morning	Both lungs showed haemorrhagic-like patches, nothing abnormal seen.
U 3	" "	Same night	Nothing abnormal seen in lungs (inoculated intraperitoneally).
U 4	" "	Next morning	Left lung showed haemorrhagic-like patches.
U 5	" "	Night of Dec. 3	Haemorrhagic-like patches on both lower lobes.
U 6	" "	Killed Dec. 3	Lungs apparently normal.

Of the six lungs examined microscopically, two showed an inflammatory reaction, with congestion in one instance. Of the remainder, three showed acute congestion only and one showed leucocytic infiltration.

III. PASSAGE OF THE VIRUS FROM ANIMAL TO ANIMAL.

Filtered sputum from an early human case of influenza was administered to a group of two monkeys (Nos. 6 and 7), two rabbits (Nos. 1 and 2), and two mice (Nos. 1 and 2), on December 9th, 1918. Of this group, monkey No. 7 received no injection, but the filtered sputum was merely instilled into the nose. This animal remained negative. Mouse Z 2 was given an injection of the filtrate, and, as was to be expected, remained negative. All the other animals were inoculated with the unfiltered filtrate and all gave positive results. Of these animals

rabbit No. 2 was selected to provide material for passage experiments.

Filtered Sputum from Case.

Rabbit No. 2 +:

Rabbit No. 6 +.

Guinea-pig No. 5 +.

Rabbit No. 8 +.

Guinea-pig No. 8 -.

RABBIT NO. 2.

This animal was inoculated subcutaneously with 1 c.cm. of filtrate from sputum on December 9th, 1918. No symptoms of illness were noted after inoculation. It was killed and examined on December 15th.

Post-mortem Findings.

The lower lobes of both lungs showed purplish discoloration and haemorrhagic areas. Microscopically, irregular acute inflammatory changes, with early leucocytic reaction, were noted in sections of the lungs, together with engorgement of the capillaries. Bacteriological examination of the lungs was negative so far as concerns non-filtrable organisms.

The lower lobe of the left lung of this rabbit was now removed, crushed, extracted with normal saline, and the extract passed through a Chamberland F filter and used as the inoculum for further passage experiments, being injected into rabbit No. 6 and guinea-pig No. 5.

RABBIT NO. 6.

On December 15th, 1918, this rabbit was inoculated subcutaneously with 2 c.cm. of filtered lung extract from rabbit No. 2. It was killed and examined on December 23rd.

Post-mortem Findings.

Trachea.—There is found some tracheitis in the lower part of the trachea, which is filled with a frothy, blood-stained fluid, which oozes up from the bronchi.

Pleura.—Some fluid present in each pleural sac.

Lungs.—Retain shape on being placed on the table. The anterior surface of the right lung shows a patch of haemorrhage at the root of the upper lobe. The anterior surface of the left lung presents very little abnormality. The posterior surfaces of both lungs is uniformly of a dark red colour. On section, the lung substance is seen to be reddish-brown in patches, and some frothy, blood-stained fluid drips from the cut surface. Cultures on blood-agar and glucose broth were negative. Lung substance from this animal was emulsified and inoculated into rabbit No. 8 and guinea-pig No. 8.

GUINEA-PIG NO. 5.

This animal was inoculated subcutaneously, on December 5th, 1918, with 2 c.cm. of filtered lung extract from rabbit No. 2. It was killed on December 23rd. At the post-mortem examination both lungs were found to show large dark red patches over both anterior and posterior surfaces.

RABBIT NO. 8.

Received an intravenous injection of 2 c.cm. of lung extract from rabbit No. 6 on December 23rd, 1918, and died about one hour after inoculation.

Post-mortem Examination (December 24th).

Peritoneal cavity clear and glistening. Bowel generally pale and yellowish.

Trachea.—The upper part shows the blood vessels between rings outlined in deep red and an extreme degree of congestion seems to be present between all the cartilaginous rings. Frothy fluid wells up in the trachea from the bronchi.

Pleura.—No evidence of pleuritis on either side. No fluid present.

Lungs.—Both lungs appear much the same. Generally they are pink, with an overlying crimson and deep red coloration which looks haemorrhagic. It seems, in the gross, to be an extreme grade of what has previously been seen in infected rabbits' lungs. On section, the surface drips bloody fluid and shows numerous deep red small haemorrhagic areas on the cut surface.

Thymus.—Enlarged, soft; vessels deep red and engorged. Large numbers of deep purple haemorrhages seen on surface.

Kidneys.—Deep red. Drips blood on section. Capsule strips easily.

Liver.—Deep red. On section, blood drips from surface and lobules appear outlined in deep red.

GUINEA-PIG NO. 8.

Was inoculated subcutaneously with 2 c.cm. of lung extract from rabbit No. 6 on December 23rd, 1918. It was killed on December 31st, and at the post-mortem examination the lungs and other organs appeared to be normal.

REMARKS.

In the above series of experiments a tendency to increase of virulence was noted in passage through rabbits. The lesions found in rabbit No. 2 were of only moderate severity. Those produced in rabbit No. 6 by inoculation of material from rabbit No. 2 were much more severe. The inoculation of lung extract from rabbit No. 6 into

rabbit No. 8 led to the rapid death of the latter, the symptoms and post-mortem appearances being very striking, and suggesting that the inoculum may have contained a toxin of high virulence in addition to the living virus. It should be noted that this animal received an intravenous inoculation, so that any toxin introduced would have been rapidly distributed throughout the organism. It is a remarkable thing, however, that an equivalent amount of the same lung extract proved harmless for guinea-pig No. 8, inoculated the same time as rabbit No. 8. This result may, perhaps, be explained by assuming that this guinea-pig was unusually resistant to infection. It is to be noted, too, that in this instance the injection was subcutaneous, not intravenous.

IV. CULTURAL EXPERIMENTS AND INOCULATION OF CULTURES INTO ANIMALS.

In view of apparently positive results we had obtained in the transmission of influenza to animals by means of filtered materials, blood, sputum, etc., from cases of influenza, it was decided to attempt to obtain cultures from the virus by means of the method used by Noguchi. We had always obtained uniformly negative results in attempting to culture different filtrates, using the ordinary media employed by us in investigating the bacteriology of sputum, post-mortem material, etc., from cases of influenza—that is, serum broth, blood agar, heated blood agar, etc.

Although the work is incomplete, we consider that the results are definite enough to warrant publication.

In November, 1917, Foster reported¹ that in studying the etiology of common colds he had been able to isolate an organism by means of Noguchi's methods, and that he had reproduced the disease in human beings by means of nasal instillation of his culture. His method and technique are described in great detail in his monograph, and we have followed them as closely as was possible in a laboratory in the field.

Preparation of Noguchi Culture Tubes.

At first we had great difficulty in obtaining a supply of ascites fluid, and our earlier experiments were made with human blood serum with negative results. This is not surprising, as it is recognized that blood serum tends to inhibit the growth of filtrable organisms, that of poliomyelitis being an example.

Finally, a case of general polyserositis occurred and a litre of clear amber-coloured ascites fluid was obtained and proved to be sterile.

Special tubes were obtained measuring 1 cm. by 20 cm. These were sterilized by hot air and filled with ascites fluid to within 6 cm. of the top. These tubes were then allowed to stand five days at 37° to eliminate the possibility of contamination.

To obtain sterile rabbit kidney Foster's technique was followed as closely as possible. After removal from the rabbit a small portion of kidney was placed in each tube and allowed to settle to the bottom. Sterile liquid paraffin was poured into each to within 2 cm. of the top. The tube was then plugged again with cotton and a rubber cap put on and they were allowed to stand for one week before being used.

When cultures were made, the material to be cultured was drawn up into a long teated capillary pipette, and then expelled until it had formed a drop on the tip when the pipette was quickly plunged through the paraffin and ascites fluid to the kidney, and the material all expelled to within 3 or 4 cm. of the tip. The pipette was now withdrawn quickly, and the tube plugged again.

Staining Methods.

When it was desired to examine microscopically material from the bottom of the tube, this was obtained with a capillary pipette and the pipette broken off above any oil that might have clung to it. A few drops were then placed on a slide, spread slightly, and allowed to dry in the open air upside down. They were fixed for one hour in pure methyl alcohol, and stained for twenty-four hours in 5 per cent. Giemsa, always having the smear downward to prevent any stain from depositing.

Foster stated that one should see in uninoculated tubes in twenty-four to forty-eight hours only a clear zone of haemolysis above the kidney, and possibly a very faint opalescent zone, but nothing more, and we have confirmed

this. Even the haemolytic zone may be very faint if the animal from which the kidney was removed had been thoroughly exsanguinated.

When we first commenced the cultural work, in December, 1918, we were temporarily somewhat short of animals. This fact led to our obtaining our first culture from the kidney of an infected animal instead of directly from the material from human cases. This came about in the following way:

Wishing to prepare some Noguchi tubes, and having no normal rabbits from which to obtain the tissues, we used the kidney from a rabbit that had been inoculated with a filtrate of influenza sputum, and which had reproduced the characteristic signs in its lungs. The Noguchi tubes thus prepared were placed in the incubator to ensure their sterility. In twenty-four hours a clear pale-red zone had developed above the tissue, and in forty-eight hours it was noticed that a faint cloud was appearing. In seventy-two hours this had increased, and a week later the cloud was about 3 cm. high, and a fine deposit had begun to settle on the bottom of the tube. The cloud showed no tendency to blend with the clear ascites fluid above and was rather more dense immediately above the kidney. The culture was examined by subculturing for the presence of any non-filtrable contamination, and this was found to be absent.

On the thirteenth day a smear was made and stained with 5 per cent. Giemsa for twenty-four hours after fixation in methyl alcohol for one hour. In this smear the following appearances were noted:

Numerous small coccoid bodies, in size varying from about 1μ to 2μ , and generally single but often taking on a diplococcal arrangement and sometimes occurring in small agglomerations. Some showed a rather delicate halo, the significance of which has not been determined. With Giemsa they usually stained a deep purple, but some, which were apparently degenerate, were paler in colour and of a pinkish tinge. On this particular occasion the cocci were Gram-negative, but it has since been shown that very young cultures may be Gram-positive.

The cloudy material was transferred to other Noguchi tubes and the same phenomena occurred. Smears made from the resulting subcultures, stained with Giemsa, showed the same picture as described above.

ANIMAL EXPERIMENTS WITH CULTURES.

Experiment No. 1.

Original cultures were put up on December 15th, 1918. On December 28th, when the cultures were thirteen days old, a mouse was inoculated subcutaneously with 0.25 c.cm. of the original culture. It died six days later. Its lungs showed some haemorrhagic areas.

Post mortem its kidneys were removed with aseptic precautions, and implanted in a Noguchi ascites fluid tube. A subculture was obtained, but not proceeded with further.

A rabbit was also inoculated intravenously with 1 c.cm. of the culture. It was killed seven days later, and, although the lungs of the animal did not show any typical signs of a marked infection, a culture was obtained from the rabbit's kidney.

In addition to these animal inoculations, subcultures of this virus were made on December 28th, and a definite cloud was obtained. Fifteen days later, on January 12th, 1919, these cultures were mixed together, and the following animals were inoculated as shown in the table below.

At the same time as the animals were inoculated the subculture R.2 was inoculated into another Noguchi tube. This culture produced the usual cloud, and the smear showed the presence of the typical coccoid bodies. Thus the third generation by direct subculture has been reached, and at the time of writing it has not yet been taken further.

Besides these experiments we have also succeeded in growing the organism: From a filtered sputum from a case of influenza—this also has been carried through to the second generation from the filtered lung extract of Baboon 12; from the kidney of another infected rabbit.

Controls.—The kidneys from normal rabbits when cultured in Noguchi tubes have failed to produce these organisms of culture, as also the kidney from a monkey inoculated with sputum from a case of simple acute bronchitis.

CONCLUSIONS.

The number of experiments carried out by us is too small to justify the drawing of final conclusions. These experiments were brought to an end by the cessation of the epidemic, and the loss of laboratory attendants consequent on demobilization. We feel, however, that we are in a position to make the following deductions from our work:

I. The apparent immunity of some animals to filter-passing viruses and the occasional difficulty of the transmission of these viruses by means of blood is well known. When this is taken into account the number of positive results obtained by us would seem to be significant.

II. The pathological lesions in what may be called experimental influenza in animals closely resemble those seen in the lungs of men.

III. There is some evidence in favour of the view that the passage of the virus from one animal to another may raise its virulence.

IV. Inoculation of the filtered and unfiltered sputum taken from cases of influenza, especially at an early stage of the disease, has been found to produce lesions in the lungs in a high proportion of inoculated animals. The inoculation of blood may not always produce such striking results.

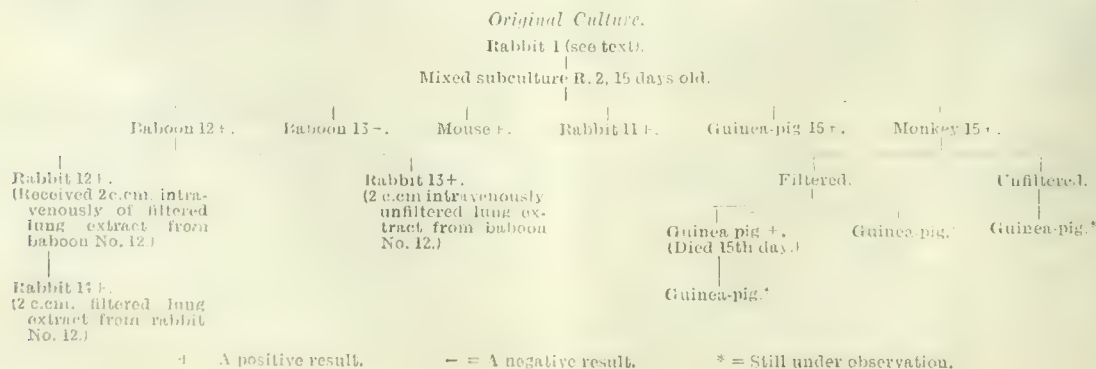
V. A minute micro-organism of a coccoid shape may be grown by Noguchi's cultural methods from: (a) The kidney of infected animals; (b) the filtrates of lung tissue and (c) the filtered sputum from cases of influenza. The cultures have been carried by us to the third generation by direct culture. The cultures when inoculated into animals produce typical "experimental influenza" lesions, and cultures can be recovered again from the animals so inoculated.

VI. In view of these findings we consider that there are very strong grounds for considering that—

- (a) The organism isolated by us is capable of passing through a filter.
- (b) That it is in all probability the cause of influenza as seen to-day.

A similar organism, having the same properties, has also been described by Captain J. A. Wilson, R.A.M.C., working quite independently at No. 20 General Hospital.⁴ Since the publication of his work on this subject we have shown him our preparations, and he considers the organism isolated by us to be the same as his own, in which opinion after examination of his slides, we are in agreement.

We are indebted to the Medical Research Committee for providing the material for the work; to Colonel S. I. Cummins, C.M.G., A.M.S., Adviser in Pathology, British Armies in France, for valuable advice; to the Officer Commanding No. 2 Stationary Hospital and No. 3 Australian General Hospital for allowing us the use of the laboratories attached to their hospitals; and to the Officer Commanding No. 2 Stationary Hospital for the use of his wards.



+

A positive result.

-

= A negative result.

*

= Still under observation.

The help of Private Webster, A.I.F., and Private Hall, R.A.M.C., has been invaluable in the care of the animals, and our thanks are also due to Private Urquhart, A.M.C., our laboratory attendant, for much hard work the preparation of media.

NOTE BY COLONEL S. L. CUMMINS, C.M.G., A.M.S.

Advisor in Pathology, British Armies in France.

While Major H. G. Gibson, R.A.M.C., was actually gaged in preparing the above summary he was himself attacked by the disease in its severest form. He and his colleagues had been working for long hours in the laboratory at cultural and passage experiments with the organism believed to be the "filterable virus" of influenza, and the attack found him overdone and weary from his self-forgetting efforts to solve a problem of pressing military and general importance. Major Gibson had no opportunity of revising or even finishing the summary, which had to be completed from his notes and records.

His death, a grievous loss to medical science and to the Royal Army Medical Corps, was still such an end as a soldier would have chosen. Laborious tasks cheerfully undertaken and dangers resolutely faced are no less glorious in the laboratory than in the trenches.

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SYMPTOMS OF HYPERTHYROIDISM OBSERVED IN EXHAUSTED SOLDIERS.

W. JOHNSON, MAJOR R.A.M.C.(S.R.).

THE close association between emotional states and Graves's disease has long been pointed out. During the course of the present war reference to mild conditions of the disease occurring in soldiers has been fairly frequent, and warrant consideration of the question of the relation between emotion and hyperthyroidism.

In the later part of the year 1917, in a certain forward area, I was able (largely with the help of Captain F. S. Walker, R.A.M.C.T.) to observe and take brief notes on fifty cases in which the condition was clinically demonstrable. These cases were admitted into a centre for psychoneuroses and formed a small percentage of the total admissions.

EMOTIONS AND THE INTERNAL SECRETIONS.

The observations of Cannon have thrown considerable light on the intimate relation existing between emotions and the internal secretions.

Beginning by directing attention to the fact that the well known manifestations of emotional states (for example, pallor, blushing, palpitation, increased cardiac and respiratory action, etc.) are all evidence of sympathetic nervous activity, he proceeded to investigate the question how an emotional upset produces such results. By experiments on animals kept in a state of fear, anxiety, and anger, he was able to demonstrate that suprarenal activity was stimulated; and that an increase in the adrenin content of the blood in the suprarenal vein could be demonstrated. Adrenin acts by direct stimulation of that portion of the sympathetic nervous system which is styled the vertebral sympathetic or the sympathetic proper. It is therefore seen that it is the increased output of adrenin, by producing profound sympathetic activity, which is responsible for the physical manifestations of emotion.

Cannon also points out that the sympathetic activity produced by increased adrenin secretion is all directed towards toning up and sustaining the physical powers for battle—that is, the staying power. Without going into the question of the relative degree to which the various

organs of internal secretion may be involved in the production of this result, it seems certain that, at least, the suprarenal and thyroid glands are two of the most important.

Increased adrenin secretion causes:

1. An increase in the blood sugar;
2. An improvement in the contraction of a fatigued muscle;
3. An increase in the coagulability of the blood;
4. A rise in the blood pressure by constricting the splanchnic area.
5. An increase in force and frequency of the cardiac beat.

In view of the cases about to be described, I add here the generally accepted view of the function of thyroid secretion.

1. It is said to reinforce the action of adrenin.
2. When it is absent or diminished, conditions of mental inactivity—that is, myxoedema and cretinism, result.
3. Where it is present in excess there is a state of mental excitation.

In an individual who is exposed to emotional stress for weeks—sometimes months—without being able to perform the active bodily movements (fighting, running, etc.) which are the natural expression of the emotion, the increased internal secretions which have been produced in his body become, as it were, "a drug on the market." Their physiological circle is uncompleted, and where the emotional state has been excessive and prolonged—as was the case with soldiers under recent military conditions—it seems possible that the accumulation of the excessive products of internal secretion in the body may produce pathological conditions.

It would appear, then, that the various symptoms exhibited by men breaking down in the line have a definite basis. The patient presents those states which are recognized as being produced by sympathetic activity, but he presents them in a riotous way. He has palpitation and tachycardia, disordered activity of the alimentary canal, dilated pupils, protrusion of the eyeballs, sweating and vasomotor disturbance. Added to these are the various subjective complaints which are the results of these states—that is, headache, dizziness, dyspepsia, indigestion, loss of weight, weakness on exertion, and that general unhappy condition described by the patient as "nervousness." In this latter term he includes that feeling of irritability which he is distressed to find he is unable to control.

In a recent paper¹ it was stated that a series of cases, belonging to the group of irritable heart, psychoneuroses, etc., showed a hyper-susceptibility to injections of adrenin. The present paper supplies evidence that in the early days of severe exhaustion, symptoms attributed to hyperthyroidism may be observed. These symptoms were observed within a few hours of the patient leaving the battle line, and it was found that, after two or three weeks' rest, marked amelioration of the condition occurred. Details as to the particular nature of the fighting and the relation to the total number of psychoneuroses admitted during the time cannot be given, and systematic and scientific investigation was impossible under the circumstances.

Clinical Description.

In the first two cases that drew attention to the condition exophthalmos was pronounced and there was definite enlargement of the thyroid gland. In five other cases only was any increase in size of the thyroid gland noted, and in these the enlargement was limited to one or other lobe. The clinical picture of Graves's disease was, in all these cases, complete.

In the remaining forty-three cases it could not be said that the thyroid gland showed any alteration in size, although in many there was a slight fullness about the neck. The degree of exophthalmos, however, sufficed to occasion remark and to call for special observation and examination. It then became apparent that the whole fifty cases formed one clinical group and varied only in the degree with which the symptoms were exhibited.

The ages of the patients varied from 21 to 43 years—the majority being between the ages of 23 and 35. In only one

case was a history obtained of a previous condition of exophthalmos.

In *general appearance* the man was pale, looked ill, and was exhausted. There had usually been a recent loss of weight. The whole surface of the skin was soft and moist, and, in many cases, beaded with perspiration. The extremities, as a rule, were cold and cyanosed.

The *mental state* was usually one of subdued excitement. The patient would be worried and troubled, and possessed very little or no emotional control. Some had struggled to remain at duty and were ashamed at having broken down. A few had been sent to hospital as the result of being blown over by shell explosions, but the majority had broken down under the strain of heavy fighting. A serious result of this state of mental tension is the excessive irritability which these patients show. A very slight disturbance or noise at night is sufficient to waken them, and once awake their mental activity successfully banishes all possibility of sleep. This irregularity in sleep had frequently lasted for weeks.

Prominence of the eyes, more or less marked, was exhibited by all the cases. The facial expression was one of fear and anxiety. In some the exophthalmos was so pronounced that the eyes seemed to be starting from the head, and the patient, when handed a looking-glass, has been astounded at his own appearance. As a rule, however, the amount of sclerotic visible round the corneal margin was small and the result was a definite staring expression. In all cases von Graefe's sign (that is, lagging of the upper eyelids when the eye is made to follow a slow downward movement of the finger) was well marked. Joffrey's sign (that is, absence of wrinkling of the forehead on looking up) was found in those cases in which exophthalmos was most pronounced.

Muscular System.—Ordinary muscular movements were carried out in a quick, excitable manner, and any effort easily produced sweating and a sense of fatigue. As a rule, the inability to sustain ordinary exertion was the most common subjective condition.

Tremor was a constant phenomenon. Occasionally it could be observed—affecting the arms and head—as the patient lay quietly in bed. It could always, however, be brought out by causing the arms to be held horizontally in front of the body. It was then seen to be very fine and rhythmical, affecting more especially the fingers. If the man was made to stand up, a slight general tremulous condition could be observed affecting the whole body.

Reflexes.—The nervous reflexes showed slight alterations. The pupils were usually slightly dilated, and gave a slow diminished reaction to light. The tendon reflexes were always exaggerated, and in a few cases unsustained patellar and ankle clonus were obtained. The pilomotor reflex was more frequently absent than present. The line produced on the skin in performing this test was usually abnormally red and persistent.

The *subjective symptoms* varied widely. Usually the man said he had become "nervous and weak," that he suffered from throbbing headaches, dizziness, palpitation, and precordial pains, more especially on exertion. Digestive discomfort and diarrhoea were complained of more rarely. A few had frequency of micturition. Sleep would be irregular and easily disturbed. Dreams, in which the patient would wake up in a profuse perspiration, were common.

The whole general state of the individual was one of querulousness and anxiety—the attitude of the man who feels that he cannot drive himself one step further.

Case 1.—Pte. C., aged 35, prior to the war had lived all his life in Manchester. He had got thinner during the past six months, and now suffered from headache, perspirations, and general weakness. He broke down in the line. The hands were purplish-blue and showed a fine tremor. The pulse, taken in bed, was 90. There was slight prominence of the eyes, and well defined von Graefe's sign. The right side of the thyroid gland was enlarged.

Case 2.—Pte. T., aged 26, on admission complained of headache, had a general tremulous condition; speech was hesitating. The eyes were very staring and prominent, and von Graefe's sign was marked. The pulse, taken in bed, was 84. The thyroid appeared normal in size.

Case 3.—Pte. A., aged 31, complained of feeling weak and unable to stand shell fire; he had felt ashamed of his condition, and had tried his utmost to keep himself controlled. He was thin, said he easily got short of breath, and that he sweated profusely. The thyroid was apparently normal. The pulse,

taken when up, was 120. The eyes were prominent; von Graefe's sign was slight.

Case 4.—Pte. F., aged 40, was admitted mute, a shell having dropped within twenty yards of him. He had lost weight in the last two years, and now suffered from headache, palpitation, dyspnoea on exertion, and profuse perspiration. The pulse taken when up, was 130. The hands were tremulous, and there was marked prominence of the eyeballs. Von Graefe's sign was present. There was fullness of the thyroid on the right side.

Course.

It was found that after a rest in bed (with full diet, suitable tonics, and occasionally Dover's powder at night) the condition of all patients rapidly improved in ten to fourteen days. At the end of that time the exophthalmos had greatly decreased, and in about half the cases had disappeared altogether, although von Graefe's sign was still slightly positive. The pulse remained rapid and excitable, and the general subjective symptoms always appeared to be within call if the patient experienced an excitement. It is of interest to point out here that Dr. Hale White has described cases of Graves's disease in which not only improvement but apparently complete recovery had occurred. It is, unfortunately, impossible to give the later history of the patients described in this paper. A few I kept for a month were still unfit for duty at the end of that time. The remainder were evacuated to the base after two or three weeks' observation.

Observations on Cases.

1. *Heart*.—The condition described in connexion with "effort syndrome" was frequently found—the cardiac impulse being diffuse and heaving in character. In a few cases a well marked soft systolic murmur was to be heard over the base of the heart when the patient was lying down. It was loudest over the third or fourth left intercostal space close to the sternum. It disappeared on the patient standing up or after two or three days' rest in bed. In the majority of cases the apex beat, on palpation extended $\frac{1}{2}$ in. or more outside the nipple line.

2. *The pulse rate* varied within a wide range in the individual without appreciable cause. The rate which has been 80 or 90 in bed would become 120 to 130 when the patient had walked a little while. Captain Walker took a careful series of pulse rates and found that this condition still persisted at the end of three weeks. The accompanying chart shows this, as also the fact that at first the pulse rate in bed takes a few days to settle down to an average of about 80, and then remains at that figure, while the "up" pulse rate keeps a fairly constant level the whole time.

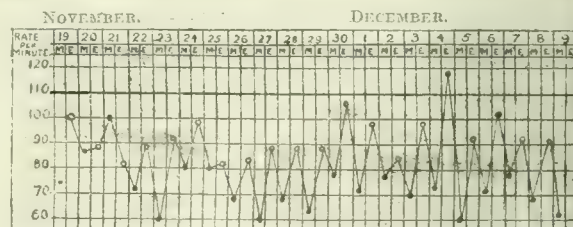


Chart showing morning pulse taken in bed, and evening pulse, taken after the patient had been up a few hours. It illustrates the abnormal excitability of the pulse rate in these patients.

3. *Blood Pressure*.—The observations we carried out showed wide variability of the maximum pressure at the wrist in different patients. It ranged from 126 mm. to 148 mm. of mercury, and did not appear to show any relation whatever to variation of the pulse rate.

4. *Vasomotor State and Sweating*.—Abnormal condition was the rule. On parade I have noticed a patient exhibiting pallor and sweating of the face, associated with a cold, moist, and dusky cyanotic condition of the hands. The same patient put to bed has presented in a short time a flushed face, hands moist and warm and a reddish-purple colour. In both states there appears to be vasomotor stasis, as pressure with the finger easily empties the vessels, and the colour takes an abnormal time to return.

5. *Blood*.—Samples of blood from six patients failed to show the presence of any hyperglycaemia.

6. *Urine*.—In about one-third of the cases the urine was tested and no reduction of Fehling's solution occurred.

7. *Adrenalin Test.*—Two drops of the ordinary adrenalin solution (1 in 1,000) were dropped into the eye in a few cases. No alteration in the size of the pupil or change in the pulse rate was observed. It is hoped to reinvestigate with various strengths of adrenalin this test, which may prove to be a highly important one.

8. *Effect on the Pulse Rate of Deep Pressure on the Eyeball.*—The result was not constant. In one marked case the pulse rate dropped from 130 to 90; in another the pulse died under one's fingers and became quite imperceptible; and in yet another the pressure in the pulse seemed to decrease markedly, and the rate fell from 120 to 100. In the normal person the pulse rate is retarded 6 to 10 beats a minute.

It is not out of place here to mention that, a short time previously to observing these cases, Lieutenant W. R. Stuart, R.A.M.C., and I made similar observations on 200 cases of men who were in need of a rest from the line. In these the heart, pulse, and vasomotor condition were all very similar to what has been mentioned above, and in fact the patients, with the exception of there being no exophthalmos, presented an identical clinical picture.

SUMMARY.

The points which I desire to draw attention to are:

(a) The occurrence of a definite condition of exophthalmos in exhausted soldiers.

(b) The fact that this exophthalmos is present in the early stage of advanced conditions of exhaustion, and that it is only temporary, lasting usually two to three weeks.

(c) When it disappears the patient at once merges into the group of cases labelled "neurasthenia," and is indistinguishable from them.

The following hypothesis therefore appears possible:

1. That a large number of so-called psychoneuroses are cases in which the symptoms are due to a state of disordered internal secretion the result largely of emotional exhaustion, and, to a less degree, of physical exhaustion.

2. That many cases which are later diagnosed irritable heart, D.A.H., soldier's heart, and neurasthenia, are really cases of this class, and that possibly many have passed through a slight state of exophthalmos without its importance being realized.

I would therefore suggest the advisability of classing the whole group under a suitable term.

Exhaustion syndrome would appear to be most applicable, and would possess the great advantage of not suggesting a period of chronic invalidism—such as a soldier associates with D.A.H., neurasthenia, and similar terms.

Having observed some thousands of cases of breakdown in the line—in men otherwise healthy—I have become impressed by the fundamental unity of the group, and by the fact that exhaustion is the active etiological factor.

[I am indebted to Lieut.-Colonel Gordon Holmes for helpful criticism in the arrangement of this paper.]

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NOTE ON HAEMORRHAGIC SPINAL EFFUSIONS.

BY

COLONEL W. P. S. BRANSON, A.M.S.

(By leave of the Director-General Medical Services, British Armies in France.)

I HAVE lately seen two examples of a malady which is new to me, and I wish to put this brief note of them on record, incomplete though it is, in order to elicit information.

The cases occurred in Belgium in January, 1919. Both patients were British private soldiers of different units, and the influenza epidemic was still severe among the troops in the neighbourhood. The patients were treated in No. 48 Casualty Clearing Station at Namur.

General Clinical Features.

The clinical features of the illness were so nearly identical in the two cases (with exceptions which will be noted) that one description will serve for both.

The patient fell ill suddenly with extreme frontal headache and stiffness of the neck, and vomited once or twice but no more. He was practically afebrile throughout, though a twelve-hourly chart showed fitful elevations of temperature to 100° F. or less. His face had the peculiar subcyanotic tint so characteristic of the present epidemic of influenza. Mentally he was clear and exhibited none of the lethargy and torpor to be expected in a victim of cerebro spinal meningitis having the same degree of headache. The pulse rate was normal and no complaint was made of generalized aching. Kernig's sign was not conclusively present.

Lumbar puncture (in one instance on the second day of the disease, in the other on the fourth) produced 40 to 50 c.cm. of a highly bloody fluid, under considerable pressure. A test tube full of this fluid left standing for twenty-four hours showed a clear supernatant fluid and a deposit of blood cells in about equal proportions. Repetition of the puncture on the two succeeding days produced 30 to 40 c.cm. of a similar fluid, but visibly less bloody. By this time in each case amelioration of symptoms was so far advanced that nothing further was done. One patient was evacuated to the base, convalescent, the other had reached the seventeenth day of his illness when I last heard of him and bade fair to make a good recovery, though both of them were slow in getting rid of their headaches.

Examination of Spinal Fluids.

The examination of the spinal fluids was carried out under great difficulties (his laboratory being some twenty miles away) by Captain G. A. Wyon, R.A.M.C., of the 19th Mobile Laboratory, to whom I am indebted for the following particulars:

1. No organisms could be found in films (five examinations).
2. Each spinal fluid was cultivated twice and all the cultures remained sterile.
3. The cytology of the fluid is uncertain. In one case no count was made, but Captain Wyon's clear impression is that polymorphonuclear leucocytes predominated, and were in excess relatively to the red blood cells. In the other case a single relative count of leucocytes gave the following result: Polymorphonuclears 96 per cent., lymphocytes 3 per cent., large mononuclears 1 per cent.

Differences between the Cases.

I spoke above of items not common to both patients.

(a) The first patient was taken ill at the conclusion of a three days' journey in a lorry, and a note from his regimental medical officer said that a number of men who had made the same journey had been seized with headache and vomiting and themselves attributed their symptoms to gassing by petrol fumes while in the lorry. We, however, in the casualty clearing station saw no more of these patients, so that it is to be presumed that the symptoms were fugitive.

(b) The second patient had made no such journey, and he also differed from the other in two subordinate respects: (1) He had a persistent cough, with expectoration; (2) the stiffness of his neck was associated with a band of bilateral hyperaesthesia (which he plotted out spontaneously in the most certain fashion). This band was about 2 inches broad, and ran downward from the cervical spine along the upper border of the trapezius to the top of the shoulder on each side.

Commentary.

I do not know what this ailment was, but it pretty certainly was not cerebro-spinal meningitis, of which disease I saw a few sporadic cases at about this time. At a guess I should say it was a variety of influenza, mainly because the complexion of its victims was that of the influenzal, and I have not observed that peculiar bluish flush in any other malady.

I saw the same flush in another anomalous patient during this period. His symptoms were high fever, lethargy, and right hemiparesis. His cerebro-spinal fluid was perfectly clear. He recovered in about three weeks, sufficiently, at least, to be sent to the base convalescent. I called his ailment "lethargic encephalitis" on the score

of what I had read and for lack of a better name, but it seems to me likely enough that it also was a variant of the influenzal picture.

I shall be grateful to any reader who can help me to more knowledge of the above-described variety of haemorrhachis.

SOME BACTERIOLOGICAL FINDINGS IN EPIDEMIC INFLUENZA.

BY

CAPTAIN WILLIAM T. MUNRO, R.A.M.C.

ACTING on instructions, I visited the Duke of York's Training School, Brentwood, on October 14th, Hare Hall Camp, Romford, on October 16th, and Purfleet Military Hospital on October 22nd. Serious outbreaks of influenza were reported from these three centres.

At the Duke of York's Training School, Hare Hall Camp, Romford, and Purfleet Military Hospital, it was decided to take nasopharyngeal swabs. Keeping in mind that two cases died of cerebro-spinal fever during the July epidemic of 1918 (cases which had been missed among the large numbers suffering from influenza), it was thought advisable to inoculate serum tryptic agar plates as well as plates of blood-smear agar; thereby it was hoped that the possibility of any cases being meningococcal carriers might be eliminated; by blood-smear agar it was hoped to grow Pfeiffer's bacillus, should it be present.

At Brentwood fifty boys suffering from influenza were examined in this way. A striking feature clinically was the injection of the tonsils and the swollen uvula. Most of the boys had high temperatures, and were decidedly ill. At the time of examination there were none with serious pulmonary complications. West's swab was always used, so as to avoid contamination with the *Streptococcus salivarius*. It was found that a streptococcus was present in 40 out of 50 swabs plated; it was strongly haemolytic, similar to the *Streptococcus anginosus*. The pneumococcus was present in several cases; *Micrococcus catarrhalis* was also present. In two cases only was the influenza bacillus found, and no plate showed a meningococcus.

The cases at Hare Hall Camp, Romford, did not seem so severe. Fifty men were swabbed; streptococci and staphylococci were the predominating organisms. Two cases showed meningococcal-like colonies, but these did not agglutinate with any of Gordon's four types of serums. The bacillus of Pfeiffer was not found.

In Purfleet Military Hospital were several cases which had gone on to pneumonia or bronchopneumonia; the chief unit from which the cases came was a Canadian Railway Troop Dépôt. There were about 3,000 Canadian troops in this area, some from recent drafts, and many men who had never been ill in their lives. Swabs were taken from fifty of these men; thirty-one showed a streptococcus to be the predominating organism. None of these men complained of illness, though some showed injected fauces. The meningococcus was not found, and no plate showed the influenza bacillus. Unfortunately Matthew's medium was unknown to me at the time these swabs were taken, and the later medium used by me for the isolation of Pfeiffer's bacillus had not been prepared.

Examination of the Sputa of Cases of Influenza, and Pulmonary Complications following Influenza.

Over 150 sputa were examined by film and by culture. For slide examination a small greenish-yellow portion of the sputum was spread in a thin film, stained by Gram and counter-stained by a solution of ordinary carbol-fuchsin diluted 1 in 10 with sterile water. This was allowed to act for ten minutes. In about half the number of sputa examined short Gram-negative bacilli were found on the slide.

In some specimens these occurred in enormous numbers, but there was never wanting plenty of Gram-positive diplococci and streptococci.

Gram-negative diplococci were also seen and none of these proved to be a meningococcus. They were probably *Micrococcus catarrhalis* or members of that group. Staphylococci were seen fairly commonly.

Cultures.—In the first series of specimens the sputum was spread on blood-smear agar, similar to that used for the nasopharyngeal swabs. In only one instance was Pfeiffer's bacillus grown, and this from a case not called influenza but a purulent bronchitis. In all cases of pulmonary complications pneumococci and streptococci were grown in culture from the sputa. It occurred to me that an agar medium neutral in reaction to phenolphthalein and containing blood or a solution of haemoglobin would be better for the growth and isolation of Pfeiffer's bacillus. Human haemoglobin was used. When patients were sent for the Wassermann test blood was taken under strict aseptic conditions, the serum kept for the Wassermann test, the

haemoglobin was dissolved out and added to 3 per cent. tryptic agar. This medium proved much more suitable for all purposes. It was fairly clear and if a small greenish-yellow part was picked out from the sputum it was common to find the influenza bacillus at the end of twenty-four hours. Its growth was slow. It appeared as small dew-like colonies not attaining to any size until about the third day. It was not always easy to grow these on subcultures, but it was done in slope culture of the same medium. About fifty sputa were cultured on haemoglobin tryptic agar and the influenza bacillus was found in forty of these plates. It is worthy of note that blood smear agar was used in the first 100 sputa examined and Pfeiffer's bacillus was only isolated on a very few occasions. I had used, for the most part, my own blood to smear the agar, and I suffered from an attack of "influenza" in July; this may have had something to do with the want of success.

Summary.

The principal organisms found in the material examined were pneumococcus, streptococcus, the influenza bacillus, staphylococcus, and *Micrococcus catarrhalis*. At the time of the investigation the laboratory did not hold a licence, so that it was not possible to test the pathogenicity of any organism. It is suggested that the influenza bacillus was probably present in all cases at the beginning of the illness and that the pneumococcus and the streptococcus were mainly responsible for the pulmonary complications. It is seen that the influenza bacillus could be recovered in 80 per cent. of the cases on a medium containing human haemoglobin. The influenza bacillus requires some determination, and it is pointed out here that what is taken as the influenza bacillus is a short Gram-negative bacillus growing on a blood medium and showing in twenty-four hours small pin-point colonies. These will not grow in subculture on ordinary agar. Further, the influenza bacillus is difficult to stain. It does not show up well stained by Gram and counter-stained by neutral red. It is better to use a dilution of 1 in 10 of ordinary carbol-fuchsin, and counter-stain for ten minutes.

A further report dealing with the results of vaccine therapy in these cases will be submitted by the physicians of the Military Hospital. The complete examination of the results obtained by vaccines prepared in the district laboratory will require considerable time.

I wish to record my indebtedness to my colleague Dr. Hugh Vallance, who has all along been associated with me in the work of this laboratory.

A TYPHOID CARRIER FOR THIRTY-SEVEN YEARS.

By S. T. CHAMPTALOU, M.B., B.Sc.(P.H.),

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OTAGO UNIVERSITY, DUNEDIN, N.Z.

WHILE investigating a case of typhoid fever which occurred at S—, in the Central Otago district (N.Z.), Inspector Armour, of the Government Health Department, suspected A. M., the subject of this note, to be a carrier, and requested him to go into hospital at Dunedin for examination. The facts are as follows:

A. M., male, aged 72, single, had worked at sheep-shearing, bush-felling, and as a general farm servant in and about the same district for nearly forty years. He had never been engaged in cooking or otherwise handling food at the farms or stations at which he worked. On being interviewed in Dunedin, the old man was rather proud of the fact that he had escaped infection in several outbreaks of typhoid fever to which many of his mates had fallen victims. He stated that he had had typhoid fever in 1881, when he was admitted to the Clyde Hospital suffering from fever, severe headache, and painful diarrhoea. He suffered a relapse, and was in hospital thirty-seven weeks; from his account he was evidently seriously ill. At the same time there were several cases of typhoid fever in the district, five of which were admitted to the same hospital as A. M., and two were fatal. The medical practitioner who was in charge of the hospital is long since dead; but I have elicited these facts from the old man in support of his contention that the illness from which he suffered in 1881 was typhoid fever. He gave the following subsequent history.

1. Shortly after having recovered from his attack of typhoid fever he was one of a party of shearers at P— station where typhoid fever broke out, and there were 13 or 14 cases amongst his mates, of whom several died.

2. Two or three years later he was shearing at W—, and three of his fellow shearers contracted typhoid.

3. Three years later he was shearing at A—; the cook and several of the shearers contracted typhoid.

4. Two years ago he was shearing at L— when a fellow shearer contracted typhoid. (The diagnosis in this case I know to have been confirmed.)

5. His last association with the disease was at S— in the autumn of 1918, when he was engaged as a general farm servant. A rabbit, E., came to the farm shortly afterwards, occupied the same room, and shared his meals with A. M. H. was admitted to Dunedin Hospital suffering from typhoid fever in June, 1918 (agglutination and faeces positive), and it was while investigating this case that the inspector came across the carrier.

At the time of my interview A. M. seemed a hale, sturdy old man, and, but for his attack of typhoid fever in 1881, he had had no serious illness, and had always been remarkably well. No history of gall stones or gastrointestinal attacks could be elicited.

Laboratory Note.

Blood, urine, and faeces were first submitted for examination on July 9th, 1918, and subsequently at intervals, with the following results:

Agglutination Reactions (Dreyer's technique).—The patient's serum agglutinated his own bacillus up to 1 in 300, and agglutinated the standard (Oxford) strain of *B. typhosus* up to 1 in 250. The reactions were repeated on two occasions at intervals with similar results.

Urine.—No typhoid bacilli were found at any time by direct plating, plating after preliminary incubation, or by enrichment methods.

Faeces.—Very numerous typhoid colonies on MacConkey plates, and in almost pure culture, were found on July 9th, 1918. There were numerous typhoid colonies on July 18th; a few on August 2nd, 15th, and 29th. The colonies were numerous again on September 5th; there were a few on September 25th, and on October 24th they were once more numerous. Enrichment methods were unnecessary in the case of the faeces, as the bacilli were easily recovered by direct plating from preliminary emulsions. The technique followed was that outlined by Henderson Smith (BRITISH MEDICAL JOURNAL, July 3rd, 1915). The isolated bacilli agglutinated to titre with the typhoid serum of the Lister Institute.

A. M. was kept under observation in the isolation hospital for four months, during which time many of the recognized methods of treatment were tried but without avail, as the faeces examinations indicate. He was meanwhile trained in habits of cleanliness, and, as he now fully realized his potentialities for danger to his fellows, he was discharged and instructed to report to the Public Health Department from time to time.

The Milroy Lectures

ON

HALF A CENTURY OF SMALL-POX AND VACCINATION.

DELIVERED BEFORE THE ROYAL COLLEGE OF
PHYSICIANS OF LONDON.

BY

JOHN C. McVAIL, M.D., LL.D.

VACCINATION AS IT WAS AND IS.

The Law.

NEITHER infantile nor re-vaccination has ever been compulsory on the population of the United Kingdom. The utmost penalty has been the infliction of fines, and non-payment of a fine has sometimes involved imprisonment, but the law has never allowed a child to be taken out of its mother's arms and forcibly vaccinated.

Various changes have taken place in law, practice, and doctrine since 1870. Vaccination was made obligatory in England in 1853. Boards of guardians were empowered to appoint vaccination officers in 1867; appointment of these officers was made compulsory in 1871. In 1898 domiciliary vaccination was to a great extent substituted for vaccination at public stations, and systematic asepticism in the operation was insisted on and arranged for. At the same time exemption on the ground of conscientious objection was enacted. The procedure for obtaining exemption was made easier in 1907. Public vaccinators and vaccination officers are under the Poor Law authorities, not under the health authorities, as obviously they

ought to be. The age for obligatory vaccination has been raised from three months to six months, as in Scotland.

In Scotland the obligatory law was passed in 1863, but the duties of public vaccinators were and are confined to defaulters who have omitted to secure the vaccination of their offspring before the age of 6 months. For the rest, vaccination is the concern of the private medical attendant and the child's parents, excepting for certain public vaccination stations where medical students are educated. Exemption since 1907 is obtainable even more easily than under the English Act.

Revaccination is entirely voluntary in both countries.

Decline in Practice.

Systematic practice of infantile vaccination has greatly diminished in recent years. At the same time that small-pox has become a much less prevalent and much less fatal disease than before, exemption from vaccination has been made very easily obtainable, and the Jennerian prophylaxis has largely fallen into disuse. The English Local Government Board's annual tabulation of vaccination returns has been discontinued during the war, so that the most recent statistics relate to the year 1912. At that time about one-half of the infants born and more than one-half of those surviving to the vaccination age were being vaccinated. No doubt vaccinations, in the absence of small-pox and under the easy system of exemption, have considerably diminished since then.

In Scotland in 1916 (the latest year for which figures are available) amongst the children surviving at six months—the statutory age for infantile vaccination—the percentage of unvaccinated was 41. This is a little less than the percentages for the two previous years, but much higher than the rate—6 per cent.—of the years before the Act of 1907, which facilitated the obtaining of exemption certificates.

The Doctrine.

The doctrine of vaccination has mainly altered in respect of, first, the need for revaccination, and, secondly, the value of recent vaccination when small-pox tends to become prevalent. Jenner's one serious error—that vaccination gave lifelong protection—resulted in this country being behind Germany in realizing the need for revaccination. But Marson, giving his experiences of the London Small-pox Hospital, says, "I have always recommended revaccination after puberty," especially for persons indifferently or doubtfully vaccinated in infancy, or without any cicatrix remaining. Dr. Seaton declared in 1875: "The revaccination of persons as they reach about 15 years of age should be as systematically done as is the vaccination of young infants," and he states that he laid down this rule some years previously. Opinion regarding the proper period of life for systematic revaccination has tended to change in the direction of an earlier repetition of the operation, adolescence in the original view having now been replaced by the age of 9 or 10 years, especially in presence of small-pox. Also, although it is generally recognized that, because it is done at an age when the process of bodily growth and development has been largely accomplished, revaccination efficiently performed yields a more prolonged protection than primary vaccination, yet when there is appreciable risk of small-pox infection the operation should again be repeated, especially if many years have passed. In the Local Government Board's Report for 1887 it is stated that "whether the protective influence of this second vaccination becomes impaired, and if so, under what conditions, is not known."

Germany.

This development of view as to the desirability under such circumstances of renewed revaccination will probably be strengthened when we become more acquainted with the facts as to small-pox in Germany during the war. It has always been known that under obligatory revaccination in that country such trivial amount of small-pox as occasionally did occur was to be found mainly on the frontiers, where Germany adjoins very incompletely vaccinated countries like Russia. Two or three million Russian prisoners interned in various parts of Germany have permeated that land to an unparalleled degree, and the risks of infection, which were formerly almost confined to the borders, have accordingly been extended right into the heart of the country. In 1917 in Berlin about 4,000

cases of small pox occurred, with over 400 deaths. The strong vaccinal defences of modern Germany have, in short, been subject to more strenuous attack than ever before, and the protection which had been sufficient against occasional trivial invasions has been less able to resist the more prolonged and heavier onslaught. A German whose personal immunity had not been absolute was further protected by the generally high standard of immunity of the population, so that his chances of direct infection were few and rare. At the same time, it is reasonable to think that the privations of Germany in respect of the ordinary necessities of life—food and clothing and heating—taken together with the domestic and public anxieties of the war owing to deaths and disablements, have made the population to some degree more vulnerable to infectious disease. In Germany it should be noted that the male population fit for military service has, broadly speaking, the protection of a second revaccination on entering the army, while females and all males who for one reason or another were not drafted into the army have had only a single revaccination. It will probably be found that mainly in this section of the population has small-pox reasserted itself during the war.

In Germany, or at least in its civil population, forcible vaccination or revaccination has not been the law.³ The highest penalty is by fine or by imprisonment not exceeding three days, and, as ought to be the case in this country, vaccination and revaccination are on the same legislative footing. The German population, however, has been so drilled in ways of obedience that defiance of the law has been comparatively rare.

Calf Lymph.

In the practice of vaccination a most important change has taken place through the substitution of calf lymph for humanized lymph. The change resulted mainly from a desire to allay parental anxiety regarding the possibilities of conveyance of human disease by means of humanized lymph. This anxiety hardly existed in the medical profession, who freely vaccinated their own children from the arms of infants, the risk being so remote as to be considered practically negligible. The great virtue of calf lymph under present conditions is the facility with which, notwithstanding the time required for glycerination or other treatment, the supply can be multiplied at relatively short notice to meet the most extensive epidemic. It has been provided by the Local Government Board to all public vaccinators since the beginning of 1899. In 1871-73 and up to the period when calf lymph came into general use, it was extraordinarily difficult to obtain material sufficient for emergency revaccination called for owing to the existence of small-pox. Everything depended on the number of infants presented weekly for vaccination, and they might very readily be utterly insufficient for the purpose. This was so in Kilmarnock in 1873. In these circumstances many persons requiring and desiring to be vaccinated might remain unprotected, and there would even be temptation to resort to lymph taken from the vesicles of revaccination, a source which has never been regarded as satisfactory. In addition to the facility with which the supply of calf lymph can be increased it is now regularly kept in cold storage to the extent of half a million tubes by the Local Government Board. In the act of vaccination aseptic precautions are used to a very much greater extent than half a century ago.

Dosage.

One difference between practice in England and in Scotland is that in the former country the Local Government Board's standard of four vesicles with a total area of not less than half an inch is much more generally observed than in Scotland, excepting at the few vaccination stations. Certain statistics submitted to the Royal Commission on Vaccination rather seemed to indicate that the duration of protection conferred by infantile vaccination in Scotland was less than in England, and the explanation is not far to seek.

As regards the duration of protection afforded by different doses—at one time a matter on which bacteriologists tended to be sceptical—it is worth noting that all modern work on other vaccines has shown the primary importance of fixing a dose of bacilli at a standard rate, and that differences in the bacterial dose of the "vaccine" are every

day accepted without question as explaining the whole difference between protection by and complete failure of inoculations. Marson's famous statistics of the London Small-pox Hospital, supported as they were by Russell's striking diagram of Glasgow Hospital results, are consistent with modern bacteriology.

Vaccinal Condition of Population.

Besides what remains of systematic vaccination the present position with regard to the practice is, broadly speaking, that infantile vaccination and revaccination are resorted to in presence of small-pox.

Diminution in the vaccination of infants results in there being now a larger proportion of young adults who have not the protection against severity which vaccination in infancy would undoubtedly have given them, and have not the partial protection against attack which, in those well vaccinated in infancy, undoubtedly is maintained to a substantial degree in younger adult life. On the other hand, it has to be remembered that, in some places at least, the occurrence or threatening of small-pox has led to an amount of revaccination at different ages which in the mass is probably considerable, and that demobilization of the forces will add materially to the proportion of persons who have received protection in adult life. On the whole, however, one must regard the population as distinctly less protected than twenty years ago. Even at that time infantile vaccination was not, in the absence of revaccination, in any way a shield such as in normal times completely protected Germany. But it did interpose a very substantial—and in former years an indispensable—check on the spread of small-pox. If from this year onwards no vaccination whatever were done in this country, we should for many years have the benefit of protection hitherto obtained.

INFANTILE VACCINATION AND THE SPREAD OF SMALL-POX.

But in respect of infantile vaccination it is necessary to take notice of a contention which has been advanced as to the relationship of the practice to the spread of small-pox. The view in question was promulgated in 1893 by Dr. J. H. C. Dalton of Cambridge and has been adopted and developed by Dr. Killick Millard, Medical Officer of Health of Leicester,⁴ with all his characteristic energy and ability. The subtitle of Dr. Millard's book is "An Appeal for Reconsideration," and no one can have a better claim than he to make such an appeal. He has absolute faith in the protective power of recent vaccination against small-pox in the individual and has demonstrated his faith unequivocally in his work at Leicester. He took his own vaccinated children into the small-pox hospital, and had them photographed beside cases of the disease, using the photographs afterwards for persuasion of contacts to accept vaccination.

Briefly, he urges that to the public at large infantile vaccination is on balance disadvantageous because it often makes subsequent small-pox so mild as to be unrecognizable, with consequent spread of infection by missed cases. Therefore, he holds, the present law of so-called compulsory vaccination should be repealed. A subordinate reason submitted for this proposal is that repeal would diminish the opposition with which the offer of emergency vaccination in presence of small-pox is often met. That consideration is sound for what it is worth, but its value must be a matter of individual opinion, and need not be discussed here.

On the main contention, however, I desire to offer some observations. Though the Vaccination Acts are called compulsory they are so only in name, especially in recent years, and Dr. Millard agrees on that point. But legislation is a political question, and if infantile vaccination is a public danger there is no logic in confining its discouragement to the omission of legislative pressure. The discouragement should be active and definite. This would mean advice to a parent to refrain from vaccinating his child, the adviser hoping that if unfortunately the child subsequently took small-pox it should have so severe an attack as to make the disease easily recognizable, with a view to its immediate isolation and the protection of the public. A considerable proportion of such attacks would of course be fatal. The proposition raises a question in medical ethics. It would surely be wrong to refrain from

protecting one individual against severe or fatal small-pox in order that other individuals, adults or children, should escape the result of omission, by themselves or by their parents, to secure a safety which is open to all. But apart from ethics the view seems to me unsound that infantile vaccination is, on balance, disadvantageous in relation to the prevalence of and mortality from small-pox.

It may at once be agreed that infantile vaccination, by mitigating small-pox where it has failed to prevent it entirely, makes the disease much milder, with the result that on any large basis of fact more cases will be missed than if the attacks had been of ordinary severity. Indeed, modification as well as prevention of small-pox is one of the virtues of vaccination. But there is another side to the shield. It is true that an eruption of, say, ten pustules will more readily be overlooked than an eruption of 100 or 1,000 pustules. But the quantity of inherent infectivity is correspondingly less. Other things being equal, it is only one-tenth in the one case and one-hundredth in the other. The amount of buccal eruption, so far as it is important, corresponds broadly to the amount of cutaneous eruption. When a medical officer reports that certain cases of small-pox were so mild as to be unrecognized, he naturally thinks of this as increasing his difficulties, and is apt to forget the considerations on the other side. Severe small-pox is not by any means always recognized in its early stages, and a single "missed" case, say, in a vagrant, among a score or a hundred discovered cases may make all the difference in the spread of infection. Also, failure to notify small-pox has not always been due to non-recognition of the disease. In Dr. Spencer Low's report on the Dewsbury epidemic of 1904, he says that "non-notification of cases" in many instances meant "concealment of cases." It is clear that a mild concealed case would be much less likely to spread infection than a severe, unvaccinated concealed case.

Experiences of Medical Officers.

The epidemic of 1892-95, and in the provinces the epidemic of 1902-5, have been so mild in character that, independently of vaccination, the difficulty of diagnosis has been naturally much greater than ever before. Consequently references to missed cases bulk largely in the reports of medical officers, and Dr. Millard is able to cite numerous instances. But easy diagnosis can be obtained at too great a cost, and a locality is much better with its mild cases, whether naturally or artificially mild, and its more difficult diagnosis, than it would be with severe cases easily diagnosed but with a high fatality rate and producing a large amount of infectious material, however carefully guarded. If a missed case is naturally mild it will tend to cause the disease in modified form; if it is artificially mild it will tend to revert to the natural type of epidemic. If that type itself be mild the difficulty of diagnosis will correspond. If, on the other hand, it be severe, then the desired facility of diagnosis will be obtained, but at the cost possibly of a heavy attack with disfigurement, or even death, as a frequent result.

Bristol.—Sometimes a mild case does cause a considerable spread of infection. Dr. Davies records that in Bristol, in January, 1912, an "ambulant" case set going a series of small outbreaks which extended over eight months—4 cases in January, 18 in February, 8 in March, 12 in April, 7 in May, 15 in June, 7 in July, and 4 in August. As no death from small-pox occurred in Bristol during 1912 the type of disease throughout must have been mild, independently of vaccination. In 1903, however, 15 introductions by sea and land were checked at 46 cases, and in his report for 1905 Dr. Davies records how one mild case wandered about with the eruption well out, visiting a public-house where there were many workmen. Great efforts were made, with the aid of the Local Government Board, to watch for secondary cases, but only one certain and one doubtful case occurred. The disease had been since 1903 "of an extremely mild or minimal type which is possibly not highly infectious except to intimate, or bed-contacts," and which even in the unvaccinated may give merely a nominal attack. It appeared to have been imported from North America, and if the type remained unchanged, would be of as little importance as chicken-pox.

Derby and Halifax.—Dr. Howarth, in Derby, had in 1903-4 a total of 255 cases with 5 deaths, and states that

the mildness of type resulted in a number of cases being overlooked, and in addition instances of delayed notification were frequent. He goes on to remark that such cases add to the difficulties of repressing an epidemic, "but I must confess to some surprise at the fewness of cases which resulted from these causes," and he suggests that dissemination of infection may be less easy because of the vesicles forming hard cornified bodies, "and in addition the amount of infective material available for dispersion is probably directly proportionate to the amount of rash" (p. 29 of Report). Dr. Neech of Halifax, writing regarding a discrete case in his report of 1903, notes that the first batch of cases infected from it occurred amongst persons in the same workshop and in the same lodging-house. "No case at this time occurred among the general public, although he was moving freely among them."*

Dundee.—There was considerable prevalence of small-pox in Scotland in the years 1901-4 inclusive, in large centres of population, especially in the industrial belt which lies across the Lowlands from south-west to north-east. Within this belt the city of Dundee is a manufacturing and port town, with at that time about 165,000 inhabitants, with a good deal of poverty and slum population, and with thousands of married women working in the great jute mills, and leaving their children at home.

In Dundee in 1902 there were 57 notified cases of small-pox, with 4 deaths. In the course of his report Dr. Templeman, the medical officer, writes as follows:

In a considerable proportion of the cases the source of infection could not be traced. In a few it was ascertained that the person had been in contact with some one who was believed to have had a mild attack of chicken-pox, and in others to have suffered from influenza. I think there can be no doubt that during the whole course of the outbreak mild cases of small-pox were occurring which were not notified, either from the person not having sought medical advice, or from the case being diagnosed as influenza from the fact that no rash was discovered, or as chicken-pox from the mild character of the symptoms.

The only unrecognized case from which a considerable number of persons were infected was that of a man, 49 years of age, who had been suffering from an eruption for two or three weeks, but, as his general symptoms were trifling, the eruption was regarded as that of a common skin disease. Several of his fellow-workers had been visiting him during his illness, and two of them suffered from well marked small-pox, as did also his daughter (married) and his cousin, who resided in the country. It was rather a curious fact that although nine other persons resided in the house along with this man, none of them seem to have contracted the disease, except perhaps a lodger, who had a very slight illness, which, however, did not incapacitate him for work, and who had a few papules amongst his hair. One of his fellow-workmen afterwards contracted small-pox, and was probably infected by him.

In 1903, 36 cases were notified in Dundee. Dr. Templeman writes:

In a considerable number of instances the source of infection could not be traced, though it was in several cases found that the patient had been in contact with supposed cases of influenza or chicken-pox, these having really been cases of modified small-pox.

Notwithstanding such mild and unrecognized cases of small-pox, the disease obtained no large hold in Dundee. Throughout the five years 1900-4 the number of notified cases was 175, with 12 deaths, or 6.9 per cent. The disease was therefore of a fairly mild type, and difficult to diagnose. But infantile vaccination had been well attended to. Deducting "insusceptibles" and deaths before the age for vaccination, the percentage of unvaccinated survivors at six months of age was only 4.7. Whether this town would have profited in respect either of deaths or attacks, if infantile vaccination had been successfully discouraged in order to make diagnosis easy, is a question which hardly seems to require an answer.

Sydney and Trinidad.—In the remarkably mild Sydney epidemic of 1913 Dr. Armstrong calls attention to the low intensity of infectivity, and records that—

In the course of the epidemic twenty-seven country towns or districts of New South Wales were invaded by small-pox, and the total number of cases diagnosed in these localities only amounted to fifty-two. The greatest number of persons attacked in any one locality was six, and in sixteen localities only one person was attacked.

And of the Trinidad epidemic of 1903 Scheult says:

The slow spread of the epidemic was due to the slight infectivity of the disease. In many cases the contagion or virus seemed to require intimate contact for its transmission from

* Dr. Neech is of opinion that the disease is only slightly infectious until after the pustules have dried up and formed scabs.

one person to another, and even then it was remarkable how frequently instances were found in which such contacts escaped infection. (*Proceedings, Roy. Soc. Med.*, 1908, p. 236.)

Dunbartonshire and Stirlingshire.—My own experience of the risks of infection from small-pox so mild as to be hardly recognizable is that it is not very infectious. A case which greatly impressed me was that of a woman whose attack was discovered only through her having infected two persons within her own dwelling. She had been moving about freely in the town where she lived, shopping and meeting people on the streets. I feared an outbreak, but after hesitation it was decided to delay advertising a general offer of emergency vaccination, and to maintain vigilant watch for cases. Outside the woman's own dwelling not a single case occurred.

In my annual report for 1905 to the County Council of Stirlingshire I wrote as follows regarding a small-pox patient, Mrs. R. B., aged 35, of Stenhousemuir, the wife of a Carron Company's workman:

Her case is interesting with regard to the source of infection. The medical attendant informed me that, after the beginning of the year, the husband had had a slight illness, which was regarded as influenza, but that connected with it there had been one or two spots on the scalp. I interviewed the husband, and found that his illness had begun in Stenhousemuir, and had continued while he was temporarily employed in Bradford, and that he observed the spots on his scalp merely because they gave him trouble in combing his hair. I communicated with the medical officer of Bradford, and learned that he had been investigating an outbreak of small-pox which had occurred on January 30th, which he suspected to be due to a Scotsman from Carron Company, who had taken lodgings on January 16th, and had felt poorly, and thought he was suffering from influenza, but had no medical attention. He returned from Bradford on the 23rd, and his wife sickened on February 7th, or fifteen days afterwards, so there is no doubt she got the disease from her husband. This case illustrated a frequent experience. The man's attack was exceptionally mild, and he infected no one outside the house in which he lived, though he was in contact with many people outside. Dr. Evans, the Medical Officer of Health for Bradford, informs me that amongst a list of twelve contacts there, of whom seven were outside and five in the house where the man lodged, only two were attacked, these being among the latter five, while all the seven outsiders escaped.

The above passage is from a report on 19 cases in January and February, 1905, in East Stirlingshire. In the infected houses there were twenty-one children under 10 years old, but, owing to infantile vaccination, not one of these was attacked by small-pox. If, owing to discouragement of infantile vaccination, any of these twenty-one had not been vaccinated and had developed a severe or fatal attack, I wonder what the parents would or would not have said had it been explained to them that vaccination had been deliberately omitted in order that an attack, if it occurred, might be so severe as to be recognized, in the hope of getting the case away to hospital in time to prevent infection of the neighbours' children.

Leicester.—Dr. Millard himself, in discussing the control of "contacts," divides them into two classes—"inside," living in the same house with the patient; and "outside," living elsewhere, but "who have been in the same room with the patient after he has taken ill." For outsiders, he thinks vaccination scarcely worth while, but exercises surveillance. This practice, it will be borne in mind, was based on the experience of small-pox of a remarkably mild type, with a low fatality rate, so that many of the cases would be difficult of recognition even amongst the unvaccinated.

London.—The London statistics of 1892-95 and 1901-2 are worth examining in relation to the question at issue.

The earlier epidemic was of a mild type with a fatality rate of 8 per cent. The proportion of cases "unaccounted for" in respect of infantile vaccination had in the decade 1881-90 ranged between 5.7 and 13.9 per cent., the mean of the rates being 8.5. Public health organization was improving, but was not so well advanced as in 1901-2. The later epidemic was of a severe type, with high fatality—16.8 per cent. Public health organization was better developed, and the omission of infantile vaccination had increased greatly, so that default ranged from 16.4 to 33 per cent., the mean of the rates being 24.05. London, in fact, had made measurable progress towards the ideal of cessation of infantile vaccination. In these circumstances, with a more severe disease more easily diagnosed, with less of the infantile vaccination which is complained of as making diagnosis difficult, and with administrative organization improved by a decade of additional experience, the disease

in 1901-2 should, *ceteris paribus*, have been more effectively controlled than in 1892-95. But the facts were that in 1901-2 there occurred 9,659 cases, as compared with only 4,759 cases in 1892-95. London's huge population provides such a statistical basis as tends towards elimination of errors due to paucity of data, but even for London a careful survey of all relevant considerations would be necessary to justify actual conclusion, and so I content myself with calling attention to the facts set forth.

Another point to be noted is that, notwithstanding the superabundance of very mild small-pox in America and the constant traffic across the Atlantic (the journeys taking less than the incubation period), and the difficulty of diagnosis, no epidemic of the American type has been set up in this country since 1902-5.

Though in effect advocating the discouragement of infantile vaccination with a view to achieving such severity of attack as will make diagnosis easy, Dr. Millard himself aspires after mildness of type. "It is obviously," he says, "of the highest importance that the type of an epidemic should be kept as mild as possible." This is more than a pious aspiration. It suggests action to influence the type of a current epidemic. It is "to be kept" as mild as possible. But by what human effort except vaccination can such mildness be secured in an epidemic? In the Gloucester epidemic, of a naturally severe type, would not previous systematic infantile vaccination have had the effect of keeping the epidemic mild, of making the disease less fatal, and of altogether preventing hundreds of the attacks which did occur? One cannot both discourage vaccination in order to make the disease diagnosable and encourage it in order to keep an epidemic mild.

In thinking of this question of missed cases there is risk of being misled by false analogy. Every one knows that mild unrecognized scarlet fever often baffles the medical officer in endeavouring to control an outbreak. But the mildness of scarlet fever and its infectivity do not run parallel as in small-pox. Failure to recognize scarlet fever by parents, with consequent failure to send for a doctor, depends mainly on the absence of the rash, whilst infection, it is now accepted, comes mainly from the throat and nasal passages. The throat may be much affected, whilst the skin has little or no eruption. Also, Dr. Mervyn Gordon, reporting to the Local Government Board, maintains that infectivity depends on one organism, but severity of attack on another. There may therefore be no difference in infectivity as between a mild and a severe case of scarlet fever.* Another false analogy relates to the old practice of small-pox inoculation. It is alleged that thereby the individual was protected but that the community was endangered, and more harm than good was done. That proposition is historically open to dispute, and the Royal Commission on Vaccination wisely held the decision in doubt. But accepting it for the moment, variolation did produce an infectious disease, whilst vaccination does not. It is true, of course, that with lapse of time after vaccination immunity diminishes. The remedy, however, is not to refrain from infantile vaccination, but to resort to revaccination.

In 1904 Dr. Millard made the following reservation: "It is possible that if practically the whole population become unvaccinated, the 'Leicester Method' will prove insufficient to keep the disease in check." This is a hard saying. If vaccination makes small-pox so difficult to diagnose as to do more harm than good, surely a wholly unvaccinated population would be best of all for resistance of invasion. If only 20 per cent. are unvaccinated then the other 80 per cent. may, through missed cases, spread disease among the 20; if 40 per cent. are unvaccinated, they are liable to infection from the vaccinated 60; if 80 per cent. are unvaccinated there is still a danger from the 20 vaccinated. The fact is there is no half-way nor quarter-way house. If infantile vaccination does more harm than good, then the less there is of it the better, and none at all is best of all. Since writing these words I find that Dr. Millard's views on the disadvantage of infantile vaccination have forced him to practically the same conclusion. "I honestly believe that if the entire population of Leicester were either completely vaccinated (by repeated

* Dr. Millard, however, referring to scarlet fever, asks, "Is it not probable that the great change which has taken place in the type of the disease, in the direction of lessened severity, has been accompanied by shortening in the duration of infectivity?" (*Trans. Epidem. Soc.*, 1901-2.)

vaccination) or completely unvaccinated the danger of small-pox would be less."¹

Here it is necessary to bear in mind what would be the effect on the condition of the community, as a whole, of the discontinuance of infantile vaccination. Under exposure to small-pox the proportion of vaccinated persons infected is much less than of unvaccinated. The greater the total amount of vaccinal protection in a population the smaller is the number of persons liable to attack. For nine or ten years after infantile vaccination, especially if the prescribed standard of number and area of marks is adhered to, the individual enjoys a very large degree of immunity, not merely against death but against attack. In both respects the immunity continues, though in diminishing degree, for a much longer time than this, that against death being much more prolonged. The fatality rate of small-pox in childhood is exceptionally high. But it is childhood that is specially protected by infantile vaccination, and children allowed to remain unvaccinated in order that if attacked they might have an illness sufficiently severe to make diagnosis easy, would be more likely to have a fatal attack than if the disease were deferred to later years. This would be part of the price of easier diagnosis.

The object of vaccinal legislation is, of course, to promote vaccination. If it has no such effect then it is useless and ought to be given up, still more so if on balance it in some way or other tends to discourage vaccination. These are relevant considerations for the Legislature, which also has to take a broad view in relation to the whole doctrine of the liberty of the subject. But to discourage vaccination in order that the unvaccinated individual may have an easily diagnosable (therefore possibly fatal) attack of small-pox seems to me a proposition contrary alike to the principles of medical ethics and to the interests of the public health.

There is, however, one conceivable condition which would not only justify but demand the cessation of vaccination. If small-pox were to disappear, so also manifestly would the need for vaccination. The risks attaching to vaccination were never in this country more than trivial, and calf lymph with modern asepsis has made them imponderable in weighing the value of vaccination;* but if there were no need for vaccination it would have no value, and the marvellous decrease of small-pox since the close of the outbreak with which this century began makes such a possibility, however remote still, yet apparently less remote than ever before.

REFERENCES.

¹ *Med.-Chir. Trans.*, vol. xxxvi, p. 385. ² Local Government Board Medical Officer's Report, p. 97. ³ *BRITISH MEDICAL JOURNAL*, November 24th, 1894. ⁴ *The Vaccination Question* (H. K. Lewis, 1914), and *Public Health*, February and March, 1917. ⁵ *Public Health*, 1904, p. 620. ⁶ *Public Health*, March, 1917.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE DURATION OF GESTATION AND THE RECKONING OF THE AGE OF A HUMAN EMBRYO.

In dealing with the questions of the duration of gestation and the reckoning of the age of a human embryo, we must bear clearly in mind (a) that no woman living and capable of living a marital life who has never menstruated, and who is incapable of menstruating, has ever or will ever become pregnant, and (b) that in ordinary circumstances menstruation is always held in abeyance during utero-gestation.

From time immemorial apparently it has been customary to reckon the duration of gestation and to estimate and fix the probable date of delivery from the time of occurrence of the last menstruation. It has been assumed, on no scientific grounds, that gestation in woman extends over a period of ten lunar months or 280 days, but strange to say, although fertilization cannot take place during menstruation, some authorities nevertheless consider that the 280 days should be calculated not from the cessation

but from the time of appearance of the last menstrual discharge. Because, however, when an ovum is fertilized, gestation begins at a definite time the method of reckoning the probable date of parturition from the last menstrual period has met with a certain amount of success and satisfaction owing largely to the fact that a large percentage of women menstruate every twenty-four or twenty-eight days. In those cases in which menstruation is wont to recur every five or six weeks the present method of reckoning the probable date of delivery is apt to bring discredit upon medicine as a science. It is, moreover, generally conceded that fertilization may take place at any time during the intermenstrual resting period—the period, that is, extending from the cessation of menstruation to the two or possibly three days prior to an expected menstruation, when there is, in anticipation of the heightened oxidative processes necessary for the fulfilment of that function, an increased determination of blood to the internal organs of generation. I have¹ elsewhere drawn attention to the fact that we have the strongest clinical reasons for believing that no matter when the human ovum is fertilized gestation in every case begins during the two or possibly three days preceding an expected menstruation. Let us, however, assume that fertilization and the starting of gestation are to all intents and purposes synchronous, or rather that the beginning of gestation follows fertilization immediately, then it must be allowed that the gestation period for an ovum fertilized immediately after menstruation is longer than that for an ovum fertilized four or five days before an expected menstruation. In support of this contention we have no scientific or clinical fact. From what obtains in the matter of the germination of seeds and the incubation of birds' eggs, we are justified in concluding that even in the case of the fertilized human ovum fertilization and the beginning of gestation are not necessarily synchronous except where fertilization happens when the internal organs of generation are about to prepare for an anticipated menstruation.

Embryologists have hitherto adopted the aforesaid fallacious method of estimating the age of any given human embryo. Some are inclined to attach much importance to the probable date of fertilization, but from what I have already stated it must be evident that, even if we could rely upon the statements of women as to the occurrence of an alleged fruitful and possibly single act of coitus, the date of such would be of no service in estimating the probable age of a human embryo. It is quite clear that our present method of reckoning the duration of gestation is a tacit admission either that fertilization and the commencement of gestation are synchronous, and take place at a definite and fixed time in the case of every fecundated woman, or that, whilst fertilization may take place at any time during the intermenstrual resting period, gestation itself begins in all cases at a definite and fixed time. That the latter is the correct interpretation of all the clinical facts connected with the reproductive process in women I have no shadow of a doubt.

JAMES OLIVER, M.D., F.R.S. Edin.

COLLOSOL ARGENTUM IN A MENINGOCOCCUS CARRIER.

NURSE — had been nursing a case of cerebro-spinal meningitis and became infected. Swabs taken at weekly intervals from the nasopharynx by Captain Assinder, Pathologist 2/1st Southern General Hospital, showed meningococcus on culture. The swabs continued to be positive each week from October 28th, 1918, to January 1st, 1919. The patient was isolated and subjected to various forms of treatment, including Levick steam inhalations, chloramine-T sprays, etc., but the meningococcus remained present. She became very melancholic and despondent owing to the segregation and the lack of success in exterminating the germ. She was referred to me for suggestions as regards any intranasal treatment, and as a last resource I suggested a spray of collosoil argentum. From January 3rd this was applied four times daily for three minutes, in an all-glass spray, through both nostrils. At the expiration of the first week no meningococci were found in the test swab. The same result was obtained at the end of the second and third weeks, the

*The Royal Commission reported that the risks "though undoubtedly real and not inconsiderable in gross amount," still "when considered in relation to the extent of vaccination work done, they are insignificant." Since the Commission reported, the change from humanized to glycerinated calf lymph has been complete.

¹ *New York Medical Journal*, January 16th, 1917.

spray in the meantime being continued. The patient was very gratified at being released from isolation. She has now returned from a month's leave and a test swab taken by Captain Assinder was found to be negative. No collosol was sprayed into the nose during this period.

I have since prescribed collosol argentum in several selected cases of rhinitis. It has the effect of contracting and toning up the nasal mucous membrane and giving much sense of relief after it has been used for four or five days. Turgescence seems to disappear. Cases showing oedematous enlargement of the posterior ends of the middle and inferior turbinates without true hyperplasia are markedly benefited by its use. One or two cases complained of slight soreness of the throat after a day or two. Perhaps this is due to its astringent properties.

B. SEYMOUR JONES, Capt. R.A.M.C.(T.),
Aurist and Laryngologist, 1st and
2nd Southern General Hospitals.

Reports of Societies.

CAUSATION OF INDUSTRIAL ACCIDENTS.

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on March 14th, the President, Lieut.-Colonel E. W. GOODALL, in the chair, Dr. H. M. VERNON read a paper on industrial accidents. Dr. Vernon gave a summary of the investigations described in his report¹ to the Health of Munition Workers Committee (Memorandum No. 21), demonstrating the connexion between the frequency of industrial accidents and (a) rate of output; (b) fatigue engendered by long hours; (c) external temperature. He also exhibited photographs of numerous safety devices and a chart showing the reduction of industrial accidents which resulted in America from a safety campaign. In the ensuing discussion, Dr. COLLIS referred to the importance of the subject and the evolution of the system of medical inspection of factories in relation to accident prevention. Captain GREENWOOD referred to the investigations made by himself, Mr. Udny Yule and Miss Woods, which threw light upon the personal factor in accident causation, and remarked that attention to the environmental factors studied by Dr. Vernon, together with elimination of susceptible workers, would go far to reduce accidents to a minimum.

THE DIAGNOSTIC VALUE OF THE WASSERMANN REACTION.

At a pathological meeting of the Liverpool Medical Institution held on February 13th, with the President, Mr. THURWALL THOMAS in the chair, Major J. M. BEATTIE read a paper on the diagnostic value of the Wassermann reaction in syphilis. He claimed that the test, when carried out with a full and accurate technique, was of extreme value, and referred to the very consistent results obtained by three experienced workers selected at the instance of the Medical Research Committee.

The results in 1,000 cases were analysed, and it was shown that negative results could in almost every case be reconciled with the history of the cases, treatment, etc., and that in positive cases the clinical and serological diagnoses almost invariably agreed. In clinically obvious cases—for example, chancres, condylomata, gummata—every negative result could be satisfactorily explained by the cases being either very early, fully treated, or undergoing treatment at the time the test was done. In other cases, where dependence had to be placed on a very imperfect history, the agreement between clinical diagnosis and serological was not so close, but there was sufficient agreement to justify the opinion that the reaction was of the greatest value. Fallacies were dealt with, such as the development of thermostable anticomplementary substance produced by bacterial growth in the blood and the varying amount of complement absorbed by healthy blood. It was urged that further accuracy might be attained by estimating the amount of complement that could be absorbed by the blood without the presence of antigen before commencing the test proper. The importance of

standardized antigen and amboceptor and the adoption of one standard method for all approved laboratories were urged.

Reviews.

WAR CRIPPLES.

PROFESSOR JULES AMAR, of the Conservatoire des Arts et Métiers in Paris, is well known for his investigations into muscular activities by means of ingeniously devised recording machines. His work on the physiology of industrial organization,¹ an example of a class of books in which the French excel—that of popular scientific treatises—has now been translated into English. It is somewhat difficult to criticize, because it deals with a surprising number of themes and may therefore be regarded from many points of view. It is not only a popular handbook on hygiene, but it deals with psychology, pedagogy, caligraphy, and oratory. In this last connexion we are told that "the psychical ego withdraws itself at intervals from the strain of thought, taking refuge by preference on some flower-strewn bank." After which we are not surprised to find that rhetoric is the subject of the next paragraph, though we are told that "the adornment of speech is a means, not an end." The apprenticeship system, the comparative value of the French and the Italian workman, the ethnography of Northern Africa, and especially of the Kabyles—"five Kabyles are equivalent to six good Arab workers"—their diet, the author's formula of a refreshing drink for them, and the right policy to be pursued in native education in Algeria; all these and more are dealt with.

It is interesting to learn that one of the first pioneers in the study of the economics of labour was the great military engineer Le Prestre de Vauban, some of whose fortifications, as at Verdun, have been the scenes of recent fighting. Lavoisier studied the effect of muscular effort on the amount of oxygen respired, and thus initiated one of the methods employed by Professor Amar; but it is to the American engineer F. W. Taylor and his successor Gilbreth that he turns for inspiration when inquiring into the circumstances most favourable to increased output of work with the least fatigue to the worker.

By recording apparatus attached to a file, to a joiner's plane and to a spade, and by the ergometric bicycle and the cheirograph, bulb dynamometer and arthrodynamometer, all of which are self-recording instruments and with all of which the consumption of oxygen is recorded, tracings and charts have been prepared of many cases. The results are of value as showing the amount and direction of the forces employed and their regularity or irregularity. The efforts of the patient can then be directed to correct defects, to ensure economy of effort, to note the onset of fatigue, and to regulate the spells of work accordingly.

Some of the conclusions reached after testing hundreds of workmen and soldiers are worth quoting. For instance, it was found that in walking on the level the most economical speed was 4.5 kilometres (2.8 miles) an hour with two minutes' rest at every kilometre. When a burden of about 45 lb. was carried the rate was lower—namely, 4.2 kilometres (2.6 miles). These speeds are considerably less than that of men marching at the quick step of the British army. The results with men carrying burdens upstairs or up an inclined plane also suggest modification of generally accepted views in the direction of decreasing speed and increasing the number of intervals of rest. In bicycling (on the level?) the most economical speed is one of nearly ten miles an hour, and at this rate the work done is half that in walking the same distance—a rather unexpected conclusion to most people, who would consider a twenty mile walk as far more tiring than a forty mile bicycle ride. A good deal, however, must depend on the condition of the bearings and tyres of the bicycle.

The last three chapters of the book are devoted to the consideration of re-education of war cripples, including the design and supply of artificial limbs. Professor Amar

¹ *The Physiology of Industrial Organization and the Re-employment of the Disabled*. By Professor Jules Amar, Director of the Laboratory of Physiological Research in the Conservatoire des Arts et Métiers, Paris. Translated by Bernard Miall, etc. London: The Library Press, Limited. 1918. (Roy. 8vo, pp. xxv+371; 135 figures. 30s. net.)

¹ BRITISH MEDICAL JOURNAL, 1918, vol. i, p. 569.

states that 80 per cent. of the war-crippled are capable after re-education of earning their living, but of this number nearly one-fifth will require special workshops and appliances. He considers that the method of investigation he used for normal persons is necessary for the study of the capabilities of cripples, and incidentally that it is capable of detecting malingering. The tracings reproduced are of interest as showing improvement under training. We do not think, however, that anything is to be gained by substituting his elaborate methods of examining and training amputation stumps for older and simpler methods, but his remarks on sensation in stumps are of interest. Scarcely enough importance is given to the value of length of stump in making the attachment of a prosthesis secure, apart from its value as a lever. To take the forearm as an instance: it is true that from the mechanical point of view of flexion of the elbow any portion of the bones below the attachment of the flexors is superfluous, but from the point of view of the prosthetic surgeon every inch is of importance, for security of attachment and comfortable distribution of pressure. The cardiograms taken from cases of recent amputation are of considerable interest as showing the lasting deleterious effect of severe wounds and sepsis, and they are in accordance with expectation. They may be compared with a statement of a distinguished surgeon that the subject of amputation has a better prospect of life than the man whose limbs are intact, which was seized upon and much quoted by the lay press.

The chapter on scientific prosthesis contains nothing that is not familiar to surgeons in this country. As regards artificial legs, the criticisms of the American types of limbs are contradictory, and we venture to think that some types of limbs produced here and by the Belgian Government and others are superior to those which Professor Amar dogmatically asserts are the best. The artificial arms described are of familiar types. The "universal pliers" is a practical instrument, useful for many purposes.

In the last chapter, on professional re-education, the importance of restoring the patient to his old calling when possible, is emphasized, but the following list is given of occupations suitable for teaching in schools for war-cripples:

Orthopaedic mechanic, mechanical engineering (fitting, tool cutting), industrial design, photography, shoemaking, harness-making, saddlery, electrical fitting, tinsmith's work, management of agricultural machinery and small motors, wooden toy making, making hands and feet for prostheses, and carpentry.

The translator has used throughout the book the Continental spelling of prosthesis and prothetic instead of the etymologically correct forms of prosthesis and prosthetic, used in this country.

MEDICAL FIELD SERVICE.

THE war just ended produced so many new conditions demanding fresh lines of treatment and throwing new responsibilities on the medical officers, that some simple textbook enunciating and defining these and showing the reason for many of the orders and instructions in force was needed. It is a matter for regret that Lieut.-Colonel PAGE'S *Medical Field Service Handbook*² could not have been published earlier, for it contains just what a young medical officer in the field needs to know. The problems with which he is faced are dealt with in a practical manner, for the author, with his experience both as a surgeon in a casualty clearing station and as a subordinate and a commanding officer in a field ambulance, has learned what the needs are and what can be done, in the varying circumstances of warfare. Part I deals with the great question of "wastage," and the common causes and how they can be combated are discussed. The essential duty of the regimental medical officer to prevent sickness and wastage, by attention to the hygiene, the bathing, the laundry and the cooking of his unit, is pointed out. A very large proportion of the sickness in the armies has been due to skin lesions and to trench fever, and both of these conditions can be enormously reduced in incidence, if not eliminated, by careful attention to the

personal hygiene of the men and by efficient methods of overcoming infestation with vermin. The chapter on trench foot also contains much useful information which has for the first time been put together in readily available form. One cause of wastage—venereal disease—the author has not touched on; it should be included, for the medical officer should be in a position to educate his men on the matter. In Part 2 the treatment of wounds is discussed. Particular attention is paid to the details of work and the necessary arrangements at the dressing stations, and to the all-important prevention of shock by warmth and transfusion. The portable warming apparatus which can be extemporized from material in the field, and which was introduced by Colonel PAGE, as also his simple method for warming or delousing clothing and blankets, is described. The early treatment of the various main classes of wounds is dealt with, and we are glad to note that the importance of suturing the "sucking" chest wound as soon as possible is emphasized. The concluding chapter outlines the pathology and treatment of gassed cases. The *Handbook* can be confidently recommended to all medical officers with the army, for even now when hostilities have ceased it will be found to contain much valuable information.

The author of *The Whole Duty of the Regimental Medical Officer*³ has apparently gained much of his experience elsewhere than in France, but owing to the style in which he writes this does very little to detract from the interest and value of what he has to say. He divides his subject into three parts—the duty of a medical officer to the state, to his unit, and to himself; and winds up with an appendix on camp inspection. The three parts necessarily overlap, but Captain WOOD manages to avoid repeating himself. In all three he assumes, without saying so, that the reader is well up in ordinary professional work; the main aim is to show him how to apply his knowledge to the best advantage. No one who studies this little book can remain in doubt as to the width, importance, and exacting character of a regimental medical officer's duties, and for this reason it will prove useful even when all armies have reverted to a peace footing.

A MANUAL OF HYGIENE.

IN the sixth edition of BERGEY'S *Principles of Hygiene*⁴ the author endeavours to survey the whole field and to take note of the advances made in recent years, so as to provide a thoroughly up-to-date book for the student and practitioner of medicine. It is of interest to the English reader to have a work dealing with the subject from the American point of view, for, although the principles of the science are the same for all countries, yet in their practical application there are slight differences. We need only mention such questions as buildings and the regulations for their construction, heating, and ventilation, the methods of quarantine, etc., to illustrate how the temperament of a country affects the practice of hygiene. Dr. Bergey illustrates his subject by examples drawn not only from American but from European sources, and in footnotes references for his statements are cited. The chapter on vital causes of diseases is rather incomplete, and animal parasites have far more consideration than those of a vegetable nature. Dysentery might have been more fully treated, and the information might have been more exact; the student should not be led to confuse *Amoeba coli* with *Entamoeba dysenteriae*, and should be instructed as to the bacterial varieties of the disease. Throughout the book there is no reference whatever to venereal disease; perhaps American public opinion has not been educated sufficiently to allow this subject to be dealt with in a textbook of hygiene. Valuable suggestions for the sanitary control of public conveyances, street cars, and barbers' shops find a place in the chapter on disinfection. The printing and paper are excellent, but many of the illustrations, especially those of traps, steam disinfectors, etc.,

² *The Whole Duty of the Regimental Medical Officer*. By Captain P. WOOD. R.A.M.C.(T.C.). London: Foster, Groom, and Co., Ltd. 1919. (Fcap. 8vo, pp. 78. 2s. 6d.)

³ *The Principles of Hygiene. A Practical Manual for Students, Physicians, and Health Officers*. By D. H. BERGEY, A.M., M.D., D.P.H., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Sixth edition. Philadelphia and London: W. B. Saunders Company. 1918. (Med. 8vo, pp. 515; 63 figures. 16s. net.)

⁴ *Medical Field Service Handbook*. By Lieut.-Colonel C. MAX PAGE, D.S.O., M.S., F.R.C.S. With Foreword by Major-General Sir George Makins, G.C.M.G., C.B. Oxford War Primers. London: Henry Frowde, and Hodder and Stoughton. (Fcap. 8vo, pp. xiv + 159; 8 figures. 6s. net.)

are rather obsolete. Apart from these minor defects the author has succeeded in a difficult task, and one requiring considerable judgement, not only as to what should be included, but also as to what should be omitted.

TREATMENT OF LEPROSY.

DR. F. HALL,⁵ Medical Superintendent of the Leper Asylum, Makogai, Fiji, has recently tried Heiser's method of giving chaulmoogra oil. He rightly protests against drawing conclusions from small numbers of cases, and expresses the belief that some recent reports of results obtained are much too optimistic in tone. His own observations are based upon some ninety cases; several had had the injections for as long as two and a half years. He concludes that nothing dramatic must be expected after a few injections, and unless patient and physician are determined to persevere for a very long time "cure" should not be expected, though there is little doubt that the treatment is of great help to the leper. With it he may confidently look forward to the disappearance of attacks of leprotic fever, or a great reduction in their frequency and to escaping the leprotic "reaction." Improvement in general health and energy may be expected, provided of course that there is no intercurrent disease to prevent it, and that his organs of elimination are not too damaged to allow improvement. Some return of tactile sensation and reduced liability to traumatic ulcerations and even arrest of the disease may be observed in a certain proportion of cases. Trophic ulcers do not heal under its influence, and should always be treated surgically by the free removal of underlying bone which is always affected. A vaccine prepared from an acid-fast phase of a streptothrix produced no amelioration of the symptoms in several cases; in others it provoked a violent reaction. Chaulmoogra treatment is not new; it was in vogue as long ago as 1900, and the results obtained then correspond very closely with those now described.

NOTES ON BOOKS.

THE French newspaper press, though it is more like the British than that of any other country, differs in some respects. It gives less space to foreign news than the leading English newspapers, and more to comment. This is true of the most important French newspapers, which are all published in Paris, whereas some of the best informed British newspapers are published out of London. But the main difference is that the most active members of the French Parliament are regular contributors to the newspapers under their own name. Not a few have begun life as journalists. M. Clemenceau is an instance; he is a doctor of medicine, and once practised in Paris, but he has been a working journalist for nearly fifty years, editing many papers, but always the enemy of sham and prejudice, ready, as during the Dreyfus case, to run any risk of loss of popularity to defend what he believed to be the truth. Not long ago, when his attacks upon the then French Government was bringing it down, M. Léon Daudet expressed the general opinion when he said, "Make him a Minister or court-martial him." Of the way in which the French daily press, which is much as to say the Paris daily press, worked during the war, and of the accomplished writers and publicists who helped to guide and maintain public opinion, some account is given in a book⁶ M. A. de Chambure has just published. It describes the character of the newspapers, and gives sketches of the career and opinions of the chief writers; it is an interesting and very readable book.

⁵ *Treatment of Leprosy.* By F. Hall, Medical Superintendent, Leper Asylum, Makogai. (Government of Fiji)

⁶ *Quelques Guides de l'Opinion en France pendant la Grande Guerre, 1914-1918.* Paris: Colin et Cie. (Cr. 8vo, pp. 252. 4 fr. 50)

THE INDIAN SCIENCE CONGRESS.

THE Indian Science Congress met in Bombay from January 13th to 18th, under the presidency of Lieut.-Colonel Sir Leonard Rogers, F.R.S., I.M.S.

At the opening meeting, when the Governor of Bombay was in the chair, Sir Leonard Rogers delivered an address in which he dwelt on the importance of research to India, illustrating the matter by tracing the steps through which the modern treatment of cholera was evolved. The first step was the use of normal (isotonic) salt solutions; the

result was not very striking, though the mortality fell from 59 per cent. to 51.9 per cent. In 1907, after reflecting on the physiological principle that a high salt content tended to retain fluid in the blood, he determined to double the former strength, injecting 1.2 per cent. of sodium chloride. The result was most satisfactory, the mortality being nearly halved. It was next found that in severe cases the amount of chlorides in the blood might be below the normal, in spite of the great concentration of the blood. It was ascertained that the loss of serum from the blood in a severe case might be very great; in mild cases not showing any serious collapse the loss was 35 per cent.; in severe cases recovering after the isotonic saline solutions the loss averaged 52 per cent., whereas in dying cases the percentage was 64 per cent. Using Lloyd Jones's method of estimating the specific gravity of the blood, it was possible quickly to ascertain the quantities of hypertonic saline required to restore the normal fluidity. By treatment on this principle the mortality was reduced to 32.6 per cent. It was, however, realized that more should be done. Deaths appeared to be due to a recurrence of the collapse owing to absorption of the toxins produced by the cholera bacillus in the intestine when the circulation was restored after the saline injections. When the bacilli broke up as they did in enormous numbers, the toxins were liberated. Bearing in mind that they were largely albumoses and other unstable albuminous bodies, experiments were made with various oxidizing agents, and it was found that *in vitro* several times a lethal dose of dead comma bacilli could be neutralized by a small quantity of permanganates. A trial of large doses of potassium permanganate in pill form by the mouth, as much as 100 grains sometimes being given in the course of several days, in addition to the hypertonic treatment, reduced the mortality of cholera during a year's use from 32.6 to 23.3 per cent. Deaths, however, still continued to occur under this treatment from failure of the renal function. Acting on a suggestion of Sellards in the Philippines, who suspected a diminution in the alkalinity of the blood, sodium bicarbonate was added to the saline solutions and a marked reduction in the death-rate from renal failure ensued. The final result was that the mortality of cholera was reduced from 59 per cent. to 19.1 per cent., and was in one series of 288 cases only 14.9 per cent.

The lesson to be learnt was, Sir Leonard Rogers said, the importance of combined clinical and pathological investigations. It was therefore unfortunate that, with a view of facilitating the preparation of the material for the Pasteur treatment of hydrophobia, the laboratories in India had been placed on remote hilltops. As experience at Rangoon showed, it was possible to carry out the treatment of hydrophobia and other bacteriological methods in the plains, with the help of a refrigerator, and, where necessary, a temperate room. It was a serious disadvantage to so many of the bacteriological or, as it should be called, medical research department, that they had to work divorced from large hospitals. This defect would partly be removed when the schools for tropical medicine in Calcutta and Bombay had been opened. He urged in addition that all the larger hospitals should have whole-time pathologists. Unfortunately the controlling service in India was still quite unaware of the value of scientific training and experience, and objected to the more highly educated members of scientific sciences, including the medical, receiving adequate pay, much less the princely salaries the Indian Civil Service obtained themselves. In concluding his address, he appealed for the public endowment of medical research. Bengal and Behar had given him seven lakhs for a tropical school of medicine, and of this half had been expended on the Carmichael Hospital for Tropical Diseases; commercial associations were contributing 60,000 rupees a year to support three additional workers, to investigate the diseases which affected the labour forces of the tea, jute, and mining industries. He made an appeal also for an Indian Rockefeller to come forward with a crore or two of rupees, backed by contributions from others, for the aid of genuine medical research all over India, independently of race or position, under the control of a governing body. The chairman and a majority of the members of this should be scientific experts.

The congress had four sections—agriculture and applied botany, medical research, physics, mathematics and geometry.

(To be continued.)

AFTER-WAR DEVELOPMENTS RELATING TO PUBLIC HEALTH.

A CONFERENCE on after-war developments relating to public health was held at the Royal Sanitary Institute on March 13th, 14th, and 15th, and was attended by delegates from 120 local authorities.

The Public Health Aspect of Tuberculosis.

In opening a discussion on the public health aspect of tuberculosis, Dr. N. D. BARDSWELL (Medical Adviser, London Insurance Committee) said that many patients when they first came under the observation of tuberculosis officers were beyond cure, and of the curable cases many declined treatment on the ground that to undertake it would be to deprive their families of sustenance. The incompletely cured consumptive was a disabled worker; he could not survive the stress of competition with normal labour. Nothing but very widespread social reform would remove or ease these factors. In the meantime he urged greater use by the authorities of the services of skilled tuberculosis officers and also a more liberal scale of sickness benefit. The soundness of the colony or settlement idea was incontestable; the question was how far it was practicable. He described the occupational system at the colony at Papworth, where some ex-soldiers were able to augment their pensions of 27s. 6d. a week by small earnings. It was most important that consumptives who had had the grit to enter a colony and learn a new trade should not be mulcted of their pensions. The idea of a factory for the employment and segregation of consumptives was not entirely a dream. For the last two years a sanatorium-factory had been run by a care committee in New York, and it was found that the wages earned by the employees more than balanced the sum which in previous years the society had paid away in relief and subsidies.

Public Health Propaganda and Social Work.

Sir MALCOLM MORRIS, who presided over a discussion on public health propaganda, spoke of the Ministry of Health as marking the commencement of a new era. The co-operation of the people had to be secured, not by bullying and officialism, but by education. Somehow it must be made fashionable to be healthy. Professor H. R. KENWOOD said that the most effective propaganda would be that which sought out the people, and he spoke of the value of pithy and telling addresses by experienced persons to select audiences, such as the workmen at a factory. Many of the health departments in American cities carried out a regular public health educational propaganda through the columns of the newspapers; some of the departments kept their own publicity official. He was of opinion that any such propaganda in this country should be directed from the Ministry of Health by a council of medical men and women, together with social workers and journalists.

Welfare Work in Factories.

Sir ARTHUR WHITELEGGE (late H.M. Chief Inspector of Factories) presided over a discussion on this subject. Of "welfare," for which he thought a more adequate term should be found, he had seen at the Home Office the tentative beginnings; the war had given it a great impetus, and the Act of 1915 enabled the Home Secretary to make direct "welfare" orders, many of which were now in force. Systematic research on this subject had been undertaken by a strong committee, with Professor Sherrington as chairman, and he looked forward to increasing progress and not retrogression in the post-war period. Dr. EDGAR L. COLLIS (Director, Welfare and Health, Ministry of Munitions) sketched the whole history of welfare work. He said that when the armistice was signed there were 1,000 persons engaged in supervising women and girls in factories, and 400 persons engaged in supervising boys. He dealt in detail with the important considerations which arose where married women were employed in factories. The dismissal of the expectant mother as soon as her condition was manifest was wrong from every point of view. It did not benefit the pregnancy, because miscarriages usually occurred in the earlier months before the condition was generally recognized; reasonably active exercise for the pregnant woman was beneficial rather than harmful; she required not less but more earnings at this period, and not less but more supervision, and to dismiss her made it less likely that she should be encouraged to regard her condition as normal and physiological. The Welfare and

Health Section of the Ministry of Munitions advocated a different plan. As soon as the condition was known, a woman on heavy physical labour was transferred to light work, and employment on night shifts was given up. About the sixth or seventh month she was transferred to a dépôt where light sedentary work was done, and where the ordinary factory discipline was relaxed so far as time-keeping and regular attendance were concerned. Reasonable wages were paid, calculated by time and not by piece, so as to avoid rush of work, and food was given. Under such conditions the woman might continue earning wages right up to her confinement. When the month was over it was considered that if the mother desired to return to industry she should be permitted to do so, by way of the light employment dépôt, whither she could bring her baby. A nursery was set aside at the dépôt, and opportunities were given for breast-feeding.

Child Welfare Work.

The closing discussion of the conference was on child welfare work. It was presided over by Mrs. Lloyd George, and was opened by Dr. FLORA SHEPHERD, who dealt particularly with the need for co-ordination between hospitals, homes, and institutions dealing with the health of the child. In each borough there should be a sufficient number of ante-natal and infant welfare centres to deal with the whole population, and so distributed that no mother would have to bring her child a long distance. To each centre should be allocated one or two health visitors, each of them directly responsible to the medical officer of the centre and ultimately to the medical officer of the borough.

ROYAL MEDICAL BENEVOLENT FUND.

THE annual meeting of the Royal Medical Benevolent Fund was held on March 11th at 11, Chandos Street, London, when the President, Dr. SAMUEL WEST, was in the chair. The annual report, which was presented and adopted, showed that in spite of the anxieties of the war and the successful special appeal made for the War Emergency Fund, the position of the finances was satisfactory.

In the grant department the subscriptions and donations showed a decrease nearly as large as in 1917, the decrease being £42. Owing to special subscriptions at the dinner it had been possible to distribute £256 more than last year. In the annuity department the income was £4,332, an increase of £585, of which £310 was derived from legacies. The amount distributed (£3,188) was £47 more than in 1917. The Guild continued its good work and made satisfactory progress. Reference was made to the severe loss the committee had suffered during the year by the deaths of Dr. Leonard Guthrie and Mr. Guy Elliston. The assistance of the British Medical Association was recognized in placing its whole organization at the disposal of the Fund and enlisting the help of the Branch and Divisional secretaries. The result had been the addition of considerable sums to the Fund's resources. Thanks were given personally to the Editors of the *Lancet* and the BRITISH MEDICAL JOURNAL, and to Mr. W. E. Warne (the Acting Business Manager of the British Medical Association).

The War Emergency Fund amounted to £22,699, which included £683 outstanding. The expenses of collecting, chiefly in printing, postage, and secretarial assistance, had been 7 per cent.; this economy might be fairly referred to good management, but had been largely helped by the liberal support of the British Medical Association, which had used its organization to make the special appeal for the War Emergency Fund widely known. Applications were investigated by a special subcommittee of which Sir Alfred Pearce Gould was chairman. It had been able not only to make grants but to put the applicants into relation with various Government departments, thus enabling them to take advantage of the resources set apart for this purpose by the Government. As was to be expected, demobilization had increased the number of applications, and it was anticipated that many more would be received in the course of the year. The total needed was £30,000, of which another £7,000 was required.

Election of Officers.—President: Dr. Samuel West. Treasurer: Colonel Charters Symonds. Honorary Secretary: Dr. G. Newton Pitt. Committee of Management (the first six were elected to fill vacancies and the others additional members): Dr. G. E. Haslip, Dr. Wm. Collier, Sir Hugh Rigby, Dr. R. O. Moon, Mr. Charles Ryall, Dr. Arnold Chaplin, Dr. William Pasteur, Mr. Warren Low, Mr. Percy Sargent, Dr. C. W. Chapman, Mr. Raymond Johnson, and Mr. H. S. Souttar.

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DEMOCRACY AND INCOHERENCE.

MANY have looked at the device of the French Republic without realizing that its motto, *Liberté, Égalité, Fraternité*, is a most complete definition of democracy. It was framed by the French Revolution, and has therefore, especially in this country, often been misunderstood. The word of fundamental importance is *égalité*. The French Revolution gave forth many odd opinions, but it did not affirm that all men were equally endowed and deserving of equal consideration in all respects; on the contrary, it declared that it was to men of talent careers were open. By the word *égalité* it meant essentially that every man had the same rights before the law. By *liberté* it meant that a man was free to gang his ain gate so long as he did not offend the rules made by the community to which he belonged, and that a democratic constitution must ensure that he has had his share in the making of the rules. By *fraternité* is to be understood something more than recognition that others of the same nation have equal rights. As Mr. Belloc has well put it, "the community cannot express authority unless it possesses corporate initiative: that is, unless the mass of its component units are able to combine for the purpose of a common expression, are conscious of a common will." The means of getting this common expression has always been the difficulty of democracy. In practice the only method hitherto employed has been the representative system, subject to various controls of greater or less stringency and efficiency. In theory the system fulfils the condition of *égalité*, but in practice it often falls short either because, as usually happens, it is badly contrived, or because the individual members of the community do not recognize the obligations to vote, or on both accounts. With the anthropomorphism out of which the most of mankind has not yet grown, they imagine a Person which they call the State or the Government, and to it they address their supplications, on it rest their hopes and fears, and on it vent their dissatisfaction. As M. Clemenceau has said, with his customary brevity and conciseness: "How great is the illusion which leads a man to believe that responsibility attaches to the Government alone. In a democracy the responsibility attaches to every citizen. The people are responsible for the parliamentary majority." We may go a little further with M. Clemenceau. Though an individualist, he gave currency to the use of the word *bloc* to express the fundamental democratic idea that the citizen, while he is under an obligation to endeavour to make his opinions prevail, is yet under a corresponding obligation, if he fails to convince the majority, to sink his personal aspirations in the common will. He may work to alter the decision; he may seek also to change an imperfect method of obtaining a decision, and as the methods of election to Parliament in France and in this country are faulty, he may indeed believe it to be his duty to do so. That the decision must be loyally accepted while it is in force even by those who

believe it mistaken, is a hard saying, but in large matters of peace and war we all admit its truth. If we do not act on this principle we fall, in another of M. Clemenceau's biting phrases, on "incoherence." It is of this incoherence that the medical profession in this country is in peril.

The Medical Secretary of the British Medical Association has done well in the first part of his address published in the SUPPLEMENT this week to tell the profession some elementary truths about democratic ideals and methods; he uses more words than M. Clemenceau, but he means the same thing. The later part of his address was devoted to a consideration of the reasons given for discontent with the British Medical Association. As to the first allegation—that the Association is not active enough—we entirely agree that it can only be made by a person who has not taken the trouble to understand what it does. The other complaint—that its organization is defective because it is not registered as a trade union—has often been made in recent times, and during the last two or three years the propaganda of the Medico-Political Union (an organization of medical men registered under the Trade Union Acts) has increased the number of believers in this doctrine.

The matter was gone into fully, with legal assistance, by this JOURNAL in 1913. It was approached under the impression that the Trade Union Acts, in spite of their title—for it generally turns out that an Act does more or less than Parliament intended—would be found to apply to a medical union, and that the question for decision would be whether the sacrifice of members which the acceptance of trade unionism would unquestionably entail, ought to be faced to ensure greater safety and efficiency. The conclusion was therefore unexpected. It was, as stated in the JOURNAL of April 5th, 1913, that the strength of trade unionism lies not in forms or laws, or in any immunity from legal process, but in the union and solidarity it has bred, making it possible to obtain obedience and bring about a strike if necessary. No one has yet shown how the medical profession could use the strike weapon even if the majority were willing to use it. The matter has now been gone into again by the British Medical Association, with the assistance of lawyers specially conversant with trade union law. The upshot is given by Dr. Cox, and shows upon what a shaky foundation the Medico-Political Union has built up the façade it presents to the profession.

The advantages claimed for trade union organization of the medical profession seem now to be reduced to two: one is that the funds of a medical trade union would enjoy the protection offered by the Trade Disputes Act of 1906. The legal opinion, as we understand it, is that in the first place a medical man is not a workman, nor a master, within the meaning of the Act; and that if the Trade Disputes Act was nevertheless held to apply, the funds of the union would indeed be protected, but the action would lie against individuals, whether officials or ordinary members of the union. The lawyers express the opinion that little or no advantage would be derived from registration as a trade union in a case in which claims similar to those raised in the Coventry case were again raised. Incidentally they state that a trade union has not the benefit of limited liability which a registered company—the legal status of the British Medical Association—has. The other advantage a medical trade union is alleged to possess over a body constituted as is the British Medical Association is that it would be able to join the Labour Party; but apparently any voluntary medical

organization can join the Labour Party, if it so desires, under the category of "brain workers." The fact is that the doctrine that registration under the Trade Union Acts would increase the powers or immunities of a medical organization appears, so soon as it is carefully and impartially examined, to be a delusion. There are three possible ways of producing a combination of persons having a corporate existence in the eye of the law and enjoying a legal status: it may obtain a charter from the Crown, it may become registered under the Companies Acts (as the British Medical Association is), or under the Trade Union Acts. The whole point is whether there is greater protection by registration under the latter than under the former Acts, and, as we have said, we believe the answer must be in the negative. There is no magic in the term trade union. Here, as is customary in all matters, but especially in legal matters, everything depends on the definition of the meaning of the words used. It seems a pity that able and energetic members of the Medico-Political Union should waste their time pursuing a will-o'-the-wisp.

We may feel this all the more because, though a better statement of the aims and objects of a comprehensive medical association could not easily be framed than is contained in the Memorandum of the British Medical Association, it would be rash to assert that its constitution is free from imperfection. Each reorganization of the Association has been designed to make its constitution conform more closely to the true democratic ideal, and to adapt it to the increase in the number of its members. On the whole the story is one of steady progress, but the present constitution, however excellent the intentions of its framers, has certain defects, obvious to any one who takes the trouble to understand the essential principles of democratic organization.

In every body of ardent reformers there have always been doctrinaires who made more noise and thus exerted more influence than their numbers or the weight of their arguments warranted. Two defects which might easily have been avoided are to be observed in the present constitution of the Association. The idea of having small units possesses great advantages; that no one doubts. But the mistake was committed of making these small units constituencies for the election of representatives. The mistake may be excused, because a similar method is used for the election of the House of Commons, yielding results so glaringly false that no responsible statesman can be found any longer to defend it.

The other defect may be traced to the fact that certain active members of the Committee which drafted the new constitution of the Association were enamoured of the idea embodied in the word "delegate"—that is, a person who in an assembly is the mouthpiece of the words, not of the ideas, of his constituents. This proposal had to be dropped, but the underlying idea was embodied in the doctrine of the "instructed vote"—that a member, unless he attended a meeting at some appointed place in his Division on an appointed day at an appointed hour, should not have the right to vote in the choice of his representative, or have any other opportunity of expressing his opinion except by writing a letter to the *JOURNAL*, which is a work of supererogation having no constitutional force. Is there any man who knows anything about the history of the development of the parliamentary franchise in this country or anything of what it is to-day, who will pretend that it would be possible to apply such a system to the election of members of Parliament? Is it conceivable that a man should be deprived of the right to vote for

his representative, the only definite point at which he shares in the government of his country, because he had not attended a stated meeting at which he was instructed by the candidates, or instructed them? It is true, as the Council recently pointed out, that this defect is mitigated by a rule which gives power to a constituency to make use of the postal vote. Many believe that in the best interests of the Association and the profession the alternative—the vote in person—ought no longer anywhere to be insisted on.

THE FOOD REQUIREMENTS OF MAN.

THE time when the prospect of actual famine seemed something more than a figure of speech to the inhabitants of this country is past. To millions of human beings in other lands semi-starvation is still a grim reality, while those who realize the delicacy of the mechanisms upon which the integrity of a social system depend cannot overlook the connexion between the food supply of an island state and the preservation of industrial peace. Still, to most readers, the Report on the Food Requirements of Man just issued by the Food (War) Committee of the Royal Society¹ will not make an appeal so urgent as would have been the case eighteen months ago. It is, however, a document of considerable interest and practical importance.

In the first part the Committee deals with the data respecting the energetic needs of man, illustrating the argument by the cases of industrial work studied by Becker and Hämäläinen. It is remarked that "the essential factor when dealing with dietetics and with the metabolic exchanges is not the mechanical value of the work done, but the amount of energy which must be set free in the body—that is, the amount of food or body substance which must be consumed in order to perform this amount of work. When we are dealing with questions of diet our measure of light work, moderate work, or heavy work, should therefore be, not kilogram-metres, but calories set free in the body, since on these depends the diet which must be assigned to the different classes of workers. Although sufficient data are still wanting to make a proper classification of the different kinds of work, it would not be an impossible task to carry out such a classification based on measurements of energy-expenditure by the body as measured by respiratory exchanges, whereas it would be practically impossible to effect such a classification on a basis of kilogram-metres of work." Such a classification is illustrated upon the material we have mentioned, but the Committee is careful to point out how inadequate this basis really is.

Precisely the same criticism is applicable to the remarks upon the influence of external temperature upon food requirements, respecting which the data are, if possible, still less complete. The energetic needs of children and adolescents are examined in the light of Dubois's work, it being again pointed out that estimates are to be accepted "with great reserve." Respecting the brain worker, the Committee observes that as a general rule "it may be concluded that the brain worker, although requiring only 2,300 to 2,600 calories, as against 3,300 required by the bodily worker, will have to spend more than the latter on his food, since, in order that he may work with full efficiency, his food must be light and digestible and must contain a relatively larger proportion of protein."

In the following section the consequences of a

¹ Report on the Food Requirements of Man and their Variations according to Age, Sex, Size, and Occupation. 1919. London: Harrison and Sons. Price 1s. 6d.

restricted food supply are briefly examined, the opinion being expressed that "the community could exist, and could carry out a fair amount of work with a diminution of food supplies to two-thirds of their present amounts. In this case, however, it would be necessary to supply a strong incentive to the performance of work, which might be either a voluntary spirit of patriotic devotion, or the application of force, as in the condition of complete subjection to military rule hitherto prevalent in Germany."

Another section of the report deals with the quality of the food. With respect to protein the general rule is laid down that the diet of the "average man" should not contain less than 70 to 80 grams of protein daily and that some of this should be of animal origin. The significance of meat in the diet is due to its high content of animal protein and fat. Such a diet is of advantage to those engaged in sedentary occupations in a cold or temperate climate since it enables them to maintain their body temperature without the necessity of bodily exercise, but is not specially advantageous to the manual worker and may be, when the work has to be performed under a high external temperature, definitely disadvantageous. In discussing the place of fat in the diet, it is pointed out that experience demonstrates a close relation between the assimilation of fat and the performance of bodily work, and the opinion is expressed that "where vigorous muscular effort has to be undertaken it is essential that the diet should contain not less than 25 per cent. of its energy in the form of fat."

In the concluding section, accessory substances, or "vitamines," are mentioned. The Committee remarks that "practically all fresh foods contain small traces of substances whose chemical nature has not been determined, but which are essential for the maintenance of health or for the production of growth. In their absence growth may cease, repair of wounds may be interrupted, or various diseases—such as scurvy, beri-beri, or pellagra—may be produced. A diet composed of preserved meats and dried vegetables infallibly leads in the course of a few months to disorders of nutrition. . . . The growth 'vitamine' is present in especially large quantity in the fats of milk. It is partly on this account that milk is of such vital importance for the nourishment of children. No child's diet can be considered satisfactory in which milk or milk fat is not present." The Committee, in concluding its report, states that it "shows how very inadequate is our present knowledge of the science of nutrition, and demonstrates the necessity of renewed investigations of almost every point discussed in it."

We do not mean to disparage the value of the Committee's labours when we say that the sentence just quoted expresses a conclusion to be drawn from nearly every page of the report itself. At the risk of appearing pessimistic, we must add that it is likely to remain true for a long time to come. Probably our knowledge of the science of human nutrition has now been carried almost as far as it can be by private enterprise; further progress needs the co-ordinated efforts of many minds. But such co-ordinated efforts can only be expected to produce slow progress along beaten tracks. Some unsolved problems—for instance, the cause of cancer—have a certain romantic attraction; there is nothing impossible or even improbable in the belief that some effort of genius may reveal the secret in a flash. But this is not the case with the subject of nutrition. We cannot, of course, presume to set bounds to the achievements of genius; there is room and to spare

for essentially novel and important advances (as illustrated by the study of "vitamines"), but where knowledge is most conspicuously defective is with respect to quantitative details, the provision of which merely requires the painstaking application of well tried methods and can crown the investigator with no new laurels. Whether such a prospect as this is tempting to the young investigator eager for distinction, and how far it may be expected to receive the support of advocates who see in "research" a series of conquests and popular triumphs, are questions we shall not attempt to answer.

CONSULTATIVE COUNCILS.

WHEN we go to press the Standing Committee of the House of Commons has not reached Clause 4 of the Ministry of Health Bill, which authorizes the establishment by Order in Council of consultative councils for giving advice and assistance to the Ministry of Health. The proceedings of the first two days (the Committee is sitting morning and afternoon) are published at p. 353. Incidentally, we may say that it does not appear that much importance need be attached to the use of the term "consultative" instead of "advisory," for we observe that the President of the Local Government Board, in his speech introducing the bill, used the term "advisory." The bill, it should be observed, speaks of councils in the plural, and probably during the discussions in committee it will become known what consultative councils beyond the medical are contemplated. Dr. Addison's conception of the functions of a consultative council was expressed in his speech on the second reading, when he said that he was a whole-hearted believer in the plan of giving to a number of people interested in the problems an active or sufficiently active share in matters of policy, so that the Minister shall be kept in touch with progress and with the opinions of people outside in a very real and intimate fashion. The duties and manner of appointing a council are set forth in a draft Order in Council. This document proposes that a council shall consist of persons of both sexes having practical experience of the matter referred to it. It is to consist of not more than twenty persons. They will be appointed by the Minister, but this will not preclude bodies interested from suggesting suitable members to the Minister, and we have every confidence that Dr. Addison will be disposed to accept the recommendations. The draft order provides that the council should meet at least once a quarter; it will be authorized to report upon questions referred to it by the Minister and to propose to the Minister questions which should be referred to it. It will also have power to report to the Minister on any matter affecting or incidental to the health of the people which has not been the subject of reference to it. The term of office of members of the council will be three years, but they will be eligible for reappointment for another period of three years, making six in all. The council will elect its own chairman, but its secretary will be appointed by the Minister. Further, the council may for special purposes appoint subcommittees from its members, and any subcommittee may add to its numbers persons who are not members of the council; the action of the council in both these respects is subject to the approval of the Minister.

AN EXTENSION OF RABIES.

Two cases of rabies in dogs have been confirmed by the Board of Agriculture, the one near Newport, Monmouthshire, on March 13th, and the other at Cardiff, on March 14th. Two other very suspicious cases near Newport are under investigation. The Board has consequently made

an order prohibiting the movement of dogs out of a large area round Newport and Cardiff, including the whole of Monmouthshire and portions of Glamorgan and Brecknock, and requiring all dogs in the area to be muzzled and kept under control. The order points out, further, that any person owning or having in his charge a dog in any part of Great Britain showing symptoms suspicious of rabies is required by law to report the fact immediately to the police. The first case of rabies in the outbreak in Devon and Cornwall appears to have been confirmed by the Board on September 7th, 1918, and in the following six months twenty-nine cases had been confirmed in Plymouth, six in other parts of Devon, and five in Cornwall. The President of the Board, however, stated on October 26th that he was satisfied that rabies had then been in existence in Devon and Cornwall for several months, probably since the end of May, 1918. Down to the end of February, 1919, the total number of cases of rabies confirmed was 118, and of these 94 had occurred in Devon and 24 in Cornwall, but it was then believed that the prevalence of the disease was decreasing. Twenty-one people who had been bitten (18 civilians, 2 soldiers, and 1 sailor) had undergone Pasteur treatment for hydrophobia. There is a strong impression that the disease was imported from France, possibly by aeroplane but quite as probably by sea. It is possible that it has now reached South Wales from Devon by the same means, as there is a certain amount of coasting trade from Newport and Cardiff to ports in Devon. It is not doubted that there is a considerable prevalence of rabies in France: the Académie de Médecine, on February 18th, adopted a set of resolutions calling the attention of the French legislature and other public authorities to the serious position brought about by the increase of rabies, and urging the impounding of all dogs not carrying an official metal tab showing that the dog tax had been paid for the year. The facts which moved the academy to act were briefly, that rabies had been steadily spreading throughout France since the beginning of the war, that after having disappeared from Paris for four years it reappeared in 1916, producing 411 cases in 1918 and 63 in January, 1919, and that after twelve years of complete immunity a number of cases of hydrophobia in man had occurred recently in the Department of the Seine, two of them in January, 1919.

TUBERCULOSIS GRANTS.

THE Civil Service Estimates show that the amount required in the year ending March 31st, 1920, for the payment of grants towards the cost of the extension of sanatorium benefit to the dependants of insured persons under the National Insurance Act, and of the treatment of tuberculosis generally, is £850,000, an increase of £180,000 on 1918-19. Provision is included in this estimate for the statutory grants under the National Insurance Act, and also for special grants towards the cost of schemes undertaken by local authorities for the treatment of tuberculosis generally. The grants will be administered in England, Scotland, and Ireland, by the Local Government Boards, and will be calculated on the basis of 50 per cent. of the net cost incurred upon the schemes by the Insurance Committee, after taking into account sums applicable out of funds under the Insurance Act and other receipts. "Inasmuch as in the case of Wales the income from investments of the National Memorial Association is applied for the purposes of schemes undertaken by that association on behalf of local authorities, the grant in the case of such schemes will consist of (i) one-half of the income from investments so applied, including interest calculated at 4 per cent. per annum on any of its capital funds applied by the Association towards the provision of sanatoria, etc., under approved schemes, and (ii) one-half of the net cost of the schemes after deducting the income from investments and the grant under (i) as well as other receipts."

THE CLINICAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, APRIL 8-11.

IN the centre of the JOURNAL this week is published the programme of the special scientific and clinical meeting of the British Medical Association, to be held in London on April 8th, 9th, 10th, and 11th, together with a form upon which those who propose to be present are requested to intimate their intention. As already stated on several occasions the committee which is endeavouring to find accommodation for visitors to the meeting is encountering great difficulties owing to the fact that many of the large hotels in London are still occupied by various Government departments, and the others are very full. It is expected that private hospitality will be offered by members living in London, but its extent has not at present been ascertained, though steps are being taken to do so. Meanwhile Sir Arthur Stanley, Treasurer of St. Thomas's Hospital, has offered to place two wards recently occupied by military patients at the disposal of the Association for the accommodation of members who may be willing to take advantage of this offer. Breakfast will be served, and possibly dinner. In this way 60 beds will be provided, and Sir Arthur Stanley has promised, if the demand is sufficient, to place another ward of 30 beds at the disposal of the Association. He also intends to ascertain whether the British Red Cross Society can do anything in this direction at other places in London. It is important that any officers or others willing to take advantage of this kindly offer should communicate at once with the General Secretaries of the special clinical meeting, British Medical Association, 429, Strand, London, W.C.2.

MENTAL ABNORMALITY AND CRIME.

THE much debated problem of the appropriate treatment of offenders against the law whose conduct and appearance or frequent relapses furnish reasonable suspicion of mental abnormality, has recently been under the consideration of a committee appointed by the Birmingham justices. In its report many interesting recommendations are made as to procedure in such cases. The Prison Commissioners have promised to appoint at the Birmingham prison a whole-time medical officer skilled in mental cases, and the expert services of Dr. W. A. Potts have been secured as adviser to the Watch Committee. The committee recommends certain principles of procedure. The first is that the court of summary jurisdiction, on sufficient evidence, should direct a remand or adjournment for inquiry. The person may be either remanded in custody, without bail, to a special department of the prison under the observation of the prison medical officer, or remanded on bail if he voluntarily undertakes to submit himself for examination by the doctor to the court. The court would also have power to adjourn the summons on the understanding that the person charged will consult and confer with the court doctor in the interval of adjournment. The period for remand for the purposes of medical observation should not in the first instance exceed eight days, but might be extended if necessary for the completion of the doctor's report. It is next advised that at the conclusion of the remand or adjournment the case should be proceeded with in the light of the doctor's report. It is pointed out that as a rule fines are inappropriate in cases of delinquency in which mental abnormality can be traced. Imprisonment should only be imposed when the nature of the charge justifies it and the court is of opinion that a period of detention under medical supervision is the proper method of dealing with the case; in that event the person charged should be committed to that part of the prison set apart for the treatment of special cases. When mental deficiency is proved to have existed from birth, or from an early age, in a person charged with an offence for which he is liable to be imprisoned, the court would either order him to be detained

in an institution, or placed under guardianship, or direct a petition to be presented to the judicial authority under the Mental Deficiency Act, 1913. Probationary supervision for any period up to three years under the powers of the Probation of Offenders Act, carried out by one of the probation officers appointed for the purpose, is another novel expedient for dealing with certain weak-minded offenders. This will imply periodical examinations by the court doctor, submission to hospital or institution treatment when ordered by him, abstinence from intoxicating liquor, and, if necessary, residence in an institution or with a guardian selected specially for the particular case. It is satisfactory to find that the Birmingham magistrates, who were the first to establish children's courts, are now leading the way to a more extended and efficient system of probationary treatment, especially in the case of young offenders handicapped by mental or physical defect.

THE OLD MEDICAL FACULTY OF STRASBOURG.

STRASBOURG, the French spelling of which may be taken as an indication of the return to a former order of things, has been for centuries the seat of a famous medical school. In 1514, 1517, 1528, 1534, and 1533 a series of works on the medical sciences was printed there. The *Feldbuch der Wundartzenei* of H. von Gersdorff, or Schyllhaus, a burgess of Strasbourg, was published in 1517. In 1538 Jacob Sturm, the Stadtmeister, founded a Lutheran academy with a rector and eight professors, two of whom taught medicine, one dealing with theory, the other with practice. Within fifteen years of its foundation the academy had among its students three princes, twenty-four counts, and two hundred noblemen. In 1621 it was erected by the Emperor Ferdinand II into a university, and in that year it created two doctors. Their theses remind one of the controversies of the Strasbourg faculty about the stranger's nose recorded by Slawkenbergius as quoted in that veracious chronicle, *Tristram Shandy*. Andreas Schilling argued as to the truth of the common saying "New doctor, new graveyard," and Johannes Carolus debated the question whether a Christian physician may without offence to his conscience treat Jews, Turks, atheists, and enemies of their country. But the studies of Strasbourg were not confined to such futilities. Chairs of anatomy and botany were founded in 1652. From 1566 the bodies of executed criminals had been handed over for dissection and medicine was regularly taught. When the city was annexed by Louis XIV in 1681 the university retained its privileges, and under French rule the teaching of medical science continued to expand. In 1738 the professor of internal pathology was empowered to give practical teaching at the bedside, and thus a true medical clinic, which was the first after those of Leyden and Vienna, was instituted. Students were not only allowed to follow the visit, but themselves examined the patients and treated them under the direction of the master. Obstetric medicine was early studied, and the Strasbourg school became celebrated throughout Europe. In 1522 Eucharius Roessler published a handbook of midwifery, which is one of the oldest works of the kind. In 1561 there appeared a similar treatise by Ryff. Two centuries later a school of obstetrics was established in the civil hospital of Strasbourg under the direction of J. J. Fries; it was intended primarily for the teaching of midwives, but male students were also admitted. Materia medica was diligently studied, and the botanical garden of the city was long one of the richest in Europe. The university was suppressed in 1792, but two years later "schools of health" were established at Paris, Montpellier, and Strasbourg. They were primarily intended for the training of "officers of health for the service of the hospitals, mainly those for the army and navy"; later they were authorized to educate civilian students. The Strasbourg school was reorganized in 1803, and erected into a faculty of the Imperial University in

1808. Among the teachers who made Strasbourg renowned as a school of anatomy was Lobstein, among whose pupils was Goethe, who had entered the university to study law. The poet's daintier sense could not tolerate the sights and smells of the dissecting room, but he followed the other medical courses in 1770 and 1771. It was the Strasbourg faculty that first established the public teaching of histology in France; the Paris chair was not founded till 1862. Küss, professor of physiology from 1846 to 1870, was the last Mayor of Strasbourg, in which capacity he displayed the finest qualities as a patriot in the Franco-Prussian war. Sédillot, who was professor for nearly thirty years, still ranks as an authority among surgeons, and Eugene Köberlé occupies an honourable place in the history of ovariectomy. Villemin, Laveran, Mathias-Duval, and Lacassagne are among the glories of the Strasbourg school. After the war of 1870 some of the old teachers remained at Strasbourg and founded an "Ecole Libre de Médecine," which from November, 1871, to October, 1872, offered to students the means of finishing their curriculum or working till the faculty of Nancy was opened. The "free school" conferred degrees on seventeen students; these were the last French doctors created by Strasbourg. One of the last theses presented was that of Hoeffel on the old faculty. On that essay is based to some extent a history contributed by M. Pierre Lereboullet to *Paris Medical* of January 4th, 1919, which is the principal source of this article.

ACRIFLAVINE IN THE TREATMENT OF GONORRHOEA.

THE value of acriflavine in the treatment of gonorrhoea is the subject of a recent paper by Davis and Harrell of the Urological Institute, Johns Hopkins Hospital.¹ They point out that acriflavine, being highly diffusible, will penetrate the mucosa of urethra and bladder; that it is antiseptic in urine in higher dilutions than any other diffusible dye studied; that it inhibits the development of the gonococcus in culture in a dilution of at least 1 in 300,000, and, as shown by Fleming, has a peculiar affinity for leucocytes. Urethral injections of concentrated acriflavine cause slight smarting, which persists for an hour or more, but patients previously treated with protargol—a far less powerful antiseptic—say that acriflavine is decidedly less irritating. The most satisfactory concentration is found to be 1 in 1,000; it is as efficient as more concentrated solutions. No complication has followed the use of a solution of this strength, and smarting is almost negligible. When the anterior urethra is affected, about 3 c.cm. of 1 in 1,000 solution is injected into that part of the urethra and retained for five minutes. In cases with posterior infection, 15 to 30 c.cm. are injected through into the bladder and the urethra is distended. The fluid is retained in the urethra for five minutes and in the bladder till the next voiding. Injections should be given twice a day until all organisms have disappeared from the discharge, and then once a day until the patient is considered well. The authors found that organisms frequently disappeared from the discharge after a single injection and did not return. In the majority of cases they disappeared after two or three injections. In a few cases organisms reappeared, but continued treatment soon caused their disappearance. The discharge lessened, became thin and mucoid, and had usually disappeared by the fifth day. In cases of anterior and posterior urethritis the posterior infection usually improved before the anterior. Trigonal inflammation quickly subsided. That some acriflavine remained in the urethra for a considerable time is shown by the fact that the discharge at the end of twenty-four hours was of a brilliant yellow colour, and many of the leucocytes were well stained. The urine was definitely yellow and fluorescent even after thirty-six hours. Though in many cases the dye acted almost as a specific, occasionally it seemed without any effect whatever. The cause of

¹ *Journal of Urology*, vol. ii, 1918, p. 257.

this was not determined. The authors state that the average length of an attack of gonorrhoea under this treatment is distinctly less than with the usual methods.

OXFORD OPHTHALMOLOGICAL CONGRESS.

The Oxford Ophthalmological Congress will assemble at Keble College, Oxford, on the evening of Wednesday, July 9th next, and the meeting will be held on Thursday, July 10th, and Friday, July 11th. The first day will be largely devoted to a discussion on "Preventive Ophthalmology," to be opened by Colonel J. Herbert Parsons, A.M.S., consulting ophthalmic surgeon to the forces. Members intending to take part in the discussion are requested to give early notice to the honorary secretary, Mr. Bernard Cridland, Salisbury House, Wolverhampton. The second day will be given up to papers, demonstrations, and cases. It is hoped that members will make every effort to contribute to the success of the meeting with cases, specimens, new operations, or novelties of any kind. The annual general meeting will be held in the evening of Thursday, July 10th.

INFLUENZA.

In the week ending March 15th the death-rate from influenza declined still further, the provisional figures for the ninety-six great towns being 2,305 (previous week 3,218). The London deaths declined to 435 (597 in the previous week). Only two English towns showed a substantial increase over the previous week's returns—namely, Birmingham with 157 deaths as compared with 134 in the previous week, and Oldham, where the deaths increased from 18 to 33.

SIR WILLIAM PETERSEN, who has been Principal of McGill University, Montreal, since 1895, is laid aside by illness, and the Council of the University has appealed to Sir Auckland Geddes, who until the outbreak of war was Professor of Anatomy in the University, to accept the Principalship. The *Daily Express* of March 20th stated that he intends to do so.

Medical Notes in Parliament.

Ministry of Health Bill.

STANDING COMMITTEE.

THE first sitting of the Standing Committee to which the Ministry of Health Bill has been committed by the House of Commons was held on March 13th, under the chairmanship of Sir Archibald Williamson. Dr. Addison (President of the Local Government Board) attended during part of the meeting, though still suffering from the effects of his recent illness. Major Astor, Parliamentary Secretary to the Local Government Board, and Sir Kingsley Wood also represented this Department.

It was agreed, as reported in the *BRITISH MEDICAL JOURNAL* of March 15th, that the Committee should sit on Tuesdays and Thursdays from 11 to 1, and from 4 p.m. to 6 p.m. in the evening, subject to any change that might be deemed advisable.

CLAUSE 2. GENERAL POWERS AND DUTIES OF MINISTER IN RELATION TO HEALTH.

A short discussion was raised by Major McMicking, who thought that the powers should be more closely defined. Major Astor agreed to insert words which disposed of any apprehension that the Minister would have powers at large.

The Committee then dealt with several amendments designed to enlarge the duties specifically conferred on the Ministry. Mr. Jerson Steward moved to include the notification of venereal disease. Dr. Addison said that the Local Government Board already had power to make such notification compulsory; fuller use should be made of the powers now possessed, but nothing, he said, would be gained by the insertion of the amendment. It was withdrawn. Captain Barnett withdrew an amendment to insert the words "to spread information about diet and hygiene,"

after Major Astor had explained that this work was already being done by the Local Government Board.

Sir Philip Magnus raised a question as to the meaning of the words at the end of the clause: "and the training of persons engaged in health services." He asked that they should be struck out as they might be taken to signify that the Ministry of Health could interfere with the training for the medical profession. Major Astor gave assurance that there was no such intention, but only that the Minister should keep in touch with other bodies dealing with health matters. The phrase was amended to read "for the training of persons for health purposes," and was then agreed to.

Major Hills moved to add as a qualification to the clause: "Provided that nothing in this section shall compel any person to receive treatment who makes a statutory declaration that upon conscientious grounds he objects to medical treatment." His point was that no Act of Parliament could compel a form of treatment unless persons were willing to accept it. Dr. Addison said that the clause would deprive the department of elementary rights already possessed, which should not be taken away, as they were needed for many kinds of infectious diseases. The amendment was defeated by 33 votes to 14, and the clause was passed in the following form:

It shall be the duty of the Minister in the exercise and performance of any powers and duties transferred to him by or in pursuance of this Act to take all such steps as may be desirable to secure the effective carrying out and co-ordination of measures conducive to the health of the people, including measures for the prevention and cure of diseases, the treatment of physical and mental defects, the collection and preparation of information and statistics relating thereto, and the training of persons for health purposes.

CLAUSE 3. TRANSFER OF POWERS.

On Clause 3 (transfer of powers and duties to and from the Minister), Mr. Leslie Scott moved to add the transfer of "all the powers and duties of the Secretary of State under the Lunacy Acts, 1890 to 1911, and the Mental Deficiency Act, 1913." Major Astor explained that under the bill a Privy Council Order could be made for the transfer of "all or any" of the powers named, and adds that it was undesirable to require a complete transfer, as some of them affected the liberty of the subject. The amendment was withdrawn.

Poor Law.

The next discussion was on an amendment by Sir Alfred Warren for the immediate transference of the administration of the Poor Law to the Home Office. Sir Kingsley Wood, for the Government, gave assurances of its sympathy with the proposal to separate Poor Law administration from the work of the Health Ministry. The medical services of the Poor Law were, however, so entangled with the other health services that it would be impossible to separate them except in the course of time. If the amendment were carried the operation of the bill would have to be postponed. Sir Alfred Warren thereupon withdrew his demand.

Medical Research.

The principal debate of the afternoon arose on an amendment by Sir Philip Magnus for the transfer to the Ministry of the duties hitherto performed by the Medical Research Committee. Sir Philip thought it important that the Ministry should have under its own control a research department to which it could refer problems as they arose. Sir Kingsley Wood reminded the Committee that, inasmuch as it had been decided to have a separate bill for Scotland, any complete transfer was obviously impossible. Major Farquharson said that it would be unwise to take too limited a view of the functions of the Medical Research Committee; it would, he thought, have a wider scientific horizon if it were placed within the jurisdiction of the Privy Council than if it were attached to the Ministry of Health. At the same time the members of the House of Commons Medical Committee, of which he was secretary, desired that the Ministry of Health should have its own investigating department. Sir William Whitla expressed similar opinions, and Major Astor said that the Local Government Board already had powers for research, and exercised them. It was an error to assume, because transfer of the work of the Medical Research Committee was not included in the provisions of the bill, therefore medical research was excluded from the operations of the Ministry of Health. It was exceedingly desirable that there should be a body able to maintain research on a broad scale, unlimited by areas, and that the Ministry of Health should also be able to make any investigation if thought fit. He agreed that at a later stage words should be inserted in the bill to make plain that the Ministry of Health had power for "the initiation

and direction of research." This was the phrase which Sir Watson Cheyne had suggested should be introduced in Clause 2, but on the advice of Dr. Addison the matter was not taken up at that point. Sir Philip Magnus said that as the bill originally stood there was no ground for the assumption that such a reservation was made for the Ministry of Health, but after the satisfactory statement by Major Astor he would withdraw his amendment.

Medical Inspection of School Children.

A large part of the second sitting of the committee, which took place on March 18th, was occupied by the discussion of an amendment by Mr. Godfrey Locker-Lampson, which was eventually adopted without a division, in spite of the opposition of the President of the Local Government Board and the Minister of Education. The bill (Clause 3) provided for the immediate transfer to the Minister of "all the powers of the Board of Education with respect to attending to the health of expectant mothers and nursing mothers, and of children who have not attained the age of 5 years and are not in attendance at schools recognized by the Board of Education." The second part of the clause authorized the transfer at some subsequent date, by Order in Council, of "all or any of the powers and duties of the Board of Education with respect to the medical inspection and treatment of children and young persons." The amendment was to transfer these powers at once.

The discussion had been started near the close of the sitting on March 13th, and Mr. Fisher, the first speaker on March 17th, stated the Government objections to the amendment. It would, he thought, be very difficult and inconvenient, both from the point of view of health and of education, if school medical services were cut out of the educational machinery and transferred to the Ministry of Health. On the other hand, it would be equally injurious if the school medical services were not under the suzerainty and direction of the Ministry of Health, and if it were not reinforced by the weight of the authority properly belonging to that Ministry. In every Education Committee there was a section mainly interested in the schools from the physical side, and it would be regrettable if the interests of education and of the physical side of training were separated. For the purposes of unity he attached importance to the fact that Sir George Newman was Chief Medical Officer of the Board of Education, and was to be Chief Medical Officer of the Ministry of Health.

Mr. Locker-Lampson said that it was important that children between 5 and 15 or 16 years of age should come under the care of the Ministry of Health. In the matter of teeth the Board of Education had done very little. Mr. T. Thomson thought that the difficulties foreshadowed, although they might be great at the central departments, were largely imaginary as regards the local authorities. As matters stood, more regard was likely to be paid to attendances than to health. The conflict of interests was against the interest of health. Sir George Newman in his report had spoken of the slowness and laxity of the education authorities. Sir Samuel Hoare submitted that it would be better for education to make the transfer, thus freeing the education rates from health charges.

Sir Philip Magnus urged that the arguments used by Mr. Fisher went to the root of the bill. The object of the measure was to take over health services from the various offices of state, to consolidate them, and prevent them from overlapping. He saw no reason why physical training should not remain part of the work of the education authorities. The amendment asked only for the transfer of the duties of medical inspection and treatment of children. As for the proposal that the transfer should be subject to future decision by Order in Council, his view was that such transfer was either right or wrong, and should be determined now. Sir Ryland Adkins spoke in the same sense.

Dr. Addison reminded the Committee that there were two categories of services enumerated in the bill—those to be transferred forthwith, and others, all or any of which it should be lawful to transfer hereafter. He asked the Committee not to burden the Ministry at once with all these functions. Some services could not be transferred without great difficulty. For instance, how could physical training be divorced from medical inspection? Some of the health considerations must, he thought, be left to the people concerned with the life of the schools.

Mr. T. Simm, speaking as a representative of a colliery district, said there was need that the bill should be fully clothed. There should be one authority, and not two doctors attending to the same subject in different periods of the twenty-four hours. Sir Watson Cheyne confessed to much disappointment at the speech of Mr. Fisher. Nothing was said in Mr. Locker-Lampson's amendment as to time. Its point was not that the transfer should be

made at once with inconvenience, but that the transfer should definitely be amongst the provisions of the bill. With regard to what had been said about physical training, he was disposed to take a different view from some other speakers. He was not quite sure that he would trust the schoolmaster to decide as to physical training. He had known cases in which boys had been expected to resume it when not fully recovered from operations.

Mr. Fisher asked the Committee to appreciate that the medical services had been one of the most successful branches of Education Board administration. Under the Education Act of 1913 special stress was laid on physical education. The Board encouraged the appointment of organizers of physical training, and a direct grant was to be made in aid. The type of men they were hoping to get were men who had some knowledge of anatomy. He thought this was a case for "leaving well alone," but, to meet the Committee, he was willing to propose that the transfer should be "subject to any exceptions which might be made by Order in Council."

Dr. Addison, replying to criticisms, said that the reason the bill was framed in its present form was that it was considered to be the most practical and business-like proposal that could be made. If the amendment were carried it would be his duty to review the situation between now and the report stage, and, if necessary, to move on the report stage the insertion of words to meet difficulties which he feared might be involved.

The amendment was then put, and, an overwhelming majority declaring for it, a division was not taken.

Midwives.

Major Hills moved to omit from the powers to be transferred immediately those of the Privy Council under the Midwives Acts of 1902 and 1918, his fear being that the rights of appeal to the High Court would be thus abrogated.

Major Astor, for the Government, gave assurance that this would not be the case. Parliament had given to the local authorities the direction, employment, and payment of midwives. The Ministry of Health succeeding the Local Government Board would be more qualified to deal with these local authorities than the Privy Council.

Major Hills withdrew his amendment.

Factory Inspection and Industrial Diseases.

Sir Philip Magnus then proposed the transfer to the Ministry of Public Health of the powers and duties of the Home Office relating to public health, including the sanitary condition of factories and the investigation and prevention of industrial diseases. He thought that the investigation of diseases incidental to factory work might be undertaken by the Medical Research Committee, which he hoped would be in operation under the Ministry of Health.

Lord Henry Cavendish-Bentinck thought that the supervision of the health of the adolescent worker was as important as the responsibility for the health of the children, and should be undertaken by the Ministry.

Mr. T. Griffiths urged that it was undesirable to overload the Ministry of Health. Dr. Addison said it was clearly the duty of the Ministry of Health to take cognizance of industrial conditions, but the proper authority ultimately to take responsibility for industrial conditions would be the Ministry of Employment, which would be developed from the Ministry of Labour. Otherwise the Ministry of Health would get involved in controversies as to hours of working, conditions of employment, and so forth. Sir Philip Magnus, on the explanation, withdrew his amendment.

Pensions.

The bill proposed that the transfer of the duties of the Minister of Pensions with respect to the health of disabled officers and men after they have left the Service, should be made subsequently by Order in Council. Sir Watson Cheyne suggested that the transfer should take place at once.

Dr. Addison said that at present it was impossible to disentangle pensions from medical treatment. He would favourably consider on a later clause whether an amendment with a time limit could be introduced. Sir Watson Cheyne expressed himself as satisfied.

Defective Children.

On an amendment to transfer to the Ministry the powers of the Board of Education with respect to mentally defective and physically defective children, Mr. Fisher pointed out that the amendment passed on the motion of Mr. Godfrey Locker-Lampson gave power to deal with these children. It was difficult to define where the frontiers of

education ended and the frontiers of health began. He suggested that the matter should be left over to the report stage to enable him to confer with Dr. Addison, and this was agreed to.

Lunacy and Mental Deficiency.

The words in the bill with reference to the transfer of the powers of the Home Secretary as to lunacy and mental deficiency were replaced, on the motion of Major Astor, by the words "enactments relating to lunacy and mental deficiency."

The Committee adjourned until March 20th.

The Release of Doctors and Nurses.—In reply to Major Molson and to Lieut.-Colonel Weigall, Mr. Churchill, on March 18th, said he was informed that the delay in the more rapid demobilization of medical officers was in the main due to the fact that since the armistice military hospitals had had to deal with large numbers of repatriated prisoners of war, the greatly increased number of enemy prisoners, and with hospital population which was transferred to military hospitals both at home and abroad on the closing of auxiliary American hospitals and those belonging to the Dominions. It was also stated that the large number of civilian medical practitioners released by the closing of the other hospitals mentioned was not included in any returns of the numbers demobilized. He did not consider these reasons sufficient to explain the proportion of doctors and soldiers demobilized respectively. He had therefore given directions for a prompt and more general demobilization of medical officers. The Minister of National Service had agreed that the restricted procedure of selection of individuals for release should be discontinued. There had not been much time for the fruits of this measure to become apparent, but the rate of release, both of doctors and nurses, had greatly increased in the past week. About 700 doctors had been released.

Cerebro-spinal Fever at Cambridge.—In answer to Sir Clement Kinloch-Cooke, Dr. Macnamara, on March 18th, said there had been an outbreak of cerebro-spinal fever among the young naval officers at Cambridge. Naval officers went to Cambridge on January 31st. On February 5th there were 60 cases among them of influenza, of whom 54 were treated at one ward in No. 1 Eastern General Hospital. These were all making a good recovery until February 13th and 14th, when 8 developed cerebro-spinal fever. There was then no cerebro-spinal fever in Cambridge, and the disease was apparently contracted from a "carrier." Two other cases developed cerebro-spinal fever; and the infection of one was traced to a previous case; the other was contracted outside Cambridge. Of the 10 cases 5 had died. All the cases had been isolated and nursed in the Military Hospital at Cambridge. The Medical Research Committee had supplied the special serum used in the treatment. The epidemic was considered to be well in hand.

Salvarsan and "Substitutes."—Mr. Pratt, on March 18th, stated for the Local Government Board that the remedies approved by it as substitutes for salvarsan were manufactured under licences issued by the Board of Trade allowing the manufacturers to employ the processes protected by patents used in the manufacture of the original salvarsan. The presumption, therefore, was that the drugs produced by these manufacturers were similar to the original article. Before being placed on sale, all the approved substitutes were tested on behalf of the Medical Research Committee. The Salvarsan Committee would shortly issue a report. In reply to a further question, Mr. Pratt stated that a special committee was appointed in 1918 by the Medical Research Committee to consider, among other matters, the value of salvarsan and risks attending its use. The Committee comprised representatives of the medical departments of the Admiralty and War Office, of the Medical Research Committee, and of the Local Government Board. The Board had circulated a memorandum by the Salvarsan Committee in which a definite opinion as to the value of salvarsan was expressed.

Gratuities for Dental Officers.—Mr. Churchill, on March 13th, said that a gratuity of £50 for each year or part of a year had been approved for army dental surgeons.

Farm Colonies for Shell Shock Cases.—Sir L. Worthington-Evans, replying to Sir M. Barlow, said that arrangements for the treatment of shell shock cases on farm colonies were being made. At present disabled soldiers suffering from shell shock were admitted to military neurological hospitals, where in nearly every case land was available and was utilized for this treatment.

Training of Defective Children: Latest Statistics.—Mr. Fisher informed Mr. Sugden, on March 10th, that accommodation at special schools was at present provided for about 15,000 mentally defective children and for about 5,500 cripples. No reliable figures were available as to the additional accommodation required, but new provision might be needed for about 15,000 mentally defective, and at least as many cripples. In considering schemes submitted under the Education Act the Board would have regard, amongst other things, to the adequacy of the provision proposed to be made for these types of children. As from April 1st grants would be payable to local education authorities at the rate of one half of their net expenditure on schools for these children. These grants would represent a substantial increase over those at present generally payable. Mr. Fisher also said he would consider any suggestion for seeking the aid of trade unions to continue the training of mentally and physically defective children when they left special schools, so that they might enter industries after a proper apprenticeship.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON LIEUTENANT D. L. LEWIS, R.N.

Surgeon Lieutenant David Llewellyn Lewis, R.N., died at Inverness on March 2nd, aged 29. He was educated at the London Hospital, and took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1914, after which he acted as assistant medical officer of Bethnal Green Infirmary. He took a temporary commission as lieutenant in the R.A.M.C. on August 13th, 1914, a few days after the war began, but subsequently resigned, and joined the navy.

ARMY.

Died on Service.

CAPTAIN H. C. R. CHONDBURY, I.M.S.

Captain H. C. R. Chondbury, I.M.S., was reported as having died on service, in the casualty list published on March 13th. He received a temporary commission as lieutenant in the I.M.S. on August 25th, 1915, and was promoted to captain after a year's service.

DEATHS OF SONS OF MEDICAL MEN.

Godding, Frank C., son of Surgeon-General Godding, C.B., R.N., died at Brisbane on February 27th of disease contracted on active service at Anzac, in Gallipoli.

Owen, Norman Howell, Captain 5th Battalion Rifle Brigade, third son of Dr. J. Morgan Owen, J.P., of Fishguard, South Wales, died of pneumonia at the Military Hospital, Sheerness, on March 1st, aged 30.

Parsons, Guy Fowell, Lieutenant Commander R.N., of H.M.S. *Nigella*, sixth son of Dr. Charles Parsons of Tunbridge Wells, late of Dover, and Treasurer of the British Medical Association, 1896-98, died at Portsmouth on March 6th.

Payne, Thomas Algernon, Warrant Telegraphist, Royal Naval Reserve, third son of Dr. A. A. Payne of Sheffield, died of pneumonia in London on February 28th, aged 27. Before the war he was in the service of the Marconi Company, and joined the navy as a wireless operator on August 4th, 1914. He served at first on H.M.S. *Bacchante* in the North Sea, then on H.M.S. *Bramen* and H.M.S. *Montague* round the Scottish coast. He subsequently went to German East Africa on H.M.S. *Princess*, and lastly served in H.M.S. *Macedonia* in the Atlantic. He was demobilized on February 20th, just a week before his death.

HONOURS.

COMMENDED FOR SERVICES.

The following are among the names brought to the notice of the Secretary of State for War for valuable services rendered on the occasion of the sinking or damage by enemy action of hospital ships, transports, and store ships, and for valuable services rendered on hospital ships:

Lieut.-Colonel (temporary Colonel) R. S. H. Fuhr, C.M.G., D.S.O., R.A.M.C.

Lieut.-Colonels: I. B. Emerson, R.A.M.C.(R.P.), P. B. Haig, I.M.S., C. W. S. Magrath, R.A.M.C., C. Milne, I.M.S., E. W. Sibery, R.A.M.C.

Majors: A. Bird, R.A.M.C.(T.F.), F. C. Whitmore, R.A.M.C.(T.F.).

Captain (acting Major) H. F. Everett, R.A.M.C.(T.F.).

Temporary Majors: W. G. K. Barnes, R.A.M.C. (formerly Deputy Surgeon-General R.N.), J. A. Devine, D.S.O., R.A.M.C., T. M. Kendall, R.A.M.C., R. Wilson, R.A.M.C., S. W. Woollett, R.A.M.C.

Temporary Captain (acting Lieut.-Colonel) G. W. Milne, R.A.M.C.

Temporary Captains: D. J. Jones, R.A.M.C., H. T. L. Roberts, R.A.M.C., W. V. Robinson, R.A.M.C., W. G. Silvester, R.A.M.C., A. G. Southcombe, R.A.M.C., W. H. Stott, R.A.M.C., T. D. Webster, R.A.M.C.

C.I.E.

The Companionship of the Order of the Indian Empire has been conferred upon the following medical officers in recognition of services in, or in connexion with, the military operations in Mesopotamia:

Lieut.-Colonel Philip F. Chapman, I.M.S.

Majors and Brevet Lieut.-Colonels: Henry J. Crossley, R.A.M.C.; James D. Graham, I.M.S.; William H. Hamilton, D.S.O., I.M.S.

Major (temporary Lieut.-Colonel) Cuthbert A. Sprawson, I.M.S.

D.S.C.

The Distinguished Service Cross has been conferred upon Surgeon Sublieutenant Arthur A. Osman, R.N.V.R., for services with the destroyers of the Grand Fleet flotillas between July 1st and November 11th, 1918.

FOREIGN DECORATIONS.

Further lists of decorations and medals awarded by the Allied Powers to the British forces for distinguished services during the course of the campaign have been issued. The following medical officers have received the decorations indicated:

Conferred by the President of the French Republic.

Légion d'Honneur—Croix de Chevalier: Lieut.-Colonel (temporary Colonel) Harold Collinson, C.M.G., D.S.O., R.A.M.C. (T.F.), Major (temporary Lieut.-Colonel) David Rorie, D.S.O., R.A.M.C. (T.F.), Captain (acting Major) James M. Smith, M.C., R.A.M.C. (T.F.).
Croix de Guerre.—Colonel Arthur E. Snell, C.M.G., D.S.O., C.A.M.C.

Conferred by the King of Italy.

Order of the Crown of Italy—Officer: Lieut.-Colonels Robert W. Knox, D.S.O., I.M.S., John Kyffin, R.A.M.C. (T.F.).
Croce di Guerra.—Temporary Captain Thomas W. Mason, R.A.M.C. (T.F.).

Conferred by the King of Rumania.

Order of the Star of Rumania.—Surgeon Vice-Admiral Sir William H. Norman, K.C.B., Director-General Medical Department, R.N.

Order of the Crown of Rumania.—Officer: Surgeon Lieutenant Commander Gilbert B. Scott, D.S.O., R.N. *Chevalier:* Surgeon Lieutenant William L. Glegg, D.S.O., R.N.

Conferred by the King of the Belgians.

Order of the Crown of Belgium.—Commander: Surgeon Vice-Admiral Sir W. H. Norman, K.C.B., Surgeon-General J. J. Dennis, C.B., R.N. *Officer:* Surgeon Commander J. O'Hea, R.N.

THE ARMY OF THE RHINE.

THE Secretary of the War Office has announced the cavalry regiments and infantry battalions comprised in the Army of the Rhine, together with the total numbers of all units and formations, including those on the lines of communication. The medical units are as follows:

3 cavalry field ambulances	10 casualty clearing stations
30 field ambulances	2 mobile x-ray units
11 sanitary sections	2 mobile dental units
2 " "	5 stationary hospitals (400 beds in each)
6 motor ambulance convoys	10 general hospitals (1,040 beds in each)
1 mobile bacteriological laboratory	8 sanitary squads
1 mobile hygiene laboratory	2 base dépôts of medical stores.
2 advanced dépôts of medical stores	

South Australia.

(From our Special Correspondent.)

MEDICO-POLITICAL.

THE State Parliament had a short session in 1918, during which two matters of interest were discussed. The Hon. John Lewis, M.L.C., sought to make cremation compulsory, but, as is not surprising, his motion was lost. The Hon. J. H. Cooke secured the appointment of a Select Committee to investigate the condition of the city cemetery. This was a convenient opportunity for taking evidence in favour of cremation, with compulsion in cases of cancer, of phthisis, and of infectious diseases generally. The efforts of these intelligent laymen may not bear immediate fruit, but will be of a high educative value. The cemetery witnesses, quite unnecessarily as I think, divulged some gruesome evidence, that showed that the skeletons of deceased aboriginal monarchs are still valued for anthropological purposes, and that the professional methods of Mr. Jerry Cruncher are not wholly extinct.

THE FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

The Committee at its next session will have many matters of importance to discuss. One will be the project of a benevolent fund for the benefit of medical officers and their dependants who have in consequence of the war suffered in mind, body, or estate. The aim is to raise a capital amount of £75,000. No evidence has yet been adduced as to the absolute necessity for such a fund, which is, of course, designed to supplement federal pensions and the State funds already in existence for the same purpose, but, should the evidence be forthcoming, those who for various reasons have been unable to serve will be

very ready to subscribe and help to make it a success. Subscriptions are to be sought only from the medical profession.

The matter of the "nationalization" of the profession is also much in the air, and in some of the States measures may be brought forward at any moment, so that it has been thought well for us rather to anticipate the introduction of any such measures, and to meet them, not in a spirit of opposition, but of constructive assistance. In relation to this matter a very able paper has been written by Dr. Hone (*Medical Journal of Australia*, November 30th, 1918), who lays stress on the advantages that should accrue if the Federal Government were to inaugurate schemes for research and the establishment of laboratories in country centres possibly in connexion with infectious hospitals. Dr. Hone would like, too, to see a wider scope given to those who deal with the prevention of disease.

THE MEDICAL SCHOOL.

It has been announced that Sir Edward Stirling and Dr. Watson wish to be relieved of their offices as professors of physiology and anatomy respectively at the end of the year 1919. Both gentlemen are about 70 years of age and both have served the university for a third of a century or more; both will be greatly missed. Whether the University Council will fill the vacancies by the appointment of Australians, or whether the salaries offered will be a sufficient inducement for first class men at home to apply, I cannot say, but the opportunity for reorganization of the medical school is one of which the council should take advantage.

THE SOUTH AUSTRALIAN BRANCH.

There is little to say of the Branch. Dr. J. C. Verco was re-elected president. The influx of returning members now that peace is in sight will give a great stimulus to the work, both scientific and administrative.

THE LUNATIC ASYLUM.

The city coroner some three months ago began to hold an inquest on every case of death at the Mental Hospital: he threatened to commit the overworked solitary resident medical officer (there are 1,000 patients), found all sorts of real or imaginary illegal detentions, and attracted the attention and the condemnation of Parliament and the press. A special committee appointed to investigate matters has just issued its report, showing that there were no real abuses—merely an inadequate staff, obsolete appliances, and insufficient accommodation for attendants.

Ireland.

HOURS AND PAY OF HOSPITAL NURSES.

AN agitation is being started in Dublin to improve the conditions for nurses, specially as regards their pay and hours of work. A pamphlet calling attention to the subject has been printed and widely circulated. A good deal of what is said in it is true, but some of the statements are exaggerated. For instance, it is stated that the hospital nurse has an eighty-three hour week, on another page mention is made of a nurse's fourteen hour day, and it is said that on Sunday she must work just as hard as on other days. This is certainly not true of the majority of Dublin hospitals, and it seems a pity that a good cause should be marred by exaggerations. A most reasonable complaint is that the remuneration of a trained nurse is too small. The salaries paid to staff nurses and sisters in the Dublin general hospitals vary from £28 to £50 a year, the average probably being between £35 and £40. Another complaint is that after nurses have paid an entrance fee and trained in a hospital for two or three years, they are forced to work on the private staff for another couple of years, earning money for the hospital before they receive their certificate. The whole matter is being seriously considered by the boards of the general hospitals, but they are all heavily in debt. The Governors of Dr. Stevens's Hospital at their last meeting decided that the number of hours a nurse remained on duty in the wards should be reduced, that the salaries of probationers, staff nurses, and sisters should be substantially increased, that the entrance fee should be

abolished, and that nurses should not be bound to the service of the hospital after obtaining their certificate of three years' training. The president of the Irish Nurses' Association has written to the press admitting that nurses are overworked and underpaid, but states that before they can be better paid or their hours of labour shortened, the hospitals must either close a proportion of their beds, or get more money. A public meeting of the Irish Nurses' Association is to be held, at which proposals will be submitted for improving the conditions under which nurses at present work.

Correspondence.

SECRETARIATS.

SIR,—It is long since I have troubled you with correspondence. Since you took to censoring my letters, I have been loth to burden a depleted war-time staff with the task of extracting from my letters any little spice of pepper or ginger that may have inadvertently found its way into them. In the words of the Psalmist, "I held my tongue, and spake nothing: I kept silence, yea, even from good words; but it was pain and grief to me." But I cannot refrain from endorsing Lieut.-Colonel Henry Smith's letter on the Germanization of the medical profession. Over the office door of every typical official might be inscribed the words of the poet:

LEAVE ME, LEAVE ME TO REPOSE.

If he had possessed energy, initiative, and courage to fight for his own hand, he would not have chosen the path of life that leads to the summit of ambition in the snug berth, followed by the pension; and his greatest bugbear is the man who wants to innovate. As Lieut.-Colonel Smith points out, the dull man surrounds himself with duller men than himself. He cannot endure the silent reproach that he sees in the exertions of the energetic and capable. Whatever energy he has is concentrated upon the effort to elude responsibility; the path trodden smooth by the feet of his predecessors is the path of ease and safety, and nothing will induce him to swerve from it.

In my early days I was myself told in plain terms when applying for a subordinate post, "No, I am not going to have under me an abler man than myself." I respected and admired the official's candour, and we subsequently became fast friends; but though he was undoubtedly right from his point of view in the individual case, and saved himself from much discomfort and me from losing a good friend, the principle is wrong.

Later in life I was one of a committee that was to appoint a man to an important post. The qualifications of one candidate, his record, and his achievements, were indisputably superior to all the rest, but a whisper went round that he did not get on with his colleagues; and after this he was among the "also ran."

If every dull man chooses duller men for subordinates, and these, when they attain promotion, choose duller still for their staff, what unfathomable depths of dullness will not be reached at last! If I may trust my own observation, the danger is not imaginary.

Give the official a form to fill up, a return to make, a schedule to compile, a document to minute, and he is a happy man, and looks forward to the time when he shall have reached such a position of authority that he can devise new forms for his subordinates to fill, new returns for them to make, new schedules to compile, new kinds of documents to minute.

We are told that in a certain Eastern country the doctor who follows orthodox practice is safe, whatever the fate of his patient. He who innovates is left alone if his patient recovers, but if the patient dies the doctor is immediately put to death. I do not say that a Government Department is always or necessarily opposed to innovations. It is not. When an innovation is so thoroughly proved to be beneficial that it is universally adopted, the Government Department concerned will approve of it and recommend it, and will show that the improvement is due to its own fostering care. It meets the inventor and discoverer with a fair offer. It says, "You take the trouble, you spend the money, you take the risk, and we will take the credit. As long as you are struggling with your difficulties we will

thwart and obstruct you in every possible way. When your discovery is successful we will belittle it and sneer at it until it is established beyond the possibility of cavil. Then we will take all the credit for it, and you can go hang!"

This is the oft-repeated history of the action of Government Departments towards discoverers and inventors; and, as we see in Germany, Governments and dynasties may fall in ruins, but Government Departments live on and preserve their traditions, which are the same in all countries and in all times. If the medical profession chooses to become bureaucratized, well and good; but it should understand what it has to expect.—I am, etc.,

Parkstone, Dorset, March 15th.

CHAS. MERCIER.

MINISTRY OF HEALTH BILL.

SIR,—I understand that the Ministry of Health Bill does not of itself create any new system of health control, but aims at co-ordinating the various functions of these many departments so that now, or at some not very remote future, the policy of the single front may characterize our health administration. It is not, therefore, to the point now to discuss the many developments which may arise from the Ministry of Health, but rather to know whether the machinery which is being set up under the bill is of such a character as to give the best possible chance of safeguarding the national health. Let us consider this matter by reference to another department of State such as the Admiralty. The head of this department may or may not have special technical experience, but he must have as his advisers the finest experts in naval matters, and unless this were done, and unless he were bound to consult these technical advisers in every step of naval policy, none of us in time of national danger could sleep calmly in our beds. In the question of national health we are dealing with subjects infinitely more technical and obscure than those which concern the Admiralty, and the nightmare of disease is never absent; have we, then, any guarantee that the highest professional guidance will be at the nation's disposal, and that the Minister of Health will have associated with him a body of professional advisers after the type of the Admiralty Board? This is a matter which the medical profession, as the trustees of the health of the community, are bound to inquire into, and a definite answer should be forthcoming. Happily we have at the head of the Local Government Board a medical man, and we may expect him to see this matter in its true light. It would, however, I am sure, allay a great deal of uneasiness if we could be assured in plain and unmistakable language that the nation's health will be no less effectively directed in the future, whoever might be the Minister of Health, if such there is to be, than is the case with that which is usually spoken of as our "first arm of defence."—I am, etc.,

Harpenden, March 12th.

CHARLES F. HARFORD.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—Mr. Thomson Walker's use of the term "catheter infection," which occurs three times in his letter published in the JOURNAL of March 15th, is somewhat misleading. It suggests that every infection of the bladder in paraplegic patients comes about from catheterization, and, conversely, that if the catheter is not used the bladder remains free from invasion. Neither of these propositions is true. I have seen purulent urine withdrawn by the first catheter passed, a couple of days after the patient had been wounded. I venture to say that I never saw a paraplegic patient whose bladder functions had been in abeyance for more than a day or two, with sterile urine, whether a catheter had been passed or not.

But there are all grades of cystitis, just as there are all grades of bedsores; indeed, the two conditions are somewhat comparable. Whilst, however, there is no form of treatment which will either prevent the infection of a paralysed bladder, or render sterile the urine in it, the degree of the cystitis can be controlled by various means, of which suprapubic cystotomy is one. Cystitis in a paraplegic patient can only be cured by the return of functional activity of the bladder, either voluntary or reflex. If neither of these forms of functional activity can be

restored, nothing can prevent the ultimate fatal termination from pyelonephritis.

One advantage of cystotomy is that it facilitates the cleansing of the bladder by mechanical means. Further, when septic urine is no longer contained under pressure in a closed bladder, not only is ureteral dilatation avoided, as Thomson Walker has pointed out, but toxic absorption is diminished. With the lessening of toxæmia, the reflex activity of the spinal cord is increased, as Head and Riddoch have shown; with the return of functional activity of the bladder, the cystitis tends to clear up.

But when the advantages of the operation are being reviewed, it must be remembered that the state of a paraplegic patient in a base hospital with a suitable tube passing through an otherwise watertight suprapubic opening, is very different from one with a leaking suprapubic opening from which the urine flows over the hips and soaks the bedding, who is being passed down the line from hospital to hospital. It was the state of such patients in the earlier months of the war, which very properly led to the abandonment of suprapubic cystotomy as a routine measure at the clearing stations.

Mr. Thomson Walker (February 15th) states that in the hands of American surgeons the plan of abandoning the bladder to passive overflow (assisted by massage) has been followed by good results, namely, the absence of urinary infection. Colonel Forbes Fraser (March 8th) writes of the similar plan of emptying the bladder by "expression" as "simple and satisfactory."

Both these statements, if true, are capable of proof, and the importance of the matter is sufficiently great to justify the hope that such proof will be forthcoming.—I am, etc.,

London, W., March 18th.

PERCY SARGENT.

THE TREATMENT OF VENEREAL DISEASE.

SIR,—In his very appreciative comment on the article by Surgeon Commander Boyden and me in the *BRITISH MEDICAL JOURNAL* of February 8th, Sir Bryan Donkin urges that "this matter [the prevention of venereal disease] should be fully considered by a responsible body of medical experts before any public scheme is adopted to bring this necessary sanitary measure to the knowledge of the civilian community in a practical manner."

The same suggestion was recently made in the *Times* by Sir Bertrand Dawson. Doubtless such a body of experts will ultimately meet. But its labours would be assisted if an antecedent light were shed on one point—the action of calomel, a drug which has been, and still is, more widely used, not only for the cure but also for the prevention of venereal disease, than any other.

There can be no doubt as to the action of potassium permanganate and other active antiseptics. They are antiseptics because they are soluble poisons. Being soluble they are brought into intimate contact with the micro-organisms of disease, which are thus destroyed. But calomel is quite insoluble. If, then, it is an antiseptic, its action is mysterious without parallel.

We know, of course, that the introduction of calomel within the tissues, whether by the mouth, by intramuscular injection, or by inunction, tends to destroy the spirochaete of syphilis. But is it calomel that acts in this way? The mercurial compound becomes soluble, for its action extends far beyond the site of introduction. It seems evident, therefore, that the calomel undergoes a chemical change. Possibly it takes up another atom of chlorine and it is transformed into perchloride, or possibly it becomes an albuminate.

If calomel, as such, is not antiseptic, if it becomes an antiseptic only after it has undergone a chemical change within the tissues, then, plainly, its rôle is not to prevent but to cure disease—it may be disease which has been contracted only a few hours previously, but still actual disease. It is claimed, doubtless, with truth, that calomel cream rubbed on the penis and injected into the urethra tends to prevent both syphilis and gonorrhoea. But it is at least conceivable that the action of the cream is then purely mechanical, that the vehicle in which the calomel is suspended cleanses the surface of the penis and plugs the urethra. It is known that simple washing with soap and water, or water alone, is, in lack of more certain means, an excellent preventive of venereal disease. The somewhat higher proportion of failures to prevent venereal

disease which follows the use of calomel, as compared to the almost complete prevention of disease which follows the early use of an active antiseptic, would seem to indicate that calomel acts rather as soap and water does than as an antiseptic.—I am, etc.,

Southsea, March 14th.

G. ARCHDALL REID.

MALARIA IN ENGLAND.

SIR,—Is it not time that some action was taken to deal with the problem of malaria in England? That it has been made a notifiable disease is certainly important, but it falls far short of meeting the urgent need of preventing and checking the disease.

There are at least two known mosquito carriers in England, and in several areas malaria is endemic; probably there are many more districts which have not yet been defined.

Where antimalarial precautions have been taken, they in most cases hardly come up to the standard recognized as efficient by those who have had actual practice in anti-malaria work. At the moment men suffering from active malaria are being dispersed all over the country. Few practitioners have had experience of malaria, and fewer still understand the treatment of the severer types.

During the recent cold spell cases of cerebral malaria have occurred. If adequately treated such cases recover, but unless the practitioner attending recognizes the condition to be malaria, and not one of the many diseases which produce cerebral symptoms, the patient will die.

I submit that every possible precaution should be enforced to prevent the spread of malaria, and that steps should be taken to provide adequate treatment for those suffering from the disease.—I am, etc.,

February 27th.

INFECTED.

THE EPIDEMIOLOGY OF INFLUENZA AMONG WORKERS.

SIR,—With reference to the note on this subject in your issue of March 1st, and incidentally with that on the Imperial College of Science, the following observation may be of interest: When I was on the metallurgical staff of the Royal School of Mines (Imperial College of Science) many years ago, I had to conduct the metallurgical students over the smelting works of South Wales. In those days the reverberatory process of copper smelting was almost solely employed at Swansea, and the atmosphere seemed little else than sulphur fumes at times. I was constantly told that consumption was practically unknown amongst the copper smelters. I naturally at first attributed this, like everybody else then, to the SO_2 , etc., in the air. We were accustomed, however, to go on to the smelting works at Dowlais also, where the old open-topped iron blast furnaces were still in use. Here I was told that the men charging the furnaces—at the top, that is—frequently got consumption, but not those at the bottom, engaged in tapping the furnaces. They worked in fumes. These were not sulphur fumes, but they contained sulpho-cyanides, and as these would have been present at the copper works also, it occurred to me then—and still does—that possibly in the use of sulpho-cyanides there may be found at least a partial cure for phthisis.—I am, etc.,

Bristol, March 2nd.

E. J. BALL.

TREATMENT OF ACUTE GONORRHOEA.

SIR,—I read Major Fogarty's article (*BRITISH MEDICAL JOURNAL*, March 1st, p. 245) with much interest. I do not use either germicides or massage, but drain the urethra with gauze soaked in a lymphagogue.

The gonococcus is an anaerobic organism, and so cannot live in healthy serum; it penetrates easily the urethral mucosa, so that if a substance could be found which would produce a flow of fresh serum it would serve a double purpose—first, by washing out the cocci from the deeper tissues, and then by producing a soil inimical to their growth.

Sir A. Wright's lymphagogue is given the credit of possessing this property. It is composed of sodium chloride 5 per cent. and sodium citrate 0.5 per cent. At first I irrigated the urethra with the solution, but the results were not very promising, probably because the solution was not in contact long enough to produce

osmosis; I then tried instillation and sealing up the meatus, but this was not satisfactory. I therefore introduced a gauze drain soaked in the solution. The urethra is irrigated with the solution, and then I introduced through a Luy's urethroscopic tube a long strip of sterile gauze soaked in the lymphagogue. The tube is withdrawn and the gauze left behind. The danger of introducing a tube into the acutely inflamed urethra was my difficulty, but by selecting the cases and taking precautions I was fortunate enough to avoid complications and to obtain very satisfactory results.

I have not ventured to treat posterior urethritis by gauze draining, and, unlike Major Fogarty, would hesitate to pass a tube into the posterior urethra, or even leave behind a gauze drain gripped by the compressor muscle.—I am, etc.,

Manchester, March 1st.

M. W. BROWDY, M.B.

SHELL WOUND OF THE HEAD WITH LARGE FRAGMENT LODGED IN THE CEREBRUM.

SIR,—With reference to Dr. Russell's article in your issue of February 22nd under the above heading, in which he states that it would be interesting to determine what proportion of such cases recover and how many later on develop cerebral abscess or mental symptoms, I should like to state that for a period of over two years, during which I was in charge of 1,000 beds, set apart especially for treatment of the psychoses in their early stages, a great number of cases with head injury passed through my hands. I have compiled a statistical record of 100 of these, which I hope to publish shortly. I might mention here, however, that amongst this number only 15 per cent. were epileptics, four of whom still had metal in the skull and one a frontal abscess. In the *Journal of the R.A.M.C.* of September, 1916 and 1918, will be found a review of cases of head injury met with surgically by Lieut.-Colonel Holmes and Lieut.-Colonel Sargent. They found that epilepsy only accounted for 6 per cent. of their cases, but it must be remembered that they met the cases much earlier and did not follow them to their final termination.

My experience convinces me of the importance of x-ray examination, even in apparently trivial injuries if this is followed by complaints of persistent headache. There were many injuries in which this examination had been neglected on the grounds that external evidence did not justify it, but in which subsequent x-ray examination revealed extensive fractures. Small scars are no criterion that there are not greater injuries underneath and even metal in the brain. While urging the more universal use of x-ray examination for head injury I should warn medical officers against disclosing the findings of the examination to the patient, for there is little doubt that in some cases the mere knowledge possessed that he has metal in his skull will start the idea that he will of necessity be a permanent invalid, although the metal may be lodged in a harmless situation.—I am, etc.,

R. EAGER, M.D.,

Major R.A.M.C.(T.F.).

The Devon Mental Hospital,
Exminster.

A CHLOROFORM DANGER.

SIR,—I see an unfortunate accident reported in the daily papers in which apparently a patient lost her life through no fault of her anaesthetist, owing to liquid chloroform being pumped into her respiratory passages through a Junker apparatus. This danger of this accident when the bellows of the apparatus are attached to the wrong tube is well known and the fatality in this case was not due to this cause.

For this reason it seems worth while to point out that liquid chloroform can easily be pumped out of many Junker bottles although quite correctly put together if, as is often the case, the vapour exit is placed too low or the full two ounces of chloroform, for which the bottle is almost invariably graduated, are inserted. I refer to the ordinary Buxton's bottle (or one of its modifications) which is in general use. Having noticed this some time ago I have during the past few days tested several bottles which I had previously considered quite safe, and I find that in all of them liquid chloroform can be ejected if they are filled to the upper graduation and the pumping is at all violent.

The remedy is to limit the amount of chloroform placed

in the bottle invariably to one ounce, which is quite sufficient and is perfectly safe, unless the bottle is more than usually faulty. It would be well if instrument makers would graduate the bottles for one ounce only, or, alternatively, use longer bottles (which are rather cumbersome), or place the vapour exit higher, though this exposes to danger from tipping the bottle.

I do not wish to be understood as saying that all Junker bottles are faulty, but as I find that many of them are, it seems right to draw attention to the point, as it can so easily lead to a fatal accident.—I am, etc.,

London, W., March 11th.

C. F. HADFIELD.

DISINFECTANT TESTING.

SIR,—During the war the subject of an international test for disinfectants has been in abeyance, as your readers are aware, although the War Office has been using the Rideal-Walker test extensively for controlling the large quantity of disinfectants which have been supplied to the various fronts.

At the last meeting of the International Congresses on Applied Chemistry and Hygiene, in New York and Washington respectively, in 1912, two committees were formed to take this matter up, and by this time meetings would have been held in Petrograd, and further progress in the international test would probably have resulted.

Difficulties have also arisen with regard to peptone, as, owing to the war, the supplies of Witte's peptone hitherto used were not available. Workers were thus further delayed, and this necessitated the problem of finding a substitute. Many have been examined both in this country and in the United States, and have been found to vary considerably. The variation between different brands has been shown recently in the results obtained in the Research Laboratories of the Royal Institute of Public Health, and elsewhere.

Through the courtesy of the British Disinfectant Manufacturers' Association, I have had the opportunity of considering the standard specification which they have agreed together to adopt. The method of testing, which they have formulated from their combined experience, does not depart very materially from that originally put forward. It should be as widely known as possible, since I understand that all these manufacturers will be employing this technique for their standard.

STANDARD BACTERIOLOGICAL TEST (RIDEAL-WALKER METHOD).

Adopted by all members of the British Disinfectant Manufacturers' Association.

Shake the bottle or other vessel containing the disinfectant well, before proceeding to make the dilution. Make a 1 p.c. stock emulsion (5 c.cm. of disinfectant added to 495 c.cm. of boiled distilled water of 15°C.-18°C.). From this stock emulsion prepare required dilutions in boiled distilled water, taking care that pipettes used for preparing stock emulsion as well as dilutions are, after emptying, always well washed out with and into the diluent, and that all dilutions, including stock emulsion, are well shaken before use. To 5 c.cm. of a particular dilution add 0.2 c.cm. (5 drops) of a broth culture of *B. typhosus* grown for 24 hours at 37°C. Shake immediately after medication. Keep medicated tubes at temperature of 15°C.-18°C. and take subcultures into 5 c.cm. broth every 2½ minutes up to 10 minutes. Incubate for at least 48 hours at 37°C. (Rideal and Walker, *J. S. I.*, Oct., 1903, p. 424.)

Use as stock organism *B. typhosus* from a single colony on an agar plate culture that has been grown at 21-22°C. from two to seven days and removed by weekly transference for several uninterrupted generations from the original source (the human body).

Owing to the extremely important influence which the broth has on the characteristics of the *B. typhosus* employed as the test organism in the Rideal-Walker test, particularly as regards the peptone, attention is drawn to the fact that this is prepared according to the following modification of the formula of Dr. S. Rideal (Fourteenth International Congress for Hygiene and Demography, Berlin, 1907):—

Lemco, 20 grams. Peptone (Allen and Hanburys' "Euputon"), 20 grams. Sodium chloride, 10 grams. Water to 1 litre. Boil the mixture for 30 minutes, neutralize with normal caustic soda (phenolphthalein indicator), add 15 cubic centimetres of normal hydrochloric acid; make up to 1 litre with distilled water, filter and finally sterilize.

The culture employed must conform with the requirements laid down by the authors of the test (*v. Lancet*, 25th September, 1915, p. 717), viz., "Life in 2½ and 5 minutes and no life thereafter," with "phenol dilutions not higher than 1-110 or lower than 1-90."

It is of course important that whatever peptone is employed in making the broth for the cultures it should contain as nearly as possible the same freedom from sugar and salt as did the majority of the samples of Witte's peptone used for this test before the war. Also the peptone finally adopted for an international test should be as readily obtainable as lemco in all countries. Personally, I see no reason why the test in the form in which it has been drawn up by the manufacturers of this country

should not harmonize with the views of workers in other countries.

It is hoped that the difficulty in connexion with the strain of *B. typhosus* to be used in the test may also be eliminated by all workers agreeing to use the same organism, as is now the case in America. Perhaps a central authority, such as the Lister Institute, would consent to maintain and distribute a standard agreed strain. I suggest that the Rawlins's strain, which has been used by the War Office and several manufacturers as well as myself, should henceforth be used as the test organism. General use of this test organism would therefore be of considerable advantage, and I hope that the Lister Institute will be willing to act in this capacity.

One other point before concluding is to draw attention to the fact that although large quantities of British-made disinfectants are used in tropical countries and in our various campaigns, the control in this country has been made at the temperature originally suggested—namely, 15° to 18° C., and this standard temperature is adopted now by the British manufacturers. This is different from the practice at present employed in America, where, owing to the large quantities of disinfectants being shipped to Cuba, the Panama zone, and the Philippine Islands, the American workers have adopted the higher temperature 20° C., as being more comparable with the conditions of the users. There is, of course, no difficulty in working at the English temperature even in a tropical climate, as ice is always available. No Government department, however, seems to have taken this point into consideration.—I am, etc.,

London, S.W., March 17th.

SAMUEL RIDEAL.

MEDICAL DEMOBILIZATION.

SIR,—In the House of Commons, on March 4th, Mr. Churchill stated, in reply to Mr. Lyle:

I have not been at all satisfied with the rate at which demobilization of doctors is proceeding, and I have given very strong orders that all efforts are to be made to demobilize doctors at an increasing rate, to make sure, now that the fighting is stopped, we have not a greater number of medical men on our establishments overseas who are more urgently needed at home.

It is well known that by far the greater number of the doctors still serving are most anxiously awaiting release from the service to return to their depleted private practices; but, at the same time, one hears daily of efficient medical officers receiving demobilization orders when they have signified their wish to remain with their military units (I personally know of three such cases among my friends occurring within the past fortnight). Surely it would be wiser, as well as more just, to leave these officers to carry on, at least until all the unwilling ones were dealt with. This haphazard method is distinctly characteristic of War Office methods, but could not the Association put its machinery into force to alter these Gilbertian proceedings to the benefit of all concerned?—I am, etc.,

E. LUKE FREER, V.D.,
Lieut.-Colonel R.A.M.C. (retired).

London, S.W., March 18th.

* * * The plans worked out by the Central Medical War Committee in concert with the authorities have recently been scrapped by Mr. Winston Churchill.

NATIONAL MEDICAL TREATMENT.

SIR,—The scheme outlined by Drs. Howarth and Richmond (BRITISH MEDICAL JOURNAL, March 8th, p. 274) demands serious consideration and criticism. Apparently they desire to make it so difficult for members of our profession to make a living by private practice that one and all shall be compelled sooner or later to become panel practitioners. There is certain to be a very large and important section of the profession who will to the very last resist any scheme which involves this. I am not sure that I shall not belong to them.

If any scheme is to meet with general support and approval from the bulk of the profession—and without general support and approval failure is almost certain—it appears to me essential that it should offer to doctors advantages which they do not at present possess and remedy or alleviate wrongs and disabilities from which they have long suffered.

The great disadvantages that doctors in general practice suffer from are—first, that they are compelled to work for excessive hours. A working week of from seventy to eighty hours is not only not unusual, but even customary during greater part of the year. Secondly, holidays are extremely difficult to obtain, and so costly, because of the high fees now demanded by locumtenents and the immediate drop in income that follows their engagement, that doctors frequently decide to do without them. Thirdly, a breakdown in health means, in most cases, a cessation of income and, if long continued, ruin of the practice. Such continuous and arduous work is neither good for the doctor nor his patients. He has little or no leisure for reading, no opportunity for post-graduate study, or amusements, or social intercourse. Lastly, a general practitioner has no scope for his ambition. Once a general practitioner always a general practitioner, and, though his practice may become in time unmanageably large, he has still, after years of experience, to attend to the same trivial cases and accept the same inadequate fees as his most junior colleague.

Drs. Howarth and Richmond's scheme does nothing to remedy these wrongs. The doctor's hours at the clinic are certainly to be limited, but he is to be at the end of a telephone, and liable to be called upon to go at any hour of the day or night to see anybody who likes to ask for him; and for this he is to be inadequately paid, for the authors of the scheme propose, in order to prevent excessive visiting, that the fee for a visit should approximate to that for a consultation. I am quite prepared to agree that visiting should be discouraged, but it should not be by underpayment. The proper method would be to offer every patient who was too ill to attend the clinic as an out-patient a hospital bed with free nursing and treatment, but make him pay himself, and on a liberal scale too, for all visits at home.

It is true that the scheme would offer us the advantage of a pension, but only on a contributory basis, and then at the end of forty years of panel practice. I do not think that the man who could survive forty years of panel practice has yet been born.

For the general public the only advantage that the scheme offers is that everybody would be entitled to some kind of medical treatment free. It obviously would not be the best kind, because doctors are, under the scheme, to have the opportunity for the "sternest competition." Apparently the kind of competition contemplated is to see how many patients they could see in an hour; the more patients seen, the more fees. Careful and systematic examination of cases would not only receive no reward, but actually be penalized.

Any scheme which offers the same rate of pay to all doctors irrespective of their experience, attainments, ability, and the thoroughness of their work is bound to encourage slipshod methods and to lead neither to the benefit of the public nor the profession. If any scheme of National Medical Service is ever brought into being, one of the things that it ought to offer to the public above everything is protection of the patient against careless work. At present the only protection the patient has—and it would continue to be the only protection under this scheme—is his right to change his doctor and the right to ask for a consultation. In my judgement, this is an insufficient protection; for the patient is very often incapable of telling whether he is being treated with skill and judgement or not, or whether a correct diagnosis has been made.

It would be much better, if ever any such public clinics as suggested are established, to make it a rule that every new patient should be seen by at least two doctors, a senior and a junior, and that the senior should receive a higher rate of pay. The subsequent treatment should be continued by the junior, but in all serious cases consultations between senior and junior should be held.—I am, etc.,

J. A. BUTLER, M.D.

Goldhawk Road, London, W., March 9th.

A METHOD OF OBTAINING ENDOWMENT FOR MEDICAL RESEARCH.

SIR,—The work of the Rockefeller Institute of New York has shown what can be done, in particular in the fight against tropical diseases, by medical research and

On appointment...	...	...	...	£300 per ann.	...	Old Rates.
After completion of 3 years' service	...	...	...	£350	...	£250
" " 6	...	...	...	£400	...	£250
" " 9	...	...	...	£450	...	£300
" " 12	...	...	...	£500	...	£300
" " 15	...	...	...	£550	...	£450
" " 18	...	...	...	£600	...	£450
" " 21	...	...	...	£650	...	£600
" " 24	...	...	...	£700	...	£700

THE ARMY BONUS.

At the close of January last a Royal Warrant was issued laying down the extra remuneration or bonus which would be given as from February 1st, 1919, to all those who have been definitely selected for retention on military service. The bonus is based on the rank for which pay is being drawn. It is issuable to all officers (including those with permanent commissions in the Regular Army) and other ranks belonging to units whose dépôts are permanently situated in the United Kingdom, Channel Islands, Isle of Man—including British service troops serving in India; to officers and men of the South African Overseas contingent drawing British rates of pay; and in such other cases as the Army Council may authorize. The period during which the bonus will be paid to officers and men definitely retained will be that for which it is found necessary to maintain Armies of Occupation. We understand that it has been officially ruled that the bonus is issuable to the whole of the personnel of the R.A.M.C., including Regular, Special Reserve, Territorial, and Temporary Officers. The schedule to the Royal Warrant prescribed the weekly rates at which the bonus would be issued; thus a second lieutenant receives 24s. 6d. a week, a lieutenant 28s., a captain 31s. 6d., a major 35s., a lieutenant-colonel 38s. 6d.; officers of higher ranks 42s. It was at first laid down that officers and other ranks who have not been definitely selected for retention, but who, nevertheless, have not been released from service by April 30th, would in general be credited with a bonus at half the rates shown in the schedule for any period of service they may be required to give after May 1st, 1919. Under a further Royal Warrant, however, the full rate of bonus, instead of half rate, will be paid to officers and other ranks who, although not selected to form part of the Armies of Occupation, have not actually been demobilized on May 1st next.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following medical officers:

Honourable Artillery Company.—Surgeon-Major John F. Taylor.

Royal Army Medical Corps.—Lieut.-Colonels: L. J. Blandford, F. Kelly, G. B. Masson, J. M. Rogers-Tillstone, H. W. Thomson, D.S.O. Temporary Lieut.-Colonel Wheelton Hind. Majors (temporary Lieutenant-Colonels): John Gray, Charles Stonham, C.M.G. (deceased). Major (acting Lieutenant-Colonel) Richard T. Turner. Major and Brevet Lieutenant Colonel Arthur B. Harris. Majors: Henry Dodgson, W. J. Mackinnon, A. C. Oldham, Walter R. N. Smithard, William A. Taylor, Abraham Thomas.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on March 13th the degree of Doctor of Medicine was conferred upon L. M. Davies.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on March 14th the following medical degrees were conferred:

M.B. AND B.CH.—L. M. Ingle (by proxy).
M.B.—W. B. Gordon.
B.CH.—L. R. Shore.

Dr. Hamilton Hartridge, Fellow of King's College, has been appointed University lecturer in physiology of the special senses until September 30th, 1923. Mr. J. Barcroft and Mr. A. V. Hill have been appointed University lecturers in physiology for the same period.

UNIVERSITY OF ABERDEEN.

At the meeting of the University Court on March 11th communications were read from the Carnegie Trustees stating that the quinquennial distribution of grants had been further postponed, but the grant of £8,000 to the university would be doubled in the next academic year for that year only, and that a grant of £800 a year for three years would be made towards the payment of salaries of assistants who should give half their time to research.

THE COUNCIL OF THE ROYAL COLLEGE OF
SURGEONS OF ENGLAND.

MONDAY last, March 17th, was the last day on which notices of nomination could be received from candidates for the election of members of the Council of the Royal College of Surgeons on July 3rd. There are six candidates for the two vacancies. Sir Berkeley Moynihan, K.C.M.G., Leeds (F. 1890), who seeks re-election; Mr. A. H. Tubby, C.B., Westminster Hospital (F. 1887), Mr. Cuthbert S. Wallace, C.B., St. Thomas's Hospital (F. 1893), Mr. Francis James Steward, Guy's Hospital (F. 1898), Mr. William Francis Victor Bonney, Middlesex Hospital, representing obstetrical and gynaecological surgery (F. 1899), and Mr. John Frederick Jennings (F. 1903), of John Street, Berkeley Square, W., who comes forward as a representative of general practitioners. An analysis of the Council as it now stands appeared in the JOURNAL of last week, p. 329.

Obituary.

WILLIAM ALEXANDER, M.D., F.R.C.S.,

Honorary Consulting Surgeon, Royal Southern Hospital, Liverpool.

WE regret to have to record the death of Dr. William Alexander, which took place rather suddenly on March 9th. Up to within a few days he was actively engaged in work, and apparently in good health.

William Alexander was born in Holystone, co. Antrim, and studied medicine at Queen's College, Belfast. As a student he had a brilliant career, winning many scholarships and prizes. In 1870 he graduated M.D., R.U.I., obtaining the gold medal and exhibition, and in 1877 took the F.R.C.S. Eng. He was appointed resident medical officer at the Liverpool Workhouse Hospital, and, after settling in private practice, visiting surgeon to that institution. It was there he developed that remarkable skill which made him one of the leading surgeons in the north of England. In 1881 he won the Jacksonian Prize for an essay, "The pathology and surgical treatment of diseases of the hip-joint," and in 1883 the Sir Astley Cooper Prize for his paper on "The pathology and pathological relation of chronic rheumatic arthritis." In gynaecology he introduced new methods for treating inveterate uterine displacements, and published a treatise on this subject. But Dr. Alexander will be remembered best for his work on epilepsy, and particularly as founder of the Home for Epileptics at Maghull. Impressed with the hopelessness of the outlook of epilepsy he determined to alleviate this condition; the results at the Maghull Institution have been most gratifying. He introduced ligation of the vertebral arteries in the treatment of epilepsy in 1882. In 1889 he was appointed honorary surgeon to the Royal Southern Hospital, which post he retained until 1910, when he retired also from the post of visiting surgeon to the Brownlow Hill Infirmary after forty years of unstinted service.

In many respects Dr. Alexander was an exceptional man. Gifted as a great surgeon, he was unostentatious in manner, his opinions were lucidly expressed, and in speech he was never redundant. He saw clearly, made up his mind, and acted accordingly. In private life he was kind-hearted, and many a patient received pecuniary assistance from him in hours of distress.

Dr. William Alexander had been a widower for many years, and lost his only son, Dr. Moore Alexander, a pathologist of repute, in 1915.

The funeral took place at Heswall on March 13th. Many of his professional brethren and representatives of the institutions which Dr. Alexander had served so faithfully were present to pay their last respects.

ROBERT SYDNEY MARSDEN, M.B., D.Sc. Ed., F.R.S.E.,
F.I.C., D.P.H.,

Medical Officer of Health, Birkenhead.

THE death of Dr. Marsden, the Medical Officer of Health of Birkenhead, on March 8th, came as a painful surprise to many of his friends. He had been confined to his bed with bronchitis for a week, when fatal pneumonia supervened. Robert Sydney Marsden was born in Sheffield in 1856, studied science in Edinburgh University, where he graduated B.Sc. in 1877, and in 1879 was appointed lecturer in chemistry at University College, Bristol. He afterwards entered upon his medical career, taking the degrees of M.B., C.M. Edin. in 1885. Dr. Marsden was then appointed medical officer of health of Malton, and in 1891 became medical officer of health of Birkenhead. On all matters pertaining to public health Dr. Marsden enjoyed an eminent position, and was frequently called upon to give evidence before Royal Commissions and Parliamentary Committees. He possessed considerable literary ability, and contributed many papers of scientific and historic interest to the Birkenhead Literary and Scientific Society. The sanitation of Birkenhead owes much to his untiring efforts, and many improvements have taken place under his guidance. The system of sewer ventilation was revolutionized by him with great benefit to the inhabitants of the town. Dr. Marsden leaves a widow and one daughter. The funeral took place on March 13th. Many of the public officials of Birkenhead and medical friends were present to testify their regret.

MR. STEWART HENRY ROUQUETTE, who died on February 27th at the early age of 32, was the son of Mr. G. A. Rouquette of Eastbourne. He received his medical education at Cambridge University and St. Thomas's Hospital, and took the diplomas of M.R.C.S., L.R.C.P.Lond. in 1911, and the F.R.C.S. in 1912. He graduated M.A., M.B., B.C.Camb. in 1913, and M.C. in the following year. He won the Solly gold medal at St. Thomas's Hospital in 1912, and after serving as surgical registrar, casualty officer, resident anaesthetist, and house-surgeon at the hospital, was appointed resident assistant surgeon. He was also consulting surgeon to Lady Ridley's Hospital for Officers, and he was amongst the recent recipients of the Order of the British Empire (Civil Division) for services rendered in or in connexion with military hospitals, etc. His death has cut off a career of great promise to the medical profession. Mr. Cuthbert Wallace, C.B., C.M.G., writes: The school and hospital of St. Thomas has suffered a great loss. Rouquette was one of those quiet men who steadily develop along their own line. That he had a future before him was soon apparent to those with whom he was brought into contact when he joined the hospital. Although very unassuming he was full of ideas and enthusiasm, and well able to present his own opinions. He had a wide knowledge for his years. In the handicraft of surgery he was far advanced, and had developed a technique that for skill, gentleness, and patient celerity was remarkable. This stood him in good stead along a line that he was developing at the time of his death—namely, the operative treatment of exophthalmic goitre. A large series of such cases was already to his credit with an extraordinary low mortality.

SURGEON GENERAL THOMAS FRANCIS O'DWYER, Army Medical Service (retired), of Clifton, Bristol, died in a nursing home on February 5th, aged 77. He was born on December 26th, 1841, graduated M.D. with honours in the Queen's University, Ireland, in 1862, and took the diploma of L.R.C.S.Edin. in 1863. He entered the army as assistant surgeon in 1864, became surgeon-general in 1896, and retired on December 26th, 1901. From 1865 to 1868 he served in the 22nd Foot, the Cheshire Regiment, and as surgeon-general held the posts of principal medical officer of the south-east district and at Aldershot. He served in the Egyptian war of 1882, being present at the battles of Kassassin and Tel-el-Kebir, was mentioned in dispatches in the *London Gazette* of November 2nd, 1882, and received the medal, the Khedive's bronze star, and a special promotion; and in the Sudan campaign of 1884-5, as Secretary to the P.M.O., when he was again mentioned in dispatches, in the *London Gazette* of August 25th, 1885, and received a clasp.

LIEUTENANT-COLONEL THOMAS WALTER IRVINE, Bombay Medical Service, was accidentally drowned in the Kabul river while hunting at Peshawur on January 26th, aged 53. He was born on October 21st, 1865, the only son of the late Rev. Walter Irvine of Edinburgh, and educated at Edinburgh University, where he graduated M.B. and C.M. in 1887. Entering the I.M.S. in 1891, he became major in 1903 and lieutenant-colonel in 1911. After five years' military duty, he took civil employment under the Foreign Department of the Government of India in November, 1902, and was then attached to the Seistan Arbitration Commission, which laid down the boundaries between Persia and Afghanistan. In December, 1907, he was appointed residency surgeon of Mewar (Udaipur) in Rajputana; in October, 1911, chief medical officer of the North-West Frontier Province, with head quarters at Peshawur, and subsequently acted for a time as senior surgeon to the Government of Maisur. He served in the third China war of 1900, receiving the medal; and in January, 1911, received the Kaiser-i-Hind medal, 1st class.

DR. JAMES A. SHOOLBREAD of Edinburgh died from pneumonia following influenza on February 22nd. He was educated at the University of Edinburgh, where he graduated M.B., C.M. in 1897, and B.Sc. (Public Health) in 1901. He had been in general practice in Edinburgh for the last twenty years. He had held the offices of senior demonstrator in materia medica and pharmacology in the Edinburgh School of Medicine, and resident medical

officer to the Edinburgh Royal Infirmary Convalescent Home at Corstorphine. He found time for several public activities in the city, notably as a member of the School Board, on which he served for many years. He was much loved and respected by all his patients, and will be greatly missed by a large circle of friends.

DR. HENRY DONALD WELPLY died at Toowoomba, Queensland, Australia, on March 11th, of pneumonia, aged 28 years. He was educated at Edinburgh University, and graduated M.B., Ch.B. in 1914; soon afterwards he held the post of house-surgeon at Leicester Royal Infirmary, and from there early in 1915 he received a commission in the R.A.M.C., being promoted to the rank of captain in the following year. Shortly after joining up he was sent to Egypt, where he contracted a serious attack of dysentery, which ultimately led to his discharge from the army in May, 1917, on pension, retaining the honorary rank of captain. The following autumn he went to Australia, where for the past year he had been practising in Queensland. His many friends will miss him, while his memory will ever remain green in the lives of his sorrowing widow, parents, brother, and sister.

Medical News.

COLONEL A. H. TUBBY, C.B., C.M.G., surgeon to the Westminster Hospital, who has served for a prolonged period in Egypt, has now relinquished his commission and returned to civil practice in London.

THE late Sir Herman Weber left estate valued at £195,668 and Dr. Thomas Buzzard at £194,595.

THE orders controlling the sale of bismuth and the use of kelp for the preparation of potassium compounds have been suspended.

THE American Red Cross has established a fully equipped modern military hospital for sick and wounded men of the Czech-Slovak forces near Cognac in France. The medical officer in charge and all the personnel are members of the Czech-Slovak army.

ST. MARY'S HOSPITAL is to be added to the list of medical schools and hospitals sharing in the emergency post-graduate courses in London. It is arranging a three months' course. A full list of medical schools and hospitals was published in the issue of March 8th, p. 281.

THE Harveian Lecture of the Harveian Society will be delivered at the rooms of the Medical Society of London (11, Chandos Street) on March 27th, at 8.30, by Mr. Edred Corner, F.R.C.S. His subject will be nerves in amputation stumps. Members of the medical profession are invited to be present.

IN our advertising columns this week particulars are given of a special three months' course of post-graduate study at the Charing Cross Hospital Medical School, beginning on April 7th, and an announcement of the setting up of an ophthalmic clinic, in affiliation with the Royal Westminster Ophthalmic Hospital.

HOSPITALS within nine miles of Charing Cross, and convalescent homes and sanatoriums for consumption taking a large proportion of patients from London, if they desire to participate in the grants made by King Edward's Hospital Fund for London, must make application before March 31st to the honorary secretaries, 7, Walbrook, E.C.4.

WE are informed that the meeting to be held on March 31st to discuss the formation of a medical post-graduate association in London will be attended only by representatives of the medical teaching institutions in London, who will report on the attitude of the hospitals they represent towards the scheme in its present form. It is proposed to hold a public meeting in April.

THE preparation of a programme for the extension of Red Cross work to civilian needs is to be considered, as already announced, by an international congress of national Red Cross societies to take place at Geneva thirty days after the signing of peace. The preliminary meeting at Cannes to formulate a programme for the conference will take place at the end of this month or early in April. The British members will be Sir Arthur Newsholme, K.C.B., Colonel Sir Ronald Ross, K.C.B., K.C.M.G., Sir Robert Philip, M.A., M.D., Dr. F. N. Kay Menzies, Dr. Truby King, C.M.G., Sir Walter Fletcher, K.B.E., F.R.S., Sir Leslie Mackenzie, M.D., LL.D., Colonel S. Lyle Cummins, C.M.G., A.M.S., and Colonel L. W. Harrison, D.S.O.

THE Royal Institute of Public Health is arranging a conference on the problems of reconstruction in relation to public health at the Guildhall, London, from June 25th, when it will be opened by the Lord Mayor, to June 28th. Particulars can be obtained on application to the Secretary of the Institute, 37, Russell Square, W.C.1.

Le Scalpel of Brussels, the issue of which has been suspended since the beginning of the war, came to life again, in a somewhat changed form, in January. Owing to the shortage of paper, weekly publication is impossible for the present. The *Scalpel*, which is edited by Dr. L. Dejaque, was founded in 1847.

MR. MUIRHEAD BONE, who has been an official artist since August, 1916, and whose war drawings will be preserved in the national collections, has undertaken to set aside the proceeds from the sale of his signed lithographs, and to devote this sum, amounting to about £2,000, to purchase the work of other artists for presentation to the Imperial War Museum.

IN a communication to the Royal Society (February 20th) S. S. Zilva and E. M. Wells said that the structure of the teeth of guinea-pigs and monkeys subsisting on a scorbutic diet undergoes radical changes resulting in total disorganization of the pulp. Alterations in the odontoblastic cells and dilatation of the blood vessels can be observed before any systemic abnormality can be recorded with certainty.

By a decree of the French Minister of the Interior, dated February 4th, a committee, under the presidency of the Under-Secretary of State, was set up to inquire into the sanitary conditions of the liberated territories of France and to suggest measures of improvement. Among the members are Dr. Roux and Dr. Calmette, past and present directors of the Pasteur Institute; Dr. Faivre, Inspector-General of the administrative services of the Ministry of the Interior, and Drs. Netter and Widal, members of the Superior Council of Hygiene.

AT the meeting of the West London Medico-Chirurgical Society on March 7th, when Lieut.-Colonel E. M. Wilson, C.B., C.M.G., was in the chair, the West London triennial medal awarded to Surgeon Commander Francis Bolster, R.N., for heroism on a sinking ship during the battle of Jutland, was presented. The Medical Director-General R.N. expressed the cordial approval of the service in the choice made by the council of the society, and said that he could not imagine a more worthy recipient. A large number of members and guests of the society were present and heartily acclaimed Surgeon Commander Bolster.

PROFESSOR M. SEGALÉ has published in *Pathologica* (xi, 243) a long paper on bacteriological researches into the pandemic of influenza last year, carried out at a military bacteriological laboratory. He describes an organism, which he calls *Streptococcus pandemics*, measuring 0.8 by 1.3 μ , or 1.2 by 1.7 μ , according to the medium. It is therefore much larger than the organism described by Bradford, Bashford, and Wilson. Moreover, Segalé's organism grows aerobically, which the other does not. Segalé did not filter his material. There does not seem to be any reason to think that changes in the lungs and other organs following his inoculations are more like those of influenza than the experimental lesions produced by Nicolle and Lebailly and by Gibson, Bowman, and Connor with filtered material. On the other hand, Segalé's *S. pandemics* may be a potent secondary invader responsible for pneumonia and bronchitis. His research does not seem to touch the question whether a filter-passing virus is the real cause of the epidemic, apart from secondary infections or complications.

DR. LEDENT, who was in charge of the medical aid service for deported Belgians on their return through Lille in 1917, states that forty thousand passed through his hands. The Germans would only allow the establishment of urgency aid posts. A regular service such as existed for the evacuated territories in France would have shown too plainly the wretched condition of the repatriated prisoners; hence all manner of obstacles were placed in the way of Dr. Ledent and his colleagues. Among the diseases noted were pneumonia, meningitis, albuminuria, and typhus, but what struck him most was the frequency of more or less generalized oedema the result of cold, bad food, or punishment by exposure in the open air. Many of the men were so weak that their journey had to be broken at Lille. Phlegmon and purulent pleurisy caused many deaths. There was a large number of cases of tuberculosis, which developed rapidly. The variety of lesions of all kinds due to marasmus, especially keratitis, wasting, and premature senility, was beyond anything seen in civil practice.

Letters, Notes, and Answers.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is, 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Articulate*, Westrand, London; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

LETTERS, NOTES, ETC.

INCOME TAX.

War Bonus to Panel Doctors.

THE question has been raised as to whether practitioners receiving the bonus payable to insurance doctors whose professional incomes do not exceed £1,000 should include such bonuses in their income tax returns as liable to assessment. We have no hesitation in saying that legally these receipts are liable to income tax. They are given primarily as remuneration for services rendered by the practitioner, and would seem to be indistinguishable from war bonuses paid in other cases, as, for instance, to manual workers, bank officials, or civil servants. In the language of the taxing Acts, they are part of the "profits and gains" of the profession.

DIGITALIS FOLIA IN MITRAL DISEASE.

DR. RICHARD COATES (Bridgwater) writes: I wonder if any of your readers can give a scientific explanation of the fact that digitalis in the form of fol. digitalis gives better results in the case of mitral incompetence and oedema than any other form of digitalis however carefully selected and standardized. It is not only that the cardiac condition improves, oedema lessens, and flow of urine is increased as with other forms of digitalis, but the patient himself has a much greater sense of well being and comfort. Personally I use palatinoids (Oppenheimer) $\frac{1}{2}$ gr. p. fol. digitalis, one three or four times a day, with results distinctly better than when using the standardized products. The patient invariably asks for them again if I revert to the other forms of digitalis. The advantages of the fol. digitalis were first pointed out to me by Dr. Shingleton-Smith of Clifton.

THE TREATMENT OF WOUND SHOCK.

DR. RALPH W. LEFTWICH (London, S.W.) writes: While not suggesting that Professor Bayliss is in the least degree indebted to me for the idea of colloidal saline, I can claim an early application of the same principle. In the *Edinburgh Medical Journal* for 1902, and later in my *Pocket Book of Treatment*, I advocated for the treatment of constipation the addition of gelatin to the morning glass of hot water, on the theory that, by making the drink colloidal, absorption would be retarded until it could act with the best effect. A subsequent very large experience has fully confirmed this view.

SKIPPING: A WARNING.

SKIPPING has often been advocated as a means of taking exercise and improving the health; the late Dr. F. T. Bond of Gloucester was very strong on the point, and designed a special kind of skipping rope; but the exercise should be used with discrimination by elderly and short-sighted people, so as to prevent undue jarring. Mr. T. H. Bickerton, ophthalmic surgeon to the Liverpool Royal Infirmary, sends the following note, which shows the danger of this form of exercise for short-sighted people: A middle-aged man consulted me recently with this history. He had been strongly recommended to skip every evening for exercise, and did so regularly for three months. On a certain Saturday evening he skipped vigorously, and in order to give himself a thorough shaking up he purposely "let" heavily on his heels. On Sunday morning he could not see with his left eye owing to a dense haze. Examination showed complete detachment of the upper half of the retina, and one month later the eye was almost completely blind. He was short-sighted.

THE following appointments of certifying factory surgeons are vacant: Poole (Dorset), Skegness (Lincoln).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

DISEASE AND DIAGNOSIS.*

BY

HENRY HEAD, M.D., F.R.S.

THE war has drawn an indelible mark across the history of our times. Much that before seemed possible has now become incredible and our beliefs have been shaken to their foundations. As the ancient edifice came tumbling about our ears, we wondered at the structural enormities revealed in its ruins. With the passage of time additions had been made to the original structure, which were founded on the flimsiest basis, and we are filled with astonishment that they could have held together so long.

The fundamentals of medicine have not escaped the rude shocks of war. Men's belief in the old order has been shaken, and there is a wide demand for a restatement of current values. The young are not content to accept our conventional explanations, and their curiosity is no longer satisfied by names and phrases. Contentment with words that are in many cases nothing more than a restatement of the problem in bastard Latin or Greek, was one of the most remarkable characteristics of the last quarter of a century.

Nowhere is this more obvious than in the nomenclature of disease. As soon as a name had been given to the morbid condition, a "diagnosis" was supposed to have been made, and teacher and students purred with satisfaction. After careful stethoscopic examination the conclusion might be reached that the patient suffered from "mitral regurgitation": on this there was much talk of how one flap of the valve was based upon muscle, the other on the less shifting fibrous tissue of the septum. Incidentally some one of the participants in the discussion might mention that the pulse was irregular, but this was accepted as a not uncommon accompaniment of "mitral disease."

Suppose some young student, innocent of the corrupt jargon of the hospital, were to ask, "What is the matter with the patient?" his curiosity would be checked by the scornful reply "mitral disease." But if he had been grounded in physiology, the science of function, or was one of those candid souls who are gifted with the power of seeing through words, he would recognize that "mitral disease" is a static condition. What troubles the patient is not incompetence of the valve, but some disturbances of function more or less directly associated with this destructive change. Finally he would recognize that some patients with mitral regurgitation show vital disabilities of a grave order, others do not seem to suffer to any material extent, and that this difference is due solely to the extent to which the function of the heart is disordered.

The human body is a complicated machine which has been developed throughout the ages to meet the stresses and strains of the surrounding universe. Its structure has been put together out of the lowliest materials; Nature is interested in function, not in structure. In the course of development the most unlikely transformations occur, provided they lead to the production of an organ that fulfils a useful function. Nature demands solely that it shall work adequately. The internal ear in man is evolved by the transformation of the headward portion of the balancing apparatus of the fish. But this organ came into existence in a free swimming vertebrate; it was adapted to pick up vibrations in the surrounding water, and the ear of man is therefore provided with a special fluid upon which aerial waves must act before they can give rise to sensation. The old method is retained because, by a slight transformation, the organ can be made to function in air. Structure is anchored in the past, and development occurs by its adaptation to higher functions.

Disease is disordered function. The life of man depends upon the orderly sequence of a series of processes, and any disturbance of these functions leads to discomfort, to ineffective action, or even to death. The patient, like Mother Nature, is primarily interested in his functional capacities.

From mental inertia the physician has drifted into the habit of considering morbid structure rather than abnormal function. How often has it been our lot to listen to some

teacher, expounding over the bed of a patient his reasons for believing that the kidney was small and red; and yet at the *post-mortem* table, face to face with palpable and visible facts to the contrary, he would explain that he was justified, under the circumstances, in his opinion. But it did not enter his mind that he had no more evidence that the kidney was small and red than that it was of any other size or colour. He had not tested its function. He knew there was albumin in the urine, and he had taken the specific gravity of a sample gathered with a carelessness that would not be tolerated in any other analytical procedure. For the estimation of the amount of urine passed in twenty-four hours is left to the nurse, and the measurement is not uncommonly made during the dark hours, when her accuracy, never very great, is reduced to its lowest ebb. No attempt had been made to discover the power of the kidney to secrete the various elements of the urine, and structural changes were confidently predicted without a preliminary determination of disordered function.

In many departments of medicine the old order was tottering before the war. Fortunately for the history of medicine in this country, the majority of medical men were compelled to enter the army and to work under command. As a profession we are essentially individualistic, and, ever since the days when medicine was freed from the domination of Galen and Hippocrates, the exercise of authority in matters of thought excites our hearty antagonism.

No more perfect method for arousing this healthy reaction could have been devised than the List of Diseases issued for the use of the army under which we have all worked since the beginning of the war. I am not going to waste this evening in stories of the humorous possibilities of this little brown book.* One of my old house-physicians had the temerity to recognize auricular fibrillation and was reprimanded by his commanding officer for choosing a diagnosis that could not be discovered by the sergeant amongst the official list of diseases of the ear. I have no doubt that all of you could cap this anecdote with even more laughable episodes.

But let us consider rather why this nomenclature of diseases forms a relic of a past epoch in medicine, and merits a prominent position on the shelves of an anthropological library, as evidence of an extinct phase of human thought.

First, it is based on no coherent principle. Sometimes the "disease" is named after a change in structure that can be discovered by the most careful microscopical evidence only, long after the diagnosis has ceased to be of interest to the sufferer or his friends. Thus diseases of the myocardium are to be classified under "inflammation, degeneration, atrophy, hypertrophy, dilatation"; but there is not a word as to any disorder of function except the fantastic D.A.H. Sometimes the classification depends on the event; if the patient dies the endocarditis is "malignant" or the anaemia "pernicious."

For another series of diagnoses the most elaborate bacteriological examinations are necessary, as, for example, "paratyphoid A" or "paratyphoid B," whilst in other cases that vague conscience-anodyne "influenza," or even the colloquial "sore throat," are sufficiently precise.

Think, too, of the intellectual confusion that can tolerate "tremor," "paralysis agitans," "headache," and "hyperaesthesia" as correlative terms.

Mental medicine has always sinned grossly in this respect, and the permissible diagnoses under this heading are based indifferently on the cause, on the mental defect, or on changes in conduct. "Alcoholic" insanity reveals nothing beyond the supposed cause; the patient may be excited, depressed, confused, or full of delusions. On the other hand, "dementia" is an expression of loss of function, which may or may not be accompanied by positive manifestations of abnormal activity. "Impulsive" insanity usually means that the trained attendant thinks he has to deal with a "nasty" patient, whilst "moral" insanity is a police court diagnosis.

Apart from this acceptance of diverse and contradictory categories of belief, so common in all primitive cultures, this nomenclature fails to recognize the essential factors of disease. A morbid state depends first on the biological

* Remarks made at a social evening at the Royal Society of Medicine on Wednesday, March 12th.

* "List of Diseases: Printed in the order in which they appear in the Annual Report on the Health of the Army."

cause, and secondly on the site of its incidence. This is evident in such a disease as syphilis of the central nervous system. The activity of the *Spirochaeta pallida* is governed by certain laws on which depend the character and life-history of the infection; but the situation of its destructive activities determines the nature of the morbid manifestations. All attempts to separate the various forms of syphilitic activity in the central nervous system into different "Diseases" has failed, and such terms as "general paralysis of the insane" and "tabes dorsalis" have been relegated to their proper position as shorthand expressions for groups of signs and symptoms. The diagnosis of "general paralysis" states nothing more than that the most significant part of the syphilitic affection has fallen on the higher centres; it tells us nothing as to whether the meninges, vessels, or cortical cells have borne the heaviest brunt of the destructive process. "Tabes dorsalis" indicates that the posterior columns have been attacked. To say that a patient who shows primary optic atrophy is suffering from "tabes," although his ankle and knee jerks are normal and he has no disturbance of the functions of the posterior columns, reveals a complete want of comprehension of the meaning of disease.

Such fundamental confusion between cause and effect, structure and function, leads inevitably to defective understanding of the significance of diagnosis. True diagnosis is an orderly procedure in which all the faculties of the mind, logical and instinctive, play their part. But this is a laborious exercise and requires more time than can be given by the physician or surgeon either on his visits to the wards or in fashionable practice.

Search is made, therefore, for some infallible sign that will lead with rapidity to the desired haven of a name and render further thought unnecessary. Happy the man who can not only find such a lodestar, but can compel his fellows to attach to it the name of its fortunate discoverer.

Scientifically, however, such signs are nothing but a statement of the problem awaiting solution. Some of them reveal the site of the structural affection; some of them form a group of symptoms and signs of diverse origin. In both cases the fundamental cause of the morbid manifestations must be sought by further analysis. Thus "hunger pain" and its concomitant manifestations are a syndrome that may be based on chemical disturbance in the gastro-intestinal tract, or may be associated with gross structural changes in such diverse organs as the duodenum, appendix, or gall bladder. "Epilepsy," "asthma," and "angina pectoris" are not diagnoses; they are names for certain explosive outbursts which are harmful to the patient. Each may be based on the most diverse causes, and there may be nothing in the form of the attack to betray its origin. We cannot tell by looking at the face of a clock, which is running fast, to what structural change this abnormal action is due. The scientific physician recognizes that the convulsive seizure, the paroxysmal dyspnoea, or the breast pain state the problem he has to solve, and his clinical curiosity is not satisfied by calling them "epilepsy," "asthma," and "angina pectoris."

Reasonable diagnosis begins with an accurate determination of the morbid phenomena by every means in our power. Attention must not be fixed exclusively on one part or on one system of the body. The mental states induced by abnormal conditions of the heart and lungs are as fundamental as the revelations of the stethoscope; they are more important to the comfort of the patient.

When we have gathered together our observations they must be translated into terms of physical states. We must "localize" the original site of the morbid manifestations. Thus, when the great toe moves upwards on scratching the sole of the foot, we know that the pyramidal tracts are affected, and a certain combination of auscultatory signs points to narrowing of the mitral valve. Physical signs mostly reveal the situation of the lesion. They are the static evidence of disease.

Then we must marshal the evidence of disordered function. This aspect of medicine has been sadly neglected. But within the last few years attempts have been made to evolve tests for functional efficiency that will yield measurable results. Opinion is valueless; the results of each observation must be given in measured and comparable terms. In this respect the workers in cardiology have given us an admirable example.

Finally, however, the cause must be sought for, both the static and dynamic features of the disease. It is not sufficient to say that a patient is suffering from pneumonia: we must attempt to discover the essential reason for the inflammatory changes in the lung. This is frequently a laborious process, and requires considerable technical training. The physician and surgeon, having neither the time nor necessary experience, have come to rely entirely on the reports of laboratory workers. The physician does not call in an outside expert to auscult the chest. But the blood, the gastro-intestinal contents, the urine, and other secretions, together with the whole infective problem, are handed over to those who are not permitted to see the patient. Worse still, the laboratory rarely if ever sees the physician. How many clinical teachers are there who can evaluate a quantitative Wassermann reaction or appreciate the true significance of a gastro-intestinal analysis?

No man can be expected to become an expert in all the multifarious physical and chemical procedures which go to make up a scientific diagnosis. My contention is that the clinical teacher should appreciate that his special knowledge is one link only in the search for the cause of those disturbances of function or changes in structure we call disease. He must learn to understand the methods of his co-workers and not expect to be an oracle, divinely irresponsible, emitting pragmatical opinions.

Many diagnoses are based on no method of orderly reasoning; they are of no more intellectual value than "spotting a winner" in a horse race. Such guesses may bring financial reward to their maker, but add little to his intellectual credit.

No one is more wedded to theory than the so-called "practical" physician. He knows the "cause" of each disease and the source and nature of the responsible toxin. He enters the sick room armed with vaccines, organic extracts, serums and antitoxins, preferably polyvalent; enzymes and even hormones form part of his armamentarium. He shows a bold front where Science moves with bowed head and bated breath.

But the true clinician is a very different figure. He walks humbly from one bedside to another, listening to each patient's story and noting the diverse changes in function which form the disease he is called upon to treat. Much that he sees does not fit with what he has been taught. It breaks his heart to know that he has neither the means nor the time to discover the significance or what he sees. To whom shall he turn for counsel?

This is the place of the man of science. It should be the business of the great teaching centres to expend their huge powers and vast opportunities to correlate morbid phenomena. Clinical diagnosis should be a by-product of scientific investigation. It is impossible to expose every patient to exhaustive examination, nor would it serve any useful purpose to do so. But simple tests applicable to clinical use must be calibrated by rigid scientific investigation. Once their value has been determined the physician knows exactly how far they will lead him. In lesions of peripheral nerves, all that is required for sensory diagnosis can be obtained with a piece of cotton-wool and a pin, provided the significance of these empirical tests has been previously determined by laborious scientific observations. So with the functions of any organ such as the kidney; long and elaborate researches are necessary to produce tests applicable to clinical use. The polygraph and electrocardiograph have taught us the significance of circulatory signs that can be appreciated by every medical man.

You can bring down giants with a sling and a stone if you know how to use them; Saul's armour is cumbersome wear for the daily battle with disease. But, in order that medicine should be endowed with simple and measurable signs applicable to practice as a whole, men must devote their lives to the investigation of special problems of disease. This cannot be done to any considerable extent under the present conditions.

Let us clarify our notions of disease, and bear in mind that a name is not a diagnosis. The era of penny-in-the-slot medicine is at an end. The word "epilepsy" should not lead instinctively to the exhibition of bromide, nor the label "angina pectoris" cover a box containing amyl nitrite. Because a condition is produced by a micro-organism it cannot be inevitably removed by a vaccine. Widespread morbid manifestations are not of necessity due

to a deviated nasal septum, a kink in the intestine, or microscopical changes in the ovary.

"The letter killeth but the Spirit giveth life." Let us recognize that the old order has passed away from medicine, and the reign of the New Spirit has begun.

MEDICAL AND SURGICAL WORK AS A PRISONER OF WAR.

BY

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TEMPORARY CAPTAIN R.A.M.C.

In theory the latter part of the title of this article is perhaps not strictly correct. Under the Geneva Convention medical personnel taken by the enemy are not prisoners of war in the ordinary sense. They should be detained only so long as they are required to look after their own sick and wounded. But experience has taught us in this war not to place reliance on the binding force on our opponents of any international agreement to which they were parties, and in practice we found that this standpoint was not wanting in justification.

These notes are not intended to provide any comprehensive survey of German medical organization and work among the prisoners of war. They are rather an account, albeit somewhat fragmentary, of my individual experiences, which throw some light on the vaunted "efficiency" of our opponents, and show how their methods differ from our own.

The writer was taken prisoner at an advanced dressing station in France, along with a colleague, in March, 1918, the number of wounded urgently claiming attention at the time precluding any thought of getting away, even had the intense barrage permitted it. We had been working under difficult conditions at high pressure for some little time before the Germans made their appearance. Our dressing station was quite a new one and in apple-pie order on the morning of the attack. The windows of oiled silk material were the first things to be knocked out. During the preliminary bombardment with high explosive and gas shells they were quickly torn to ribbons, and they had to be replaced by pieces of blanket. Then when the barrage rested on the bank under which our three huts sheltered, our newly hung doors played us false and collapsed with a crash under the concussion of the shell bursts, allowing cascades of earth to enter the dressing hut from above. The blankets we had nailed over the windows were also blown off, and the earth entered these also. The carrying of patients who had been dressed into the "evacuation" hut was at this time rather an unpleasant business. Two bombs were thrown into this hut by the Germans as they approached the sunken road from above before they recognized that they were dealing with a dressing station.

We were held prisoners all day in our dressing station, treating our own and German wounded alike. Two men of the German medical corps were the only medical personnel with us during most of the time apart from a sergeant and two men of our own staff. The remainder of our own non-commissioned officers and men—dressers and stretcher-bearers—were ordered back immediately, and I am sorry to say that some of them were killed during the tramp over the battlefield through the German lines. Of the remainder, a number were kept in the captured ground for days, burying dead and making roads, living without shelter on the most meagre allowance of food. The two German *Sanitäts* repeatedly brought their wounded compatriots to us for dressing or advice. We injected antitetanic serum, as in the case of our own wounded, and though the operation was regarded at first with suspicion it was submitted to for the most part.

There seemed to be no medical officer with the German battalion, but only these men of the medical corps, or *Sanitäts* personnel. They carry a small bag of dressings containing among other things a hypodermic syringe and solution of morphine. The former is fitted into a bottle containing absolute alcohol to sterilize the needle. Stretcher-bearing, on our part of the line at least, was rather a crude operation as carried out by the Germans. A ground sheet, slung on a pole borne on the shoulders of two bearers, contained the unfortunate patient, whose

sufferings, if he had a fracture, must have been extreme. Other stretcher substitutes were also used—duckboards, for example. The stretchers used by the Germans further back are heavier than ours, but have certain advantages in the way of support for head, hinges for folding, and sliding handles; the two latter modifications enabled them to be packed in small space.

The German medical officers remain relatively far back, at the *Verbandplatz* or dressing station, and are attached to the regimental unit which corresponds more to our brigade. Thus we did not see a German medical officer at our advanced dressing station until nightfall, and he requested us to "carry on" while he busied himself with some food. He and two younger medical officers were much impressed by the completeness of our equipment and also by the quality of the dressings.

Going back in the dark we were taken to the *Verbandplatz*, a deep dug-out some four kilometres back. We wandered round the ruined village outside which it was situated for an hour and a half trying to find it, for our guide's bump of locality was but poorly developed. When we eventually reached it we were passed on elsewhere, a process which seems to have attained a high state of perfection in the German army. The meagre provision of surgical material at this station struck us forcibly. Splints consisted of pliable wire—two thick pieces joined ladder fashion by thinner pieces. This, while readily adaptable for fractures of bones of arm and forearm, is far too pliable when applied to the thigh and leg, as it often is. Another splint, Volkmann's iron gutter, is available for fractures of the thigh, but it does not secure extension or immobility in transport as does our own Thomas's splint.

Marching further back from this dressing station we passed the long line of German transport ready to move forward. Amidst a wonderful conglomeration of vehicles, including a brougham and pair, open landaus, Russian droshkies, we noticed the ambulance transport, consisting of small wagons each capable of taking two stretcher cases, drawn by two ponies, presumably of Russian or Rumanian origin, and each flying a small Red Cross flag. Thus it will be seen that the Germans adhere to the system of separating bearers and transport in their ambulance organization in the field. The *Feldlazarett* takes the place of our old field hospital.

Motor ambulances were not seen so far forward as they are in our own lines. Their deficiency in numbers is to some extent made up by attaching to each a string of two-wheeled trailers. The jolting in these must be hard on the patients.

After a tedious march spread over two days, and a dolorous experience of front line cages and prison lagers, we went for duty in a hospital for prisoners of war attached to one of the Bavarian *Kriegslazaretts*. The section for prisoners was established in a portion of a French hospital erected on the pavilion system. This hospital had been nearing completion at the beginning of the war. We found it full to overflowing with British wounded who were urgently in need of attention, as they had received no further dressing than the first. They lay on the beds, on stretchers, and on palliasses on all the available floor space in the wards above ground, as well as in the basement cellars. Our operating and dressing room was, to begin with, very dirty and sparsely furnished. A small coal stove served for the supply of hot water and the sterilization of instruments. A wash-hand basin was already fitted with a supply of cold water only, but as the waste pipe had not been fixed we had to run waste water into a bucket. The instruments provided were old, few in number, and partly denuded of plating; but this was remedied after two months or so as a result of a request to the *Chef-arzt*, who provided a set suitable for ordinary purposes. A gas stove was fitted later and the provision of electric light was completed.

After a time two sisters were sent to the hospital for duty, one of whom spoke English with some fluency, having spent a year in America. They made a considerable improvement in the arrangement and cleanliness of the theatre, confining themselves largely to work in it. The most rigid economy was entailed in the use of surgical materials. Sutures were of silk or plain catgut. Soap for washing hands was hard to obtain and varied much in appearance and cleansing powers. Soap powder with

sand, powdered washing soda, cakes made of a sort of clayey earth and of fine gritty material admixed with soap were supplied to us at various times, but sometimes none was available, and we went through the formality of hand-washing with hot water alone, trusting to prolonged immersion in sublimate solution to afford a degree of surgical cleanliness. For the latter reason, extensive use was made of dissecting and bullet forceps in doing dressings, and the wounds were not touched with the fingers as a rule. For the first month or so in the hospital we had long spells of hard work, for the most part draining wounds and compound fractures and removing foreign bodies. Rubber drainage tubes were scanty and were not supposed to be cut if not of suitable length. The bandages used were chiefly of paper. For securing splints, roller bandages made from lace curtains or cotton dress materials were used, albeit of necessity sparingly. These were collected from time to time, washed, and rolled again for use. A substitute for cotton-wool was provided in the shape of *Selkstoff*, made from paper. The better qualities of this were soft and absorbent, but the poorer, harder qualities were very bad substitutes. Benzol (substitute) was largely used in the process of preparing the skin, with tincture of iodine as a final application. For cleansing open wounds irrigation with diluted hydrogen peroxide was employed almost exclusively. Moist dressings of dilute solution of aluminium acetate on lint covered with jaconet were used for cellulitis. I endeavoured to obtain Dakin's solution for dressings, and succeeded in getting it for use in a case of gas gangrene.

There was no shortage of anaesthetics at the two hospitals at which I worked. Chloroform, ether, and ethyl chloride were available. In many German hospitals the latter is administered by the sisters for certain dressings. The patient's arm is raised at right angles to the body, and the administration of the anaesthetic ceases directly after the arm drops.

I may add to what I have said regarding splints that in fractures of the femur extension from a clamp applied to the skin over the lower end of the bone just above the condyles on either side is much employed by the Germans. So far as one could judge the skin over the points of pressure often became septic and sloughed, and the end results, seen later at another hospital, were marked by great deformity and shortening.

It is, I think, a testimony to the value of injection of antitetanic serum that we had few cases of tetanus among many hundreds of wounded. Four cases developed in succession in one ward. Two cases of gas gangrene were admitted, but no other cases were met with during five months.

Among the medical cases a variety of nephritis, and a condition (the result of slow starvation) characterized by weakness, shortness of breath, emaciation, oedema of the feet and legs, and anaemia, was frequently met, as was influenza, often followed by pneumonia. The latter occurred as a primary disease, too, and in the poor starved men, who sometimes remained at their camps without treatment for days before admission to hospital, was often rapidly fatal. Diarrhoea and dysentery were rife, especially the former. Impetigo, furunculosis, and scabies were, as might be expected, relatively common. The conditions first mentioned were especially noticeable among the newly captured men from the working camps around, who were not only starved but also dirty and ill clad, having disposed of part of their clothing for food. Many of these men before coming back to those prison camps had worked at the front in shelled areas, sleeping in shell holes with no means of washing, and on the poorest of food doled out in a fashion which would have delighted the heart of Mr. Squeers. They were not, of course, in receipt of Red Cross parcels, and their condition was very different from that of the older prisoners in the camp next to our hospital, who had been brought from Germany, and who had parcels with food, soap, and good warm clothing supplied to them from home.

The drugs, supplied chiefly in tablet form, were of good quality—acetyl salicylic acid, veronal (substitute), pyramidon, morphine, dionine, ipecacuanha and opium powder. "solvent tablets" (ammonium chloride and extract of liquorice), bismuth subgallate, subnitrate, and carbonate; sodium bicarbonate, urotropine (substitute), theobromine salicylate (diuretin), and so on. Great reliance was placed

by the Germans on the injection of oily solution of camphor as a stimulant.

Hospital Dietary under three Main Heads.

Form 1 (ordinary diet).—Breakfast: Black bread and coffee. Dinner: Half a bowl of vegetable or macaroni soup containing a small quantity of meat. On Friday this was replaced by boiled rice with a spoonful or two of dried fruit. Tea: Black bread with jam, "tea," or "coffee." Supper: Black bread, with occasionally a small piece of sausage, or bread and meal gruel.

The black bread was accountable for much diarrhoea. Often it was sour and contained a percentage of quite indigestible irritating gritty material. The latter came partly from adherent sawdust in which the loaves were rolled on baking. Coffee and tea were substitutes for the real article, of course.

Form 2.—This diet was similar to *Form 1*, except that three thin slices of white war bread with margarine were given in lieu of black, and a rather more digestible kind of soup was provided. In our hospital extras, such as a small amount of milk, an egg, or a small glass of wine, could be ordered. The eggs, however, were often bad, and the supply ceased during the summer.

Form 3.—This diet was supposed to be suitable for diarrhoea cases. It consisted of thin gruel, purée of potatoes, etc.

The white bread given was insufficient in quantity, and patients who became more fit usually asked to go on *Form 1*, even though the bread was black, for the sake of the larger quantity obtained.

The beds in the wards were of wood and roughly constructed. The mattresses were made of paper sackcloth filled with wood shavings, over which a sheet was placed. When the wood shavings became broken and flattened out by the patient's weight the bed was extremely hard, and bedsores were almost inevitable in helpless patients in spite of prophylactic care of the skin. The only air ring cushion in the hospital was leaking beyond repair and no other rubber cushions or water beds could be obtained. A shift was made with rings of straw covered by bandage.

Clean bed-linen was a rare commodity, and as there was no means of disinfection of clothing for bed cases lice were present in large numbers. After a time the *General-arzt* of the Bavarian army, who inspected the hospital, provided a portable steam disinfecter.

Baths were given to walking cases and personnel at a large factory in the town which had been fitted with a bathing and disinfecting station. The system here was good. When the soldier went in he undressed and put his leather articles and valuables in a numbered compartment of a large rack. His clothes he hung on a numbered coat-hanger, and this was then placed in one of several large steam disinfectors. The man then went to the bathroom, which was fitted with hot and cold water sprays and a limited number of body baths. On coming out he went into a room heated by steam pipes for a time until his clothes were ready. Later we had a couple of sprays fitted in a room in the hospital for the use of such patients as could stand a cold douche.

The conservancy system in the hospital was crude. Large pits were dug and lined with brick and cement; over these the latrine houses and seats were built. From time to time these cesspits were pumped out into horse-drawn tanks, an unpleasant operation. Needless to say these latrines were also a source of nuisance at other times. During the summer flies gathered in force.

We left this hospital at the end of August and spent several days at a prison at Condé on the French frontier, where our unpleasant recollections of poor food and vermin-infested blankets are tempered by the memory of the kindness of a French lady, living opposite the prison, who smuggled in to us bread, lard, vegetable soup and a ragout of haricot beans and potatoes as often as she could. We then travelled by way of Brussels, Namur, Luxembourg, Metz and Strasbourg to Karlsruhe; from there we went to Rastatt in Baden, our place of captivity for the next two months. From Rastatt five medical officers were sent early in November to Langensalza in Thuringia, but the day after arrival I was sent on with a colleague to Ohrdruf.

There was a marked difference between our journey from France to Baden and our later journeys by rail. Whereas on the first we travelled fourth class, and received one hot meal only—a bowl of soup—at a soldiers' refreshment room, on the later journeys we travelled second class and were permitted to have meals at the station restaurants. The last stage of our journey coincided with

the outbreak of the revolution. At the railway station our guard was deprived of his shoulder straps showing the number of his regiment, and his cap badges were also removed. Trains flying the red flag, crowded with troops without arms and badgeless, passed through the station. The red flag was flying over an aeroplane factory at Gotha, over the station and over various barracks. Aeroplanes flying low dropped leaflets over all towns and villages requesting the troops to join in the movement.

As a result of this change we were informed on arrival at our destination by a private soldier wearing a red armlet that he was now head of the hospital, and that all requests must be addressed to him. A new *Chef-arzt* of socialistic opinions was introduced to the hospital, but as he was closely supervised by the *Soldatenrat*, or soldiers' council, he was more or less powerless, and we had few dealings with him beyond drawing his attention to various matters in connexion with the sanitation of the hospital.

We left this hospital on Christmas Day by hospital train, taking all the British with us. Lying cases were conveyed to the station in pantechnicons, the floors of which were covered with mattresses. The hospital train provided by the Germans was good of its kind, and had enough bunks, with clean bed-linen, for the majority of the patients. A day and a half later we ran alongside the naval hospital ship *Garth Castle* at Stettin, where we were warmly welcomed, and on her we travelled in all comfort.

We returned from Germany with a higher opinion of British organization than ever before.

THE ADJUSTMENT OF RESPONSE TO NERVE STIMULUS IN VOLUNTARY MUSCLES.

BY

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This paper is founded on the result of tests made upon many hundreds of men wounded in the present war, in the electricity departments of two of the largest military orthopaedic hospitals. The patients pass through these departments to be tested and treated for every grade of nerve injury, ranging from slight shock or compression to complete division. Nerves are sutured in the operating theatres, and their subsequent regeneration and the reaction of the muscles they supply observed through all the stages of recovery, while oncoming compression from formation of fibrous tissue in healing wounds may be observed with all its resulting effects upon the response of the muscles to various forms of stimulus.

The observations here recorded were made by means of an apparatus the essentials of which are a transmitting rod resting upon the skin over the muscle observed and attached to a tambour connected with a pen tracing its movements upon a revolving drum. This apparatus records the character of each muscle contraction with accuracy and reliability.

The electrical stimulus used was the closure of the circuit of a galvanic current by a metronome interrupter with mercury make and break. This gives a stimulus of indefinite duration.

Unless otherwise stated, both electrodes were placed over the muscle. When the term "normal" occurs in describing the contraction of a muscle, it is used to denote equality with the opposite and uninjured side. The metronome has in all cases been timed to interrupt sixty times a minute, so that the resulting contraction can, when desired, be expressed in fractions of a second.

It has not been considered necessary to record the temperature of the room or other details which might alter the character of the response in a small degree, because the value of the tests depends upon the comparisons between the muscles of the two sides, and the conditions have been identical for these in all cases. The tracings are reproduced from the original records made by the pen on the paper of the revolving drum.

The Contraction of Normal Muscle.

The first tracing (Fig. 1) shows the contraction of a normal muscle (biceps brachialis). The upstroke and

downstroke show that the contraction and decontraction of the muscle occupy practically the same length of time.



FIG. 1.

Never in this long series of tests has a muscle supplied by a normal nerve been found to show any visible difference in character from the same muscle on the opposite side, even though it may be so much wasted (as in a limb splinted for long periods for compound fractures) that a galvanic response is only obtained with great difficulty.

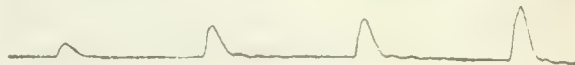


FIG. 2.

Fig. 2 shows the succession of contractions in a normal muscle produced by stimuli the strength of which has been gradually increased, and the tracings show that the smallest contraction produced by the weakest stimulus is exactly equal in length to the greatest contraction produced by the strongest stimulus. In other words, it shows that within certain limits the duration of contraction in a muscle is the same whatever its strength.

On one side of this limit are contractions excited by a stimulus so small that the resulting movement is partly lost by the yielding of the surrounding tissues, and on the other, contractions so violent that the surrounding tissues take appreciable time in returning to their resting position.

The wide range in the records shown in this figure are enough to demonstrate that slight variations in the height of the contraction when comparing two sides are quite immaterial. Another fact observed is that, except in cases of disease of the muscle, which do not come within the scope of this paper, successive contractions recorded from any muscle, whether the nerve be injured or not, are always the same length at any given observation.



FIG. 3.—Polar reversal (extensor carpi radialis longior).

Fig. 3 shows tracings taken when one electrode was placed over the normal muscle and the other at a distance. By means of a reversing key the poles were reversed before each stimulus, so that the contractions were excited alternately by the short sharp stimulus produced at the negative pole, and the diffuse stimulus of a virtual negative deep in the tissues. It will be seen that the length of the resulting contraction is the same in each case.

Abnormal Contraction of Muscle.

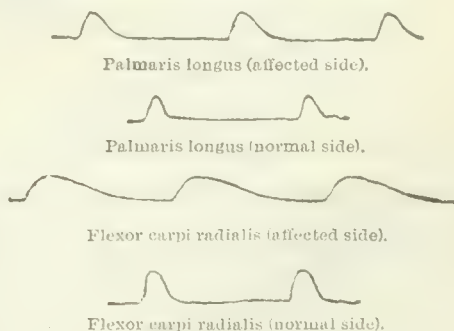


FIG. 4.

Figure 4 shows tracings taken from the palmaris longus and flexor carpi radialis of a patient whose median nerve had been involved in scar tissue. An exploratory operation had been performed, and the nerve was inspected and found to be as stated.

In this case, although the fibres of the nerve were compressed by the scar, they were not destroyed, because they were found to transmit a stimulus to the muscles they supplied when excited immediately below the constriction by the faradic current.

On comparing the contractions of palmaris longus on the affected side with the normal side, it is seen that

though the contraction producing the upstroke of the graphic record is equally brisk in each case, the downstroke produced by the decontraction of the muscle is slightly longer on the affected side, showing that the contraction has lasted for a longer period in the muscle with the impaired nerve supply than in the muscle with the normal nerve supply. On testing the muscle by means of the interrupted faradic current it was found to give somewhat weakened response, showing that its nerve fibres were still functioning. In short, it was a case of slight interruption to the motor nerve, and it showed a slight lengthening of contraction in the muscle.

On the other hand, the flexor carpi radialis gave no response to the faradic stimulus, showing that its fibres were further implicated than those of palmaris longus. Accompanying this sign we see that the curve of contraction is very much more lengthened than that of palmaris longus.

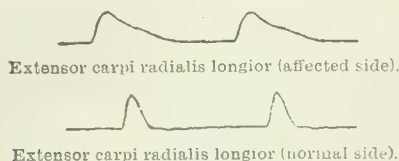


FIG. 5.

Fig. 5 shows tracings of the contractions of the extensor carpi radialis longior after complete division of the musculospiral nerve. The contractions are lengthened to about the same degree as those of flexor carpi radialis in the preceding figure.

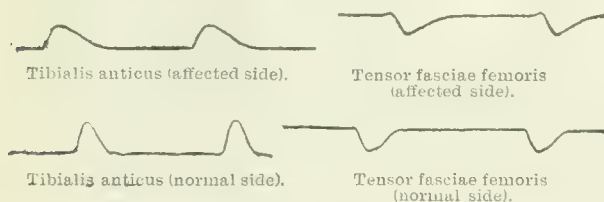


FIG. 6.

Fig. 6 exhibits the contraction of the tibialis anticus and tensor fasciae femoris of an officer who had slightly displaced his right sacro-iliac joint. After this he suffered from weakness in the muscles supplied by the fourth and fifth lumbar nerves, of which the above two were selected for the test. The response of the muscles to faradic stimulus was apparently normal, but the tracings show that on the affected side both these muscles gave lengthened contraction. The fourth and fifth lumbar nerves cross the sacro-iliac joint, and their slight involvement in the inflammation of the joint had resulted in a slight inhibition of their function. The tracings of tensor fasciae femoris are reversed owing to its action in retracting the surface of the thigh.

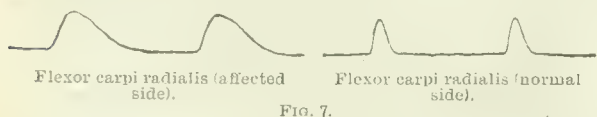


FIG. 7.

Fig. 7 records the contraction of the flexor carpi radialis in another case of nerve compression. There was a weak response to faradic stimulus, showing incomplete interruption of the median nerve, and the curve shows that the contractions, though lengthened, are not of such length as is reached in complete reaction of degeneration. A few days after this record was taken, as the ulnar nerve gave signs of complete interruption, an operation was performed for its suture, and the median nerve was found to be slightly involved in scar tissue.

Observation shows that in a case of oncoming compression the first sign to be observed in the muscle supplied by that nerve is a slight lengthening of the response, which increases as the nerve becomes more involved, until a point is reached when the lengthening proceeds no further. This stage occurs while a faradic response is still obtainable. The contractions then last commonly a third of a second. In a case of complete nerve division the response quickly becomes this length and remains so until nerve regeneration has taken place. When the new

axis cylinder has grown down to the muscle after nerve suture, the response to faradic stimulus of the nerve is again established, but it is not until some time after this (several weeks) that the length of contraction in the muscles starts to shorten. The shortening then gradually takes place until (usually after a space of several months) the myograph shows the response to be reduced to normal length.

Having now shown that in cases of motor nerve interruption, partial or complete, the contractions of the muscle supplied by it are lengthened, and having stated that of the many hundreds of cases examined no single case has occurred in which this sign has been absent, I will deal next with cases in which contraction of the muscle has been observed to be shorter than the normal.

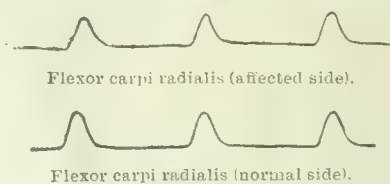


FIG. 8.

Fig. 8 is a myogram from a case typical of those described by Babinski and Froment and shown by them to be of reflex origin. The patient was an officer who had sustained a simple fracture of his radius. The limb was splinted and the bone united in good position. When union had taken place a condition of tetanic contracture arose in the flexor carpi radialis, none of the other muscles of the forearm being affected. The condition persisted for ten months without relaxation, causing the fullest possible flexion of the wrist.

In order to distinguish the case from one of hysterical contracture, I had the patient deeply anaesthetized, and it was seen that there was not the slightest relaxation of the affected muscle. The case was, in fact, typical of an irritative lesion of afferent nerve fibres, causing a reflex contracture of flexor carpi radialis through the median nerve. It will be seen that the curve of contraction made by the affected muscle is shorter than on the normal side.

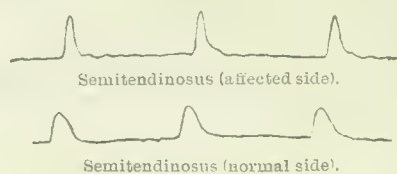


FIG. 9.

Fig. 9 is a tracing of another reflex contracture, involving the semitendinosus. The contracture came on shortly after a wound of the hamstrings, and had persisted for two months when the myogram was made. This patient also was deeply anaesthetized, and no relaxation of the affected muscle took place. The shortening of the response in the affected muscle in this case is much more pronounced than usual. Observations made upon several of these reflex contractures have produced a like result in each case.

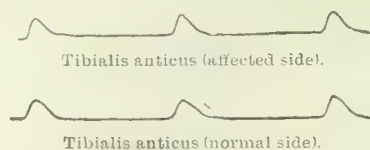


FIG. 10.

Fig. 10 is a tracing made from the contractions of tibialis anticus in a patient who had suffered from cerebral haemorrhage four years previously. This upper neurone affection had produced hemiplegia, from which he was still suffering at the time of observation, but only to a slight degree. His movements were weak on the affected side, and his reflexes much exaggerated in the leg observed. Here it is seen again that the contractions of the muscle recorded from the affected side are shorter than on the normal side. This result is typical of other cases observed.

In all these cases of an abnormal shortening of muscle

contraction, the difference from the normal is not nearly so great as in the cases of lengthened contraction, but it is perfectly clear.

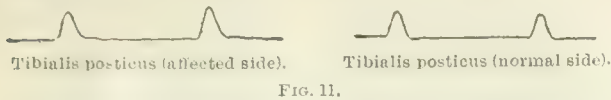


FIG. 11.

Fig. 11 records the contraction of the tibialis posticus in a case of hysterical contracture which had persisted for over twelve months. The muscle was tensely contracted, leading to equino-varus position of the foot, and the condition had begun after injury to the thigh. Unlike true reflex contractures, this condition was cured after a short course of psycho-therapy. It will be seen that the contractions of the affected muscle are of exactly the same length as on the normal side, and it was this observation that led to the adoption of psycho-therapy as the suitable treatment.

Conclusions.

In the foregoing records I have shown that after injury to a motor nerve the muscles supplied by the injured fibres respond to stimulus with a contraction longer in duration than that of normal muscle, and that this has been observed in every one of the many hundred cases tested. It appears to me that this lengthening of the contraction is due to hyper-excitability in the muscle following a definite sequence of events, though there is an alternative conclusion which I am at present investigating.

It is a matter of common knowledge that when for some pathological reason the stimulus from the upper motor neurone weakens or ceases, the anterior horn cells of the lower neurone become hyperexcitable, and the muscle tone is increased.

In health there must always be a delicate adjustment between the irritability of the upper and lower neurones, so that the lower respond in a proper degree to the stimuli passed down from above. For this reason it is a natural sequence for the lower neurone to become hyperexcitable when for any reason the upper stimuli become less intense, and we know that in upper neurone impairment this hyper-excitability is increased to a pathological degree, as shown in the exaggerated reflexes of such cases as cerebral tumour, certain injuries of the cord, etc.

There must also be an adjustment of irritability between the lower neurone and the muscle. As an instance of lower neurone interruption the most typical case to cite is one of complete division of a nerve.

In Fig. 5 the record of the contraction of extensor carpi radialis longior after division of the musculo-spiral nerve shows a great lengthening of the period of decontraction, and that is exactly what one would expect if the excitability of a muscle were increased. That it is not a slowness of contraction is made evident by the angle of the upward line showing the contraction of the muscle. It is true that frequently this upstroke is more slanted than normal in tracings of muscles whose nerve supply has been retarded, but this difference is always very slight compared with the difference in the length of the line showing the decontraction, and I ascribe it to slight tissue changes owing to disuse. At any rate, in many cases, as in that shown in Fig. 5, there is no slowing of contraction displayed while the period of decontraction is much prolonged. I think this lengthening of the period of response of paretic muscle is not to be associated with the chronaxie (rapidity of excitability) of a muscle, because it has been abundantly proved by Lapique and others that the chronaxie of these muscles is increased to as much as thirty or forty times the normal, whereas I have shown that the response to the stimulus lasts at most three or four times as long as the normal. In fact, the chronaxie would appear to bear no further relation to the contraction of the muscle than the flash point of an explosive to the explosion.

In the examples exhibited above, it has been shown that when the nerve impulse is slightly retarded, the muscle responds with a slightly lengthened response; that when the nerve impulse is further retarded, the muscle responds with a further lengthening of the response; that when the nerve retardation reaches a certain point, the muscle reaches a limit of response beyond which it cannot go, and this response is the same in cases of severe nerve compression or of complete division of the nerve. We have

seen also that after suture of the nerve, and its subsequent regeneration, response to faradic stimulus first appears in the muscle, proving the dawn of the new nerve supply. Then after a period the muscle begins to respond first with a slight shortening of the contraction, and then, following the gradual establishment of nerve influence, with a gradual further shortening until, following the complete regeneration of the nerve, the muscle response is restored once more to its normal length.

It is not intended here to dwell upon the great value as an aid to the more exact diagnosis of delicate nerve lesions which is to be found in the phenomena above described, but rather to look upon the subject from a purely scientific standpoint.

Having stated that probably the excitability of the muscle is increased as a result of decreased stimulus from the nerve, and that this is in the nature of an attempt at adjustment on the part of the muscle, it now remains to be shown in support of the latter statement that when the excitability of a lower motor neurone is increased that of the muscle is reduced. For this purpose I have selected the three cases given above—one of upper neurone affection, with the exaggerated reflexes common to these cases, and the others of contracture of the muscle due to reflex irritation, and in each of these cases the duration of response in the affected muscles has been shown to be shortened. These instances present a picture of protective hypo-excitability in muscles supplied by hyperexcitable nerves.

Summary.

1. A muscle undergoing a succession of stimuli of varying strength responds with a succession of contractions of varying intensity but of equal duration.
2. The duration of the contraction of a muscle is the same whether it occurs in response to a short sharp stimulus or to a long diffuse stimulus.
3. When the conductivity of a motor nerve is slightly reduced by slight compression or injury the duration of response in the muscle it supplies is slightly lengthened.
4. When the conductivity of a motor nerve is much reduced or entirely destroyed the duration of response in the muscle is much lengthened.
5. When the stimulus from a motor nerve is abnormally and persistently increased the duration of the response in the muscle supplied by it is shortened.

A CONTRIBUTION TO THE STUDY OF ACUTE RHEUMATISM.

BY

F. JOHN POYNTON, M.D., F.R.C.P. LOND.,

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THE case here briefly recorded was remarkable in its clinical course, but medical literature abounds with so many surprises that this in itself would not justify publication. It is because it adds one more link to the chain of evidence upon the cause of acute rheumatism that I believe it to be of value to the student of the disease.

R. K., a girl aged 17, machinist, was admitted to the hospital July 2nd, 1918, suffering from weakness, nervousness, palpitation, and dyspnoea on exertion. A pale, thin, delicate girl, she was obviously the victim of Graves's disease and organic heart disease. The cardinal symptoms of enlarged thyroid, exophthalmos, tachycardia, and tremor, with von Graefe's sign, were all present. The heart was considerably enlarged, and there was a double mitral murmur. The history was of some interest, for the heart disease dated from an attack of rheumatic fever two years previously, and at the same time the thyroid enlargement was noticed by her doctor. The association of Graves's disease and acute rheumatism is one that is well recognized, but it is exceptional for the two conditions to be noted simultaneously.

The course of the case was at first uneventful, treatment by x-ray applications and sedatives producing some gradual improvement. On August 19th, however, she developed a severe sore throat, the temperature rose, and multiple arthritis affecting the ankles, wrists, and shoulders followed, and it was clear that she was commencing another attack of rheumatic fever. A rheumatic erythema developed, followed by cardiac dilatation, and on September 1st pericardial and pleuro-pericardial friction.

From this date onward her condition became extremely grave, the pericardial friction became general, and there followed all the signs of an unusually copious pericardial

effusion. The area of cardiac dullness extended upward and to the right and left, with muffling of heart sounds, small and rapid pulse, and collapse of the lower lobe of the left lung. Exploration excluded pleural effusion, and after fluctuations in the severity of the symptoms and failure of local applications, Mr. Raymond Johnson tapped the pericardium on October 6th, far back on the left side, and drew off 18 oz. of sero-fibrinous fluid, which during withdrawal showed the characteristic pulsatile stream.

The fluid was centrifugalized, and both free and in still greater numbers taken up in the leucocytes, were demonstrated numerous minute diplococci.

Recovery was remarkably rapid, the temperature falling to normal four days later—after a course of irregular fever lasting five weeks, and reaching at times to 103° F. The pulse-rate, which had reached to 156 in the minute, fell to 112, and the impulse of the heart became well defined and forcible in character. A wave of severe influenza then spread through the ward and the patient was attacked—needless to add, to the general dismay. From October 14th to the 22nd there was fever, which on two occasions touched 103.8° F., but the attack was passed through without serious pulmonary complication or cardiac dilatation. From that date onward she made uninterrupted progress, leaving the hospital for Christmas, with a well compensated mitral lesion. A month later improvement was maintained, but two months later the thyroid, which had diminished greatly in size during her acute illness, together with all the other signs of Graves's disease, had commenced to enlarge again, coincident with an exacerbation of the exophthalmos—and it was apparent that there was a relapse of the hyperthyroidism—for which she is again under treatment.

There is no doubt that there is much quiet scepticism as to the reality of the diplococcus, due in part to the difficulties in demonstrating its presence, the infrequent opportunities afforded, and its minute size. It may be said to hold among bacteria the position of the famous Mrs. Harris of Sarah Gamp fame. Such being the prevalent attitude of mind, it is obvious that *post-mortem* contamination is a ready explanation for the results which have been obtained from cultures, for few can spare the time to sift the detailed evidence to the contrary which, at best, makes dull reading. This case, however, presents, I think, a clear issue. A patient, the victim of acute rheumatism, with a heart injured by a previous attack, passes through a second most severe one while under observation in hospital. A general pericarditis with copious effusion develops, and the fluid withdrawn by paracentesis shows numerous minute diplococci, some in the fluid, many more carried up in numbers by the polynuclear leucocytes.

The stage of the illness is one in which the acute phase is subsiding, but death is threatened from mechanical embarrassment. This patient does not die, the effusion does not return, the temperature falls, and eventually the recovery is so good that she leaves the hospital able to walk short distances, and with a compensated mitral lesion.

Some years ago Dr. Paine and I recorded the isolation of the diplococcus from the blood stream and synovial fluid during life, and we have repeatedly emphasized the rapid destruction of the diplococcus in animal tissues by leucocyte and tissue cells. Now we have once more the proof of its presence in the fluid from the pericardium of a patient who is living, and we have gained a further step in its life-history in man, and further light upon the process of recovery in rheumatic pericarditis. Clearly the cells in the exudate are busy destroying the diplococci in great numbers, and we are not surprised that cultures may not prove invariably successful, for we have always to bear in mind that if the process of their destruction is already in progress, the sudden transfer to a culture medium which can but imperfectly represent the living human medium may give the final death blow to the harassed micrococci.

This has been the first case in which I have been fortunate enough to obtain a living pericardial exudation in man in this particular phase, and it completely supports the results of experimentation.

This result also serves to strengthen the extreme probability that in the human cases of rheumatic pericarditis in which there is little effusion but great thickening of pericardial tissues, the diplococci are shut in the necrotic areas but imperfectly destroyed; and, lurking there, flare up into virulence from time to time, and thus cause the intractable relapsing examples met with in childhood. Lastly, we can realize how difficult it must be to determine, when once a patient has been infected, whether a renewal of symptoms is evidence of a fresh attack or the recrudescence of latent disease, and we are confirmed in

the faith that rheumatism must if possible be prevented, and failing this, be most persistently guided to as complete a recovery as possible.

FOUR YEARS' WORK AT AN ANTE-NATAL CLINIC.

By ARTHUR CROOK, M.R.C.S., L.R.C.P.

In this account of the work of the ante-natal clinic at the Norwich Maternity Institution during the four years 1915-18 I shall endeavour to indicate, not results, but some lines on which future work may profitably be pursued.

The patients were drawn from those who went to the institution for attendance in their homes in the surrounding district, supplemented by patients sent by the M.O.H. and a few by private doctors and midwives. The total number was 308 (151 primiparae and 157 multiparae).

The notes of the cases were filed on a card index system, and the figures and statements here given are based on these cards, and the corresponding labour and puerperium cards kept by the attending midwife.

All the primiparae were required to attend the clinic as a matter of routine, and such multiparae as complained of symptoms which might indicate abnormality as well as those who in the judgement of the "booking" midwife at the institution showed by their previous history or symptoms that there might be some abnormality.

The examinations were made at all stages of pregnancy; the women were encouraged to book early, but if they did a further examination was made at the end of the seventh month or afterwards, to decide, if possible, the factors not previously ascertainable, namely, the relative size and position of the fetus to the pelvis.

A physical examination was made of all the primiparae; it included mouth (teeth), throat, neck (thyroid), chest, abdomen (greatest girth), pelvis and limbs (oedema and veins). An examination of the urine was made at least monthly, from specimens sent to the institution. The blood pressure was estimated in many cases (Riva-Rocci instrument). The same routine was followed in multiparae when previous history or symptoms indicated it.

Pelvic Measurements.

Two cases of contracted pelvis were found. One with 2½ in. conjugate, was admitted, and Caesarean section performed with success. The other, with a conjugate of a little less than 4 in., and giving a history of several difficult breech labours, with death of the child in all instances, was unfortunately, owing to pressure of work and depletion of staff, lost touch with; she did not come back for further examination at a later date as instructed, and was not seen again by me till well advanced in the second stage of labour, at least a month over her calculated date; a rapid delivery with forceps of an overgrown stillborn child did not save her in the profound state of collapse in which she then was; undoubtedly if the clinic had been able to keep in touch with her through a visiting nurse this bad result would not have occurred.

In a large proportion of primiparae (63) the interspinous (anterior superior) measurements were 9 in. or less to as low as 7½ in. in one case; of these only six were recorded as having any abnormal prolongation of labour, thus confirming Bourne's statement.¹ In many of these cases the estimated conjugate was not more than 4 in., indicating a small type of pelvis, but with a child not above the average size trouble need not be anticipated. "Whites," meaning by this discharge abnormal in quantity or quality, occurred in 48 women; the proportion of cases with "whites" rose steadily from 10 per cent. in 1915 and 1916 to 20 per cent. in 1917, and to 25 per cent. in 1918. In all these cases treatment was given during the pregnancy, and on the card for the attendant midwife was a prominent notice directing her, if in time, to give a douche before labour, and to instil protargol into the eyes of the infant. It is satisfactory to record that not a single case of severe ophthalmia occurred in the four years. No case of syphilis either in the first or second stage was met with.

There were seven cases of heart disease with some breakdown in compensation; all except one got through labour

without help, beyond the internal administration of strychnine and digitalis during the last weeks of pregnancy; the exception, not apparently a bad case, was found dead in her bed a few weeks before full time: she had been taking the drugs mentioned. This case illustrates the extreme difficulty of treatment and prognosis in cases of heart disease with pregnancy—a difficulty which should, however, be largely removed if a sufficient number of cases could, after careful examination, be watched at ante-natal centres through pregnancy and labour and afterwards.

The so-called physiological enlargement of the thyroid gland in pregnancy was not met with; not more than two or three of the patients showed any signs of thyroid hypertrophy, and in them it was of old standing.

A comparison of the maximum girth of the abdomen during the eighth or ninth month of pregnancy and the weight of the children immediately after birth was made in 148 cases; excluding 5 cases noted as fat, and one of hydramnios, the results seem to indicate that with a girth not exceeding 36 in. the child will not weigh more than 7 lb.; this confirms the rule laid down, I believe, by Ayres in America and quoted by Herman.

The blood pressure in normal pregnancy seems to be unaltered. An abnormal blood pressure may be due to an abnormal pregnancy or some disease complicating normal pregnancy.

Among the cases found with albumin in the urine, one, a primipara, came in 1916, late in her pregnancy, with a large amount of oedema and urine almost solid on boiling; she was immediately admitted and labour induced. She still (January, 1919) has a heavy trace of albumin in her urine and morning headaches. This failure of complete recovery after delivery, seen in some cases of albuminuria in pregnancy, should receive more attention. Is it due to the intensity of the initial attack, to the length of time the kidney complication exists, or to a renal lesion in existence previous to the pregnancy? If the last be the explanation, can treatment from the commencement of the pregnancy prevent or keep it in abeyance sufficiently for a living child to be delivered without undue danger to the mother? The records of some cases of chronic renal disease with pregnancy point somewhat to this last possibility.

Cases of excessive venous engorgement of the veins of the lower limbs were treated by bandaging to just below the knee, and in many cases the patients given aperients combined with strychnine and digitalis internally. The etiology of this complication of pregnancy is by no means clear; it cannot all be due to mechanical causes, for a woman in two successive pregnancies under equal conditions may in one pregnancy have distended veins and in the other no signs of them. I am at present inclined to consider it a question of circulatory power.

Multiparae who presented no detectable sign of disease or abnormality of the pregnancy, but came complaining of "feeling faint," "bad feelings," or a history of an early slight loss of blood in pregnancy, showed by an examination of their labour cards a great liability to give birth to stillborn or premature non-viable children, and the unknown cause of this fetal mortality leaves a valuable field for future research work. I am not here including cases whose history is typical of an old syphilitic infection with pregnancies terminating later and later in gestation, but rather cases giving the impression of a frail constitution, possibly the future victims of tubercle, heart failure, or renal disease.

In conclusion, one rare curiosity was observed—the patient had advanced disseminated sclerosis and pregnancy; her labour was normal, but she died some weeks later of her nervous disease.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, January 18th, 1919.

The Milroy Lectures

ON

HALF A CENTURY OF SMALL-POX AND VACCINATION.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

BY

JOHN C. McVALE, M.D., LL.D.

CONTROL OF SMALL-POX IN THE PRESENT DAY.

HAVING discussed small-pox as it was and is, and vaccination as it was and is, we now come to the important practical question of the control of small-pox in the present day. In considering this subject it is necessary to take account alike of the attack and of the defences. As to the former, small-pox in this country is, broadly speaking, a less fatal, a less infectious and a less prevalent disease, than it was fifty years ago. The diminution (which first appears definitely in the 1892-95 epidemic), while irregular, has been fairly continuous and has been very specially notable since about 1904.

Other factors in respect of attack are that the disease is not infectious in the incubation stage, that its infectivity is limited in the pre-eruptive stage and does not reach its maximum until vesiculation and pustulation, that it is not conveyed by water supply nor by drainage, that milk epidemics are unknown, and that there are no chronic carriers. Epidemics also often begin slowly, and when that is the case there is an appreciable period within which urgent measures may be carried out by a vigilant public health authority. The several weapons in the armoury of communal defence have now to be considered.

I. VACCINATION.

Vaccination and revaccination at once claim the first place. On the one hand, owing to increasing neglect of systematic infantile vaccination an increasing proportion of the population is not immune to small-pox, but on the other hand the calf lymph system of the Local Government Boards is of the first importance as a measure of defence. In the old days, as I have already pointed out, all that could be relied on in presence of the most extensive epidemic was the exiguous supply of humanized lymph which could be obtained once a week from the arms of infants under the routine of primary vaccination at the age of three months in England and six months in Scotland. Now a huge stock of half a million tubes of glycerinated calf lymph is kept in constant readiness, fresh material being regularly added to replace material which, through lapse of time, is regarded as of doubtful efficacy. Also the vaccinal process runs a shorter course than the incubation stage of small-pox, and if the protective operation be performed within two or three days after infection, vaccinia gets home first, and variola, when it comes along, usually finds the fortress barred against its entrance. The position, however, has its disadvantages. There is always the possibility that the operation of revaccination may not be successful, and this is a risk which has to be run by the individual who has previously neglected to protect himself. Other things being equal, the work of vaccination should be done leisurely and systematically. In revaccination the convenience of the youth or adult concerned should be considered, especially with regard to the opportunity for taking a few days' rest from any heavy manual labour, to prevent inflammation around the vesicles on the vaccinated arm. Even under a system of emergency or panic vaccination this rest should be obtainable if required, especially because experience indicates that there is more likelihood of an inflamed arm in the adult than in the child. But there should be little incapacity if the vaccination has been done in cleanly fashion and is covered up with cotton-wool and boracic acid whenever it is seen that a marked reaction is to follow.

Recent Vaccination.

Vaccination or revaccination in presence of an epidemic has the supreme advantage of recency. The immunity obtained is of the highest degree. The outstanding example of the effect of recent revaccination on a large

THE American Congress of Physicians and Surgeons will be held in Atlantic City this year on June 16th and the two following days. It was to have been held in Washington, but owing to the uncertainty of hotel accommodation there the place of meeting has been changed.

A CONGRESS on the history of medicine is to be held at Antwerp in 1920, on the occasion of the golden jubilee of Dr. Broeckx, the first medical historian of Belgium, and of the third centenary of the foundation of the Antwerp Medical Club in 1620.

scale in this country is that of the city of Glasgow in 1901-2. Glasgow had prepared at enormous expense a great international exhibition, and fear arose that it would prove a municipal and financial failure owing to a threatened epidemic of small-pox which would prevent visitors flocking to the city. In these circumstances the Corporation, acting on medical advice, entered on a great vaccination crusade throughout its borders. It employed and paid the whole medical profession of the city to vaccinate all who could be induced to accept the protection, and the medical officer recorded the results fortnight by fortnight. They are set down here in tabular form.

TABLE V.

Not Recently Revaccinated and Recently Revaccinated Population of Glasgow, over Five Years of Age, in each Fortnight, with the Case of Small-pox occurring in each Class. (Dr. A. K. Chalmers.)

	Not Recently Revaccinated.		Recently Revaccinated.	
	Population.	Cases Registered.*	Population.	Cases Registered.
1901.				
Jan. 12 ...	675,887	23	0	0
.. 25 ...	674,816	350	1,071	0
Feb. 9 ...	671,025	203	4,862	0
.. 23 ...	634,213	127	41,674	0
Mar. 9 ...	556,561	299	119,326	0
.. 23 ...	518,426	161	157,461	0
April 6 ...	474,694	92	201,193	0
.. 20 ...	429,056	67	246,831	0
May 4 ...	384,371	28	291,516	0
.. 18 ...	366,125	18	309,762	0
June 1 ...	352,633	11	323,254	0
.. 15 ...	347,777	2	328,110	0
.. 29 ...	345,293	8	330,594	0
July 13 ...	281,867	1	394,020	0
Nov. 16 ...	279,452	1	396,435	0
.. 30 ...	279,232	5	396,655	0
Dec. 14 ...	279,020	4	396,867	0
.. 28 ...	278,796	0	397,091	0
1902.				
Jan. 11 ...	278,623	28	397,264	0
.. 25 ...	278,152	23	397,735	0
Feb. 8 ...	277,653	23	398,234	0
.. 22 ...	277,134	147	398,755	0
Mar. 8 ...	276,033	92	399,854	0
.. 22 ...	274,611	85	401,276	0
April 5 ...	272,694	36	403,193	0
.. 19 ...	271,619	15	404,268	0
May 3 ...	271,032	10	404,855	0

* The cases under five years have not been excluded from these figures, because their allocation through the various fortnights would have been difficult, and their inclusion is unimportant. In the 1900-1 part of the outbreak these numbered 60, 54 of whom (including 30 cases occurring under one year) were unvaccinated primarily.

It will be noted in the first column how the population not recently revaccinated was gradually diminished from 675,887 in January, 1901, to 271,032 in May, 1902, and how correspondingly the recently revaccinated population increased from *nil* in January, 1901, to 404,855 in May, 1902. During all that period the small-pox cases were also noted fortnight by fortnight. From beginning to end they were confined absolutely to the not recently revaccinated section of the population. Not a single case occurred among the recently revaccinated, and when another epidemic broke out after an interval of fully a year, only one of the 400,000 revaccinated was attacked.

Money Payments.—To enable a vaccinee to take a few days' rest after the operation many public health authorities in presence of threatened small-pox now offer a small money payment, especially to the inmates of common lodging-houses or persons of the like class. I have even known of a lodger presenting himself with bared arm for revaccination who when casually gripped by the other arm demonstrated expletively that he had been very recently revaccinated and that his second presentation of himself was due to the desire for another payment. Payment is not a high class of inducement towards protection against small-pox, but in the absence of other pressure or obligation resort has to be had to the method which suits the character of the individual.

Vagrants.—In connexion with vaccination the relation of vagrants and casual workers, navvies and the like, to spread of small-pox has often been discussed. Dr. Henry Armstrong, medical officer of Newcastle, published the result of a series of inquiries concerning it in 1893. The London County Council convened a conference of sanitary authorities on the subject in 1894, and the dangerous part

played by the vagrant is universally admitted. Dr. Kaye of the West Riding estimated that there were about 36,000 tramps and vagrants in England—a truly formidable number, with great possibilities as carriers of small-pox.

The Royal Commission in its final report in 1896 made a series of recommendations for better control of common lodging-houses in respect of small-pox prevention. Common shelters should be made subject to the law relating to common lodging-houses. Local authorities should have power to require medical examination of inmates of common lodging-houses and casual wards; to order the exclusion of fresh inmates for any required period; to close common lodging-houses temporarily; to offer free lodgings to inmates under suspicion of infectivity; should report to other sanitary authorities; and should offer vaccination to inmates.

II. COMPULSORY NOTIFICATION OF INFECTIOUS DISEASE.

Voluntary notification of infectious diseases was recommended in the Local Government Board's report for 1877, in which Poor Law medical officers were instructed to intimate every case, and it was advised that doctors be supplied with postcards for voluntary notification, the vaccination officers having similar instructions for intimation of cases. About this time various public health authorities were obtaining compulsory powers under local Acts. I think the first of these in England was Huddersfield in 1876. Others were Bolton, Nottingham, Jarro, and Burton-on-Trent. Leicester followed in 1879.* In Scotland Greenock obtained powers in 1877, Edinburgh in 1879, and Aberdeen in 1881. Compulsory notification proposals were received with some hostility both by medical men and by opponents of vaccination. So late as November, 1894, the *Vaccination Inquirer* expresses its "hearty sympathy" with a medical objector to compulsory notification.

Notification of infectious disease was provided for in 1889 by an Act which local authorities could adopt if they so desired. It became compulsory in 1899, and is essential alike to the successful practice of emergency vaccination and to all supplementary measures for dealing with small-pox epidemics. Obviously to control a serious infection one must first be aware of its existence. Fifty years ago the knowledge which came to the public health officer was at the best casual and fragmentary—so casual and so fragmentary as to make impossible the stamping out of an epidemic otherwise than by general vaccination and revaccination, whilst these measures, as already indicated, were strictly limited by insufficiency of humanized lymph. Now the case is widely different. There is no disease of which the medical practitioner is more certain to give immediate notification than of small-pox, actual or suspected. Notification, of course, should be prompt, and the telephone or telegraph should be freely used in addition to written intimation to the medical officer of health.

Diagnosis.

As a preliminary to notification, diagnosis is obviously essential. But there is little opportunity in the present day for instruction of medical students, and the longer this remains at a minimum the better it is for all concerned, as it means that small-pox is absent. Such opportunity, however, as does exist should be fully taken advantage of, and wherever a case of small-pox can be seen students and practitioners within reach should be given, under due precautions, facilities for seeing it. Fortunately, as the result of action taken by the Royal College of Physicians in 1887, the institutions of the Metropolitan Asylums Board are now available for the education of students. The great hospitals for infectious diseases throughout the country are similarly at the service of the medical schools. To deal with actual outbreaks an excellent practice has been established by the Local Government Boards of England and Scotland of assisting any local health authority which has to deal with small-pox by giving them the aid of a medical inspector specially acquainted with the subject. Advantage should always be taken of this service not only for diagnosis but for the whole scheme of preventive measures.

* Dr. Millard, who ought to know, makes a puzzling statement as to Leicester. He says: "Compulsory notification came into force under a local Act as early as 1878."¹ But the Act was not passed until August 11th, 1879, and the Royal Commission say (par. 481, Final Report) that it came into operation after that year.

III. PUBLIC HEALTH STAFF.

The next great difference between the past and the present consists in the vastly improved public health staff now employed by the very great majority of local authorities. In 1870 there was in Scotland only a single whole-time medical officer of health. For the rest, each so-called public health authority gave a more or less nominal appointment to some doctor in general practice, commonly without any special study or knowledge of hygiene or disease prevention. Diplomas in public health were not instituted for a good many years after 1870, and even yet the possession by a health officer of such a diploma is not invariable. They are mentioned in this connexion merely as indicating the education and training in the prevention of infectious diseases which are now obtainable. If one looks at the list of textbooks and publications of all sorts which have come into existence in relation to public health and compares it with the meagre literature of 1870, an indication of the changed conditions is obtained. In the early days of public health diplomas bacteriology was hardly even a rudimentary science, and the laboratory part of the practical examination was confined to chemistry and microscopy. Bacteriology, unfortunately, has, so far, been of little value in respect of small-pox, but the place it now occupies indicates the tremendous improvement that has taken place in the equipment of the public health staff of a local authority. Almost every day whole-time appointments are being substituted for part-time, and comparatively soon this advance will be complete. The medical officer, besides, has now a staff incomparably better than existed, or could have existed, in 1870. Just as education for the diploma in public health has advanced, so has education of the sanitary inspector, who displaces the old inspector of nuisances.

Let me say in a word on this point that the outstanding insanitary condition which can be regarded as of consequence in spreading small-pox is overcrowding. Proximity of individual to individual within dwellings undoubtedly favours extension of the disease, and the system of high tenement buildings giving accommodation to many households and approached by a common turnpike stair makes small-pox, once it has obtained a footing, very much more difficult to control in a city like Edinburgh or Glasgow than in any English working class town with houses only two stories high and each dwelling with its own door opening directly on the street.

IV. SURVEILLANCE OF CONTACTS.

Search for small-pox contacts was no doubt attempted to some rudimentary extent even in the pandemic of the Seventies. In 1878, referring to a report by Dr. Johnson, assistant medical officer of Leicester, in which he describes quarantining of contacts, the *BRITISH MEDICAL JOURNAL* says Dr. Johnson is in error in thinking his plan novel, as it had been practised in the metropolis and elsewhere, not only for small-pox but for cholera. The *JOURNAL* agrees that it is undoubtedly very useful at the commencement of what might otherwise have been an epidemic, and is worthy of being more extensively carried out. In cholera difficulty had been experienced in getting fathers into quarantine unless they were out of employment, "and then at least equal difficulty was experienced, at any rate in some places, in inducing them to leave the comfortable quarters provided." The practice thus seems not to have been confined to a single locality, but to have been more or less common. Obviously, however, observation of contacts could only be very imperfectly carried out in the absence of systematic notification of cases.

The epidemic of 1892-93, following as it did the passing of the (adoptive) Notification Act of 1889, furnished really the first opportunity for systematic surveillance of contacts on any extensive scale, and reports show that it was practised in many places: Warrington, Chadderton, Liverpool, Leeds, Oldham, Crewe, Stafford, Bradford, Gloucester, Leicester, Halifax, Sheffield, and Salford may be mentioned.

Under notification, surveillance is a routine duty of the most essential importance, and here the value of a trained and active public health staff becomes manifest. When the first case is discovered, and while it is being dealt with, the question of its origin is simultaneously investigated. The movements and doings of the individual before the development of the eruption, and for a day or two on either

side of it, have to be rigidly investigated, and if the source of his infection is discovered it becomes a new centre of similar inquiries. Next the patient has to be questioned as to his movements during the period of possible infectivity. The household claims the first place, and if he has been an inmate of a common lodging-house, the household is a large and difficult one. His place of employment, workshop or factory, has next to be thought of, also houses which he has visited—meetings, churches, reading-rooms, libraries, educational classes, public-houses, and so forth. All these have this in common, that they give opportunity for indoor infection. As already argued, I am satisfied that, especially in a mild type of disease, indoor infection is much more to be feared than outdoor. Yet if the medical officer of health has succeeded in fixing the patient's memory on his doings on the days in question, and if he can get him to tell the whole truth, note should be made of casual conversations on the street, or of contact in open-air workplaces, especially where the patient's eruption is abundant and where diagnosis has not been made until the stage of vesiculation and pustulation.

A list of contacts having been prepared in this way the necessary action—immediate offer of vaccination, and surveillance—is taken with regard to them. It is by no means necessary that all of them should be seen daily for a fortnight from the discovery of the case. The date of contact should in each case be noted and the surveillance should have relation to the date. Contacts should be dealt with as human beings whose liberties are not to be needlessly limited. Round about the day on which the disease may be expected to appear there should, of course, be special vigilance. A well vaccinated and revaccinated man, after disinfection of his clothing, etc., need have no restrictions whatever put on his movements because he was a contact. A doctor should not be the only privileged person in this respect. And even for others less well vaccinated it is unnecessary that daily work should be abstained from excepting on the critical days, but warning should be giving of the necessity for at once giving intimation of the slightest symptoms of illness, usually backache and headache. There is at present no power to compel contacts to remain under conditions permitting of regular observation. They may roam the country as they please, and to deal with this difficulty special measures have to be thought of. In common lodging-houses the money factor comes in as in the case of vaccination of vagrants. It will profit the community to pay casuals to remain where they can be found at any time.

Reception Houses.—In large towns reception houses are very useful and they should have accommodation not only for individuals but for families. They have to be maintained, of course, by the public health authority. In the country reception houses are much less necessary and individuals can commonly be kept under observation at home.

School Closure.—The closure of schools in small-pox, as in the case of other infectious diseases, is a question of circumstances, and the practice may differ according to the facts. I have never myself had occasion to close a school for small-pox, and, as noted by Dr. Killick Millard, it is easier to keep under observation children in a school, especially from a central locality, than to visit them at their own homes. But, on the other hand, an unrecognized case in a school may have opportunity of spreading the disease into localities which would not otherwise be under risk of invasion. The question, as I have said, is one of circumstance, and vigilance is always necessary.

What small-pox may do when it finds entrance into a school is strikingly illustrated in the experience of the Borough of Ossett during the epidemic there.* An unvaccinated child attended school whilst suffering from small-pox. In her class were 27 children, of whom (a) 6 had been vaccinated and revaccinated, (b) 13 had been vaccinated only in infancy, and (c) 8 were unvaccinated. All those under (a) and (b) escaped attack. All those under (c) were attacked. In the same room were other 42 scholars, of whom (a) 8 had been vaccinated and revaccinated, (b) 20 had been vaccinated only in infancy, and (c) 14 were unvaccinated. All under (a) escaped attack, 5 of those under (b) were attacked, each of them

* Reported by Dr. Kaye of the West Riding County Council, and Dr. Greenwood, Medical Officer of Health, Ossett Borough, and quoted by Dr. Spencer Low in his report on the Dewsbury epidemic of 1904.

being over 11 years old, and 12 of the 14 under (c) were attacked. In other two rooms were 100 scholars, of whom (a) 45 had been vaccinated and (b) 55 were unvaccinated. All the 45 under (a) escaped attack, and 17 of the 55 under (b) were attacked. The type being mild, all recovered.

The difficulties of dealing with contacts are increased by the size and character of a community and by migratory habits of its population. In the east end of London one would expect control to be more difficult than in a residential part of the metropolis. Needless to say, every contact, whether intimate or remote—and contacts may be usefully so classified—should be advised to accept immediate vaccination unless he is already sufficiently protected. But pressure towards vaccination should never be excessive. The policy of Parliament to yield to strenuous objection should be borne in mind, and sometimes it turns out profitable not to have pressed too much. I have succeeded in vaccinating a whole village streetful of people as a result of development of small-pox by a contact who had ostentatiously refused protection.

V. ISOLATION OF SMALL-POX.

One of the earliest advocates of isolation as a supplement to vaccination was Sir James Y. Simpson in 1868, in a paper entitled "Proposal to Stamp Out Small-pox, etc."² Simpson stated that "in despite of the marvellous influence of vaccination the mortality produced by small-pox in Great Britain is still very great and startling," and that "Jenner's immortal discovery saves from death from small-pox in our present population probably about 80,000 lives annually," but that "there still die from its ravages about 5,000 annually." Concerning these he wrote that "doubtlessly a stricter enforcement of the new compulsory laws of vaccination, and a greater amount of attention to its proper performance with proper matter will betimes diminish the number of the susceptible class." "Yet, in the meantime," he goes on to say, "that disease still revels with fatal power," and he asks, "Can it be arrested in its progress?" He believed it could, and proposed four regulations, which were briefly: (1) "The earliest possible notification"; (2) "The seclusion at home or in hospital of those affected"; (3) "The surrounding of the sick with nurses and attendants" immune by cow-pox or small-pox; and (4) Disinfection. He attached chief importance and devoted the rest of his paper to "seclusion," or isolation, which, it will be observed, might be conducted either at home or in hospital. Concerning infectivity he writes: "As the disease does not mature into the stage of infection for some days after the eruption shows itself, a free period would thus be secured to arrange proper measures of isolation, either at home or in hospital, before the date and danger of infection was reached."

In his opinions as to infectivity Simpson was mistaken, almost as Haygarth of Chester had been in the eighteenth century, but excepting that he makes no mention of contacts, his whole scheme shows a characteristic grasp of essentials. I have stated his views here because of the grave risk which exists that the opinions of so great a man on so important a subject may be seriously misunderstood by readers who do not turn for the facts to Simpson's own writings but accept second or third hand references to them. Simpson's "Proposal" was brought before the Royal Commission on Vaccination by a witness who gave no hint either by quotation or reference that the paper contained any mention of vaccination. The dissentient Commissioners in their Statement say that Simpson's paper "will be found at page 40 of the fourth volume of our reports." They believed so, but in fact the paper is not there. What at a casual glance appears to be the paper is there, but it is not the paper as published by Simpson, all the above important references to vaccination being absent. In a review of the dissentients' Statement³ I pointed out with some fullness the misleading manner in which Simpson's "Proposal" was placed before the Royal Commission. In the next place, just as the dissentients relied on the evidence of the witness in question, so Dr. Millard, in a brief passage in *The Vaccination Question*, relies in turn on the dissentients' Statement, and, whilst quoting Simpson as to "stamping out," makes no mention of the fact that the proposal related to cases occurring amongst the fraction of the population left unprotected by vaccination. So the omission error is perpetuated.

Other authorities who have urged the value of isolation

hospitals are Dr. George Buchanan in 1874, and Dr. Thorne Thorne in evidence given before the Royal Commission which inquired into small-pox and fever hospitals in London in 1881-82, but the views of Buchanan and Thorne as to vaccination are so well known as to prevent any risk of misapprehension, at least for another generation.

Meantime, while isolation was being advocated by Simpson, Buchanan, and Thorne, it was being denounced by opponents of vaccination no less violently than was the Jennerian "rite" itself. In 1877 it was urged in one of a series of officially issued Vaccination Tracts that "small-pox hospitals are the culminating mistake in the social treatment of the disease. They are sewers of death to their inmates"; and so late as 1894 the *Vaccination Inquirer* declared itself strenuously opposed to compulsory removal to hospital. Now, however, isolation is advocated by antivaccinationists as if it were a discovery of their own and could be a substitute for vaccination. The Royal Commission tersely summed up the situation when they said regarding isolation, "what it can accomplish as an auxiliary to vaccination is one thing; whether it can be relied on in its stead is another thing."⁴

Hospitals.

As I have said elsewhere, small-pox hospitals are in a peculiar position in relation to prevention of the disease. If vaccination and revaccination were universal there would be no need for small-pox hospitals. On the other hand, if vaccination were absent, small-pox hospitals would be useless, unless, indeed, the whole staff connected with isolation measures—the medical officers, the sanitary inspectors, the ambulance drivers, the nurses, the hospital attendants, those who bring provisions to the hospital, and all connected with it—had already suffered from small-pox and had in that way achieved immunity. It is in the intermediate condition, with vaccination not universal, yet available, that small-pox hospitals find their place in the system of prevention.

Their Situation.—But when they began to be used on any appreciable scale in London and in Glasgow in the epidemic of the Seventies it is true to say that they did much more harm than good. The hospitals became centres of infection from which the disease spread throughout the community. Gradually this lesson was learned, sometimes with reluctance and often with disputation as to the nature of the hospital influence, whether aerial or by contact. Epidemiologists should read the report in the *Transactions of the Epidemiological Society* (vol. xxiv, 1904-5) of a two days' discussion on "The spread of small-pox occasioned by small-pox hospitals during the epidemic period 1900-1904, and its relation to atmospheric convection." There has been no opportunity of studying the question since 1904, and just possibly there may never again be a chance of having the hypothesis tested. But in fact the position now generally is that small-pox isolation hospitals are themselves isolated from the general community in addition to isolating the patients within them. With extension of rural housing and re-development of agriculture isolated sites may become more difficult to obtain, but a motor ambulance service enables a single well-situated hospital to serve a large area.

Their Accommodation.—Not only is the position of such hospitals of importance, but so also is the amount of their accommodation; and here it is practically impossible to state how many beds may be required for a given population in presence of an epidemic, so much depends on factors which cannot be measured. The infectivity of the disease, the promptitude and skill which are exercised in grappling with it, the circumstances of the locality in which it occurs, and so forth, are all important factors in the position. The course to adopt, therefore, is not to erect any very great amount of ward accommodation, but to have as the centre of the hospital scheme an administrative block which will serve for a large staff, and a large amount of ward accommodation. Also, there should be sufficient ground attached to the hospital to permit of quick extension. The situation of possible future ward blocks should be definitely laid out and the ground prepared so that so-called temporary buildings can be quickly erected. For small-pox I have always preferred that ward pavilions not expected to be often in use should be constructed of wood and iron. Such materials do not gather damp as sandstone does, and are more easily heated up and put into proper condition for occupation.

Their Management.—It is necessary to go into a little more detail here. Assuming the hospital to be in a safe situation, thoroughly competent management can go far to removing risk of danger. Vaccination again takes the first place. The staff, both resident and visiting, should be rendered immune; so should ambulance drivers, and all, such as carriers of provisions and stores, gardeners, etc., who have any reason to visit the hospital. Steps have to be taken also to prevent the conveyance of infection indirectly, as by clothing or person. The ambulance van in a city should not use busy streets liable to blocking of traffic when curiosity would gather passers by around the van. Quiet unobstructed side streets should be chosen for rapid transit. Theft from the hospital laundry should be carefully guarded against. Emergency nurses should not be employed, but only the trained and trusted staff who have been engaged in nursing other infectious diseases for the public health authority. It is an excellent arrangement, as under Dr. Claude Ker in Edinburgh, to get the nursing staff to forego their usual daily or weekly leave. They should be encouraged to remain within the grounds for a month or even more, and then there should be thorough disinfection prior to several days' continuous leave. The usual precautions as to overalls and caps should, of course, be observed. Goods for the hospital should be brought only within the gate and then taken in by the resident staff. There should be a separate gate for such traffic independently of the patients' gate. Letters regarding patients and official communications of any kind should be dictated by telephone to the local health office and then transmitted in writing. Visits to patients should be strictly limited, though in the case of a dying patient a visit cannot be refused, even if the visitor declines vaccination. He can at least be protected by overalls and subsequently dealt with as a contact.

Emergency Arrangements.—Small-pox should have a hospital to itself, but sometimes even yet local authorities are not so provided, and a safely situated hospital for ordinary infectious disease has to be utilized. In presence of small-pox in a county area I have repeatedly arranged for several local authorities to devote one of their institutions to small-pox, and for ordinary infectious diseases belonging to the district served by it to be treated at other hospitals in the county. This is made easier in practice by the fact that in the early stage of the disease at which a case is ordinarily diagnosed, the patient can safely be removed for quite a long distance in an ambulance wagon; and of course motor ambulances reduce the difficulty to a minimum. Where, however, circumstances make it necessary to treat small-pox in a hospital containing cases of other diseases, the position need not be despaired of. The vaccinal condition of all patients can be ascertained, and permission asked to vaccinate those who require it. If this is refused in any case the patient may probably be in a condition permitting discharge from the hospital, preferably to another hospital. Sometimes, however, a patient may be too ill for vaccination, and a certain amount of risk may be unavoidable. If so, it is part of the price that has to be paid for lack of vaccination or of a separate small-pox hospital. In Leicester, after its Method was departed from, in addition to having a small-pox hospital, the expedient was resorted to of commandeering, for small-pox, the whole of the ordinary infectious diseases hospital, by sending home all removable cases, whatever they might be suffering from. This was followed in 1892 by an extensive epidemic of scarlet fever. On another occasion in the same town such extension did not take place. Anyhow it will be agreed that small-pox is more to be feared than scarlet fever, and should have preference in isolation.

Ineffective Isolation.—Where a small-pox epidemic gets out of hand it quickly becomes futile to attempt to control it by hospital isolation, and efforts to do so are pitifully ineffective. Gloucester, Dewsbury, and Middlesbrough are cases in point.

Gloucester, taking Leicester for its guide, neglected vaccination, and surpassed even its mentor in the degree of its neglect. Also, its representatives told the Royal Commission about the cleanliness of their fine old city and called attention to its freedom from small-pox. Then when its trial came in 1895-96, though as a town of only 40,000 inhabitants it had not available the whole time of a medical officer, as Leicester had with its 200,000 population, yet with its 48 beds it had much more hospital accommodation

in proportion to its size, and it set out to follow the Leicester Method. But its type of infection, unlike Leicester's, was severe, and though this made diagnosis easier, the epidemic spread. After exhausting, and more than exhausting, its 48 beds it went on adding to its provision, so that in the end it had no less than 318 beds. But all was of no avail, and it had to fall back on vaccination and revaccination, ending its experiment by becoming the best vaccinated town in the British empire. Regardless of consistency, antivaccinationists have since then attributed the epidemic to insanitation.

Dewsbury, likewise defying vaccination and defying common sense in respect of every preventive measure, hopelessly failed by panic provision of hospitals to quell its epidemic.

Even Middlesbrough (population 90,000), with infantile vaccination extensively practised, but without systematic revaccination, and with a severe strain of infection in its epidemic of 1897-98, gradually increased its small-pox accommodation from 14 beds to the remarkable total of 822 beds; and in the end, as bewailed by the medical officer of health, they had "twenty-two blocks of temporary buildings which nobody knows what to do with, besides an enormous amount of bedding, beds, and other materials." Under such conditions house to house visitation for vaccination and revaccination is the only means to control an outbreak.

VI. DISINFECTION.

The object of disinfection is, of course, the destruction of the poison, and this ought always to be complete. It is a routine measure, and the modern methods available are well understood and thoroughly effective. Pawnshops and laundries may require attention where articles have been received from infected houses. In towns, shelters may conveniently be provided for poor persons whilst their houses are being disinfected. For security, articles which are difficult to disinfect, such as bedding, are not infrequently destroyed, and so the mind of the authorities is relieved of all anxiety on that score. A hospital superintendent of great experience has advised me that soaking of blankets, etc., in soap and water seemed to destroy all infection. Where a navy or a vagrant has occupied two or three different beds in a navvies' hut or common lodging-house with many inmates, disinfection is difficult and destruction expensive, but no necessary measure must be shirked on either ground. Not only may a lodger or navy have occupied in succession two or three different beds, but there may be in succession several introductions of the disease during an epidemic period, and the difficulty is manifest of carrying out thorough disinfection in the same lodging-house or hut time after time, perhaps at a few days' interval.

REFERENCES.

¹ *Public Health*, February, 1917; and similarly elsewhere. ² *Medical Times and Gazette*, vol. 1, 1868, pp. 5 and 32. ³ *Trans. Epidem. Soc.*, 1896-97. ⁴ *Vaccination Tract No. 12.*

(To be continued.)

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HERPES ZOSTER AND VARICELLA.

IN view of the recent article by Dr. R. Cranston Low in your issue of January 25th, a case of similar coinoculation may be worth recording.

On January 15th three brothers were admitted to hospital all suffering from scarlet fever. The eldest, who had no previous history of chicken-pox, had well marked right-sided herpes zoster, and, in addition to impetiginous spots on face and ears, there were one or two spots on the left side of the chest, which on healing have left a scar suggestive of a varicellar condition. On January 19th, four days after admission, one of the brothers developed a definite attack of varicella, and within fifteen days the youngest child also had chicken-pox.

Liverpool.

W. M. GRAY.

GONOCOCCAL PAPILLOMA OF THE UMBILICUS.

THE rarity of the following case may make it worthy of record:

S. M., a girl of 19 years, was admitted into St. Thomas's Hospital with the typical signs of a gonorrhoeal infection

of some three weeks' duration. For this period there had been not only a copious discharge from the vagina, but an abundant yellow discharge from the umbilicus. Subsequent microscopic investigation demonstrated the presence of the gonococcus in both.

In spite of treatment the umbilical discharge persisted, the peculiar feature of the case being the presence of a pedunculated papilloma which rapidly increased until, in two months, it had attained the size of a small walnut. The surrounding abdominal wall remained unaffected.

In general appearance the growth was somewhat like a raspberry, and exactly resembled the gonorrhoeal "wart," as ordinarily seen on the vulva. It entirely concealed the umbilical depression, but when drawn aside the peduncle was exposed to view. The growth was painless and not tender on palpation.

During the week before removal it became very soft and spongy, and there exuded from its surface a profuse yellow discharge, similar to that which came from around the pedicle within the umbilical pit. It is noteworthy that papillomata likewise developed on the vulva and the perineum.

Caustics and astringents proved of little value. An elliptical incision was therefore made round the parts, and the whole of the umbilicus, together with the appertaining tumour, removed; the wound healed rapidly.

THOS. ANWYL-DAVIES,

Venereal Department, St. Thomas's Hospital, London.

CILIATED (?) AMOEBA IN LIVER ABSCESS.

In a patient suspected from clinical observation to have a liver abscess no protozoa or cysts were found on examination of the faeces. An organism was isolated from the urine which gave biochemical reactions of the paratyphoid group, but was not agglutinated by paratyphoid A or B, nor *snipestifer* or Gaertner serum. The patient died and *post mortem* a single abscess of the liver was found on the right side. It was more or less encysted; its walls were thick, firm and fibrinous. The cavity was smooth and contained pus, not chocolate coloured, but yellow and creamy. On microscopical examination of the pus, amoebae having a highly refractile ectoplasm were observed. A few red blood corpuscles were ingested in the endoplasm. The nucleus was excentric, but distinct. From the periphery of the nuclear membrane small cilia-like bodies in constant motion were evident. The movement was continuous, though at the time of observation no pseudopodia were being thrown out.

The pus was plated out and found to contain an organism similar in biochemical reactions to that obtained from the urine, as described above.

R. C. WATTS, M.D., D.T.M., D.P.H.,

Lieutenant I.M.S.(T.C.), formerly Garrett Fellow in Bacteriology, University of Liverpool.

PRIMARY SARCOMA OF THE PROSTATE IN A BOY.

Cases of primary sarcoma of the prostate seem sufficiently rare to justify a short record of a case. In the *BRITISH MEDICAL JOURNAL* of January 18th, 1919, Dr. Newman of Glasgow reported a case, and states that in 1858 Thompson was only able to discover 6 cases, and that in 1912 Burckhardt collected 24 cases.

A boy aged 3½ was brought from Grimsby to Dr. Nicholson on September 24th, 1918. He had had difficulty and pain on passing water for seven weeks, and had very frequently needed a catheter.

Mr. Hainworth was asked to see him with Dr. Nicholson and operation was advised. On September 26th, 1918, the bladder was opened suprapubically by Mr. Hainworth; it was normal, and the urethral opening was dilated; the prostatic urethra was occupied by a tumour the size of a golf ball, which was easily shelled out; the bladder was drained.

The specimen was sent to the Clinical Research Association. The report was: "A malignant growth having the structure of a sarcoma. It is composed of rounded or irregular cell elements in a very scanty stroma with thin-walled vessels. Large areas of it are undergoing myxomatous degeneration."

The child recovered from the operation, and was much more comfortable for some weeks, but recurrence was rapid, and death took place on December 8th, 1918.

FRANK NICHOLSON, C.B.E., M.D. Lond.,

Senior Physician, Hull Royal Infirmary.

E. M. HAINWORTH, F.R.C.S.,

Surgeon, Hull Royal Infirmary.

Reports of Societies.

THE SUPPORTS OF THE UTERUS.

A MEETING of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on February 14th. Professor HASTINGS TWEEDY read a paper on the tendons of the uterus and their relations to the lower uterine segment. He said that gynaecologists were, or should be, agreed that the uterus owed its stability to fibro-muscular bands radiating in every direction from the muscles surrounding the os internum. These fibro-muscular bands were under the full control of the uterus; when the os opened they relaxed, when it closed they again became taut. They acted as true tendons to the muscle, and should be called "uterine tendons" rather than ligaments. These tendons constituted the true boundary between the cervix and the body of the uterus. They took up all strain from the cervix so long as they remained intact, with a closed os internum. In pregnancy the os opened and the ovum came to lie in the upper region of the cervix and beneath the uterine tendons. The cervix invariably hypertrophied at the part exposed to any continuous pressure. This pressure was exercised on it by the growing ovum, and thus the lower uterine segment formed.

Professor A. F. DIXON said the supports of the uterus were the structures in the subperitoneal tissue. Some support, in addition to that furnished by the levator ani, was necessary to prevent the uterus being thrust downwards, or telescoped into the vagina by intra-abdominal pressure. The support was mainly applied at the lateral aspect of the cervix and at the lateral fornix of the vagina. Here the subperitoneal tissue was packed with smooth muscle and connective tissue fibres, radiating outwards along with the vessels and nerves which abounded in that region. This mass of dense subperitoneal tissue lay partly between the layers of the broad ligament, where they diverged as they reached the pelvic floor. The dense mass was continuous with the muscular wall of the cervix and the vaginal fornix, and not merely adherent to those structures; in front of them it was continuous in the muscular wall of the lateral angle of the bladder, and formed the "ureteral sheath." In considering the question as to how these supports acted in maintaining the uterus it was important to recognize that they were actually continuous with, or rather parts of, the uterine and vaginal walls. Too often the uterus was regarded as a hard, inert organ, pressed upon by neighbouring structures, and supported against abdominal pressure by inert fibrous bands or fascial layers. In reality, the thick muscular uterine coat must constantly be varying in the amount of its contraction. Waves of contraction passing over its surface had been noted in lower animals, and presumably similar contractions also occurred in the living human subject. Such contractions would normally pass on into the radiating muscle strands forming the lateral cervical and sacro-uterine "ligaments." In this way the uterus should be able to make tense its connexions and supports, and possibly shift its position to some extent by traction on, or through, the smooth muscle bundles radiating from its cervix. Similarly a contraction passing into the smooth muscle fibres which formed the round ligament might be counted upon to draw the fundus uteri forwards as the blood emptied itself. In conclusion, Professor Dixon suggested that in the normal living subject the upper part of the uterus had not the "floppy" condition found in the dead subject, but that it was held in position by the action of the various bands of smooth muscle fibre radiating from it.

Sir WILLIAM SMYLY said he had known that the subperitoneal tissue contained unstripped muscular fibres, and especially in the utero-sacral folds, which had been described as retractor muscles of the uterus, but he had no idea that the tissue around the cervix, and especially that of the cardinal or Mackenrodt's ligaments, contained so much of that tissue as had been stated by Professor Dixon. His description of those fibres as originating from the substance of the uterus and radiating to their pelvic insertions sufficiently explained the fact that that tissue was not ruptured in childbirth, as it certainly would be if arranged as a diaphragm across the pelvis. If he had correctly

understood Professor Dixon, the opening of the os might be compared to that of the pupil, the cervix representing the circular fibres of the iris. If that were so, the mechanisms would be the opposite to what had been supposed, for, as the cervix dilated, the connective and muscular tissues instead of being stretched would be relaxed, their origins in the uterus being approximated to their pelvic insertions. That the cardinal ligaments were mainly responsible for holding the uterus in place could scarcely be doubted by anyone who had performed a hysterectomy. He thought Dr. Tweedy's idea that these ligaments acted like tendons to the uterus was a reasonable one; and it had always appeared to him that unless some restraining force existed the uterus would tear itself away from the vagina. Professor Dixon's statement that some of the muscle fibres were attached to the vagina probably explained the well-known fact that in cases of threatened abortion a ballooning out of the fornices accompanied uterine action.

Dr. PURFOY did not think that these uterine ligaments, or more correctly muscles, took an active part in effecting dilatation of the cervix, though he believed they steadied it while that process was going on. Dr. Tweedy's views as to the growth of the cervix during pregnancy commended themselves as having good foundation.

Dr. SPENCER SHEILL said he thought that Dr. Tweedy's views proved the great benefits obtained by minor gynaecological operations.

Colonel CHAMBERS pointed out the method of the uterine attachments of the lateral cervical ligaments, or Mackenrodt's ligaments. In the young subject these muscular fibres could be seen to be grouped into definite bands following definite courses.

Dr. HENRY JELLET said that very considerable information as to the nature of the supports of the uterus could be obtained from a series of horizontal sections of the pelvic contents made in the full time fetus and in the adult. In the fetus such sections showed that the urethra and base of the bladder, the vagina and lower part of the uterus, and the rectum, were united by a capsule, fibrous in appearance, to the pubic bones in front, to one another, and to the sacrum and coccyx posteriorly. As these organs increased in size, this capsule, so far as its uterine and vaginal portion was concerned, was drawn out into vertical bands, forming in the case of the uterus the uterosacral ligaments, and in the case of the vagina the vaginal suspensory ligaments. Such a series of sections showed that in this way the major supports of the uterus were formed, and were thus constituted by the utero-sacral ligaments and the vaginal attachment, the latter being in turn held by the vaginal suspensory ligaments. Clinical proof of these supports was readily to be found when performing either Wertheim's hysterectomy or total vaginal extirpation. Both the uterine and vaginal ligaments were undoubtedly incorporated in, and formed part of, the walls of the vagina and uterus at their point of attachment, and in view of Professor Dixon's investigation they must be regarded as containing large quantities of involuntary muscle tissue.

Dr. BETHEL SOLOMONS said that the traumata found in association with prolapse of the uterus and the extensive repairs necessary proved that the two schools of thought—namely, the one which held that the "cardinal" ligaments were the chief supports of the uterus, the other which held that the pelvic floor was the chief support—were both at fault. Dr. Tweedy, with his views, and Dr. Paramore, with his views so excellently described in his recent work, might unite forces. To the clinical gynaecologist it was evident that the ligaments and the pelvic floor combined as the chief supporters of the uterus.

WRIGHTSON'S THEORY OF HEARING.

At the meeting of the Section of Otology of the Royal Society of Medicine held on March 21st, under the presidency of Mr. HUGH JONES, F.R.C.S., Professor ARTHUR KEITH, F.R.S., gave an account of the theory of hearing set forth by Sir Thomas Wrightson in a recent book.*

Professor KEITH explained that he himself was merely responsible for the anatomical details of the inner ear. The theory had been outlined by Sir Thomas Wrightson

in a presidential address to the Cleveland Institution of Engineers in 1876, but it had been quite overshadowed by the glamour attached to the theory of Helmholtz. In the Helmholtzian theory the internal ear was a sort of microscopic piano furnished with resonating strings almost ultramicroscopic in size, and some 16,000 in number. Each string or set of strings was supposed to pass into a state of vibration when its sympathetic note entered the ear. Each string or set of strings was supposed to have a corresponding nerve fibre, and these nerve fibres must be supposed to lead ultimately to a central nerve-cell station or exchange, where 16,000 nerve cells received messages from their corresponding ear strings. However satisfactory to a physicist, Helmholtz's theory from the standpoint of the psychologist or the physiologist or the anatomist was an impossibility. The strings were there, but they were so placed and so conditioned that the one thing they could not do was to vibrate. Nature had taken the utmost care to render individual vibration an impossibility. In Sir Thomas Wrightson's theory the ear acted as a single machine; it was the most minute and most delicately adjusted spring balance ever evolved, one designed not only to weigh the simplest sound wave, but also the most complex and voluminous. The ear not only weighed every fluctuation in pressure, but automatically registered and recorded the minutest variation through the hair cells or semaphores which formed an intrinsic part of the machine. The system of messages or semaphore signals transmitted from the ear might be compared to the dot-and-dash system of the Morse code, the whole of the organ of Corti being involved in the production of the code of signals. All the fibres of the auditory nerve were concerned in transmission from the ear to the brain. It was legitimate to infer that the time signals carried on this code could be deciphered and sorted out at nerve synapses in the cerebral nervous system. Thus Sir Thomas Wrightson's theory brought hearing into line with smell, taste, sight, and touch; whereas Helmholtz's theory, by presupposing that each fibre in the auditory nerve had its special function, broke the most elementary law regarding the nature of nerve conduction.

Recent advances in our knowledge of the evolution of the internal ear threw a most definite light on the mechanism of the cochlea and organ of Corti. The ear was evolved from the balancing apparatus of the primitive labyrinth; the principle which had been adopted by Nature in working out the organ of hearing was merely an extension of the principle used in the primitive labyrinth. In the lowest fishes a closed vesicle on each side of the head filled with fluid, served as the central part of the labyrinth. On its floor was a nest or island of hair cells; on the hairs was balanced an otolith; nerve fibres began in or around the hair cells. So long as a fish swam on an even keel, the ciliary semaphoric system was at rest, but if it heeled over or slightly, then gravity came into play; the otolith, as it answered to gravity, bent the hairlets right or left, as the case might be, and in bending the hairlets set up certain tensions or changes in the living cells to which they were attached, and these changes were transmitted as signals or impulses along the attached nerves. In that simple semaphoric apparatus there were four elements: (1) The otolith or *titillator*; (2) the hairlet or lever on which the *titillator* acted; (3) the sense cell on which the lever acted; (4) the nerve fibres acted on or stimulated by the sense cells. In the sense organs or signal stations of the semicircular canals—evolved for the registration of body movements—the same four elements were found. The cupola represented the *titillator*, though it was no longer acted on by gravity, but by mass movements of fluid, set up in the canals during movements of the head. Bárány first showed that movement of the fluid in one direction gave one set of signals; movements in the reverse direction another and reverse set of signals. With the evolution of the cochlea and the organ of hearing the same four elements were used. The *titillator* was the tectorial membrane; the hairlets or levers, the sense cells and nerves, were as before, save that the sense cells were now set in an elastic scaffolding of fine elastic rods and fibres. But one novel change had been introduced: in the balancing apparatus of the vestibule the sense cells were fixed; the *titillator* was movable. In the ear Nature had reversed the arrangement and set the sense cells on the movable basilar membrane, which responded to every displacement of fluid set up by waves of sound impinging on the inner ear. On the other hand, the *titillator* was no longer free, but tethered to the containing wall. Thus, in the utricular system the hairlets or levers were worked by gravity; in the canicular system mass displacements of fluid set up by movements of the head bent the levers and gave rise to signals. In the cochlea the force employed in working the lever system was the minute displacements set up by sound waves, and the levers were bent by the field of hair cells working against the *titillator* or tectorial membrane.

The essential modifications required to make the otic vesicle into an organ of hearing were, first, a closed vesicle filled with fluid, and everywhere surrounded by bone of a peculiarly dense nature, except at the fenestra rotunda, without which there could be no mass displacement of the fluid. In the passage leading to that window

* See review, BRITISH MEDICAL JOURNAL, September 28th, 1918, p. 546.

was placed the organ of Corti, the apparatus for recording the displacements of fluid set up by the bone-conducted sound waves. To make the ear a more sensitive machine there was another window, the fenestra ovalis, into which was fixed a movable piston, the stapes. By a bent lever formed by the ossicles of the ear this piston was yoked to the membrana tympani, and thus the ear was rendered infinitely more sensitive to sound impulses carried by the air. Closure of the fenestra ovalis by fixation of the stapes made the ear more sensitive to bone-conducted waves; closure of the fenestra rotunda produced complete deafness. These facts could not be explained on the hypothesis put forward by Helmholtz, but found a complete explanation from the theory advanced by Sir Thomas Wrightson.

Four phases were to be recognized in the completed movement of the lever or hairlet of a sense cell. Its upright or vertical position might be regarded as one of rest, its zero position. In the first phase of a complete movement the hairlet bent towards one side—say the right; in the second it returned to its upright or zero position; in the third it bent towards the left; in the fourth it again returned to its starting position or zero. Different conditions of tensions and pressures would clearly be set up within the hair cell in each of these four phases, and each phase, it might be postulated, gave rise to a nerve impulse or signal, the signals set up varying with the duration and force of each hairlet movement. In each sound wave Sir Thomas Wrightson recognized four corresponding phases. Two of these lay in the part of the wave where the air particles were being condensed—the part in which there was a *plus* pressure; two lay in the part where the air particles were being rarefied—where there was a *minus* pressure. In phase I the pressure was rising, in phase II the *plus* pressure was falling; in phase III the *minus* pressure was increasing; in phase IV the *minus* pressure was decreasing.

Sir Thomas Wrightson's original discovery, announced in 1876, was the recognition of the fact that if it could be supposed that each phase of sound wave did give rise to an effective stimulus in the ear, then the brain was supplied through the ear with a sufficiency of data to give a complete analysis of the most complex sound. Helmholtz had supposed that such an analysis could be accomplished only on the principle of resonance. Sir Thomas Wrightson showed that there was an alternative method. That each phase of a sound wave was effective in producing a most distinctive movement of the auditory hairlets was a later discovery, but formed an essential part of Sir Thomas Wrightson's theory. It was a sequel to a neglected discovery of Sir William Bowman's, made about the year 1846, that the basilar membrane was made up of two parts—a striate zone and a hyaline zone—the latter resembling the capsule of the lens in structure and in staining reaction, and could be regarded as elastic in nature. Sir Thomas Wrightson had demonstrated that the displacements which sound waves set up in the fluids within the ear acted against the elastic resistance of the basilar membrane, and that thus each of the four phases of a sound wave, which he had originally postulated on a theoretical ground, thereby became effective in producing a separate and distinctive movement of the hairlets.

In Professor Keith's opinion, the various parts of the cochlea, of the organ of Corti, and the conformation of the various liquid passages of the ear, which were left unaccounted for on Helmholtz's theory, now received a satisfactory explanation. He had no doubt that when physiologists, psychologists, and aural surgeons had mastered the details of the new theory they would find themselves provided with clues to phenomena which were formerly inexplicable.

Sir THOMAS WRIGHTSON said that from Professor Keith's remarks no idea could be gathered as to how much was owing to him in the presentation of this theory of hearing. As a distinguished anatomist understanding every detail of the parts involved, Professor Keith grasped the idea that if a machine was required to transmit the varying pressures of a sound wave to the nerve terminations, that transmission must be of a dead-beat character.

A discussion followed.

INDUSTRIAL EMPLOYMENT OF WOMEN.

At a meeting of the London Association of Medical Women on March 11th, at Chandos Street, with the President, Lady BARRETT, M.D., in the chair, a discussion took place on the effect of industrial employment upon women.

Dr. RHODA ADAMSON spoke from her experience as a medical officer for seven years to a maternity hospital, most of the patients having been factory workers before marriage, and many of them charwomen afterwards. She also spoke from the point of view of three years' super-

vision of some thousands of women in engineering work, most of whom were wives of men in the navy, army, or air force. She emphasized the need of grading by a doctor with opportunities of seeing the different kinds of work and the importance of giving suitable employment to pregnant women, who should be taken off all night work and all work involving sudden strain. She found that the children born under these conditions were as healthy as those whose mothers did no outside work. Out of 4,000 women doing heavy work only two developed hernia. On the whole, Dr. Adamson found that industrial work was good for women, and that some who had never gone out to work before brightened up mentally, developed hobbies, and improved in health.

Dr. JANET CAMPBELL described some of the effects of munition work on women. She said that industrial occupations were less injurious to women than to men, and that they were less liable to accident, but that women suffered more from overstrain, 50 lb. being the maximum weight which it was found advisable for most of them to handle. She said that the tuberculosis rate had risen since the war in the case of urban females, probably owing to the entrance of more women into conditions which had previously accounted for the greater incidence in urban males. The high sickness rate among working women must be attributed to poverty, lack of fresh air, long standing, and improper food. In munition work the results upon health were found to be good, owing to good wages, healthy conditions, and welfare supervision. Dr. Campbell said that the results showed that light sedentary work was by no means best, and that many women would have better health if they followed more active occupations.

Dr. LETITIA FAIRFIELD spoke from her experience in the Q.M.A.A.C. and W.R.A.F., and referred to the great value of grading for work. She attributed the higher sickness rate in women to the strain of household management being added to that of outside work, and said that women suffered more from lack of a good midday meal and good ventilation, and stood continued strain and "dope" worse than men. In her opinion the unreliability of the health of women about the age of forty was chiefly due to want of care at childbirth, and to chronic toxæmia due to dental disease, and both of these causes should be prevented. She said that no industrial work was harder than a woman's work in a poor home, with all the washing and cleaning and half a dozen children to mind.

Dr. C. M. PEAKE spoke of her experience in the Q.M.A.A.C. She said that as women had less muscular power and less leverage owing to less height, there was a need of adapting machinery and equipment to their use. She held that it ought not to be necessary for any one to lift heavy weights or work in cramped positions.

Dr. PILLMAN WILLIAMS gave statistics in reference to her three years' work as medical officer to a filling factory where 9,000 girls were employed. She found that the sickness rate in one section went down, when night work was stopped, from 24.2 per cent. to 20.24 per cent. a week.

Reviews.

THE HISTORY OF ST. BARTHOLOMEW'S HOSPITAL.

[SECOND NOTICE.]

In the first notice (*BRITISH MEDICAL JOURNAL*, March 1st, p. 253) of Dr. NORMAN MOORE's *History of St. Bartholomew's Hospital*¹ the early years of the institution and the general conditions which influenced its progress were considered. In the present article we propose to deal with the second volume of the work, which gives the history of the hospital after it had been placed upon a sound basis. It is probable that this volume will appeal to a wider circle of readers, for there the progress of the institution as a great force in the history of medicine is fully described. For another reason, also, the volume will be particularly welcome, for it affords the author an opportunity for the exercise of his well-known ability in writing medical biography, an

¹ *The History of St. Bartholomew's Hospital*. By Norman Moore, M.D. Two vols. London: C. Arthur Pearson, Ltd. 1918. (Demy 4to, Vol. i, pp. xxii + 614; Vol. ii, pp. xiii + 592. £3 3s. net.) The book is a present from the author to St. Bartholomew's Hospital, and the proceeds from its sale will be given to the hospital.

opportunity of which he has availed himself to the fullest extent.

When the final dissolution of the religious houses took place St. Bartholomew's remained closed for several years, but was reconstituted in 1544, and in 1547, by a grant of King Henry VIII, the hospital and its endowments became vested in the mayor, the commonalty, and the citizens of London. The excellent rules for its management drawn up on that occasion have served as a model for those by which it has been administered with but slight alteration down to the present day. The time was ripe for new methods. Old institutions, for good or for ill, had been swept away. The so-called "new learning," with progress and utility inscribed upon its banners, had just displaced the old scholasticism with its sterile logic little calculated to contribute to the happiness of mankind. On the ruins of the old order was raised the great hospital as we know it to-day. All this is described with great ability in the chapter entitled the "New Order," one of the best in the book; we commend it to those who would know the true history of the rebirth of the hospital. The judgement of mankind justly reprobates the ruthless and turbulent methods of Henry VIII when destroying the old order, but St. Bartholomew's Hospital is an instance in which the King's hand when dealing with its property was light. Dr. Moore when speaking of the grant by the King in 1547, observes, "Thus do we commemorate this destroying King, who might have taken away all the estate of St. Bartholomew's, but only took a small portion of it."

The chapters dealing with John Cok's cartulary, the ledgers, and the journals, are of great value, for the former enables us to understand the nature and position of the property of the hospital, while the ledgers and journals present us with a picture of its financial state and internal management. From an inspection of the ledgers it appears that, when once the hospital was established in 1547, its financial career was one of almost uninterrupted progress. In the last half of the sixteenth century the income varied between fifteen hundred and two thousand pounds a year, while in 1734, we are told, this sum had risen to about twenty thousand pounds; the improvement was steadily maintained until, at the present time, the annual income is some sixty-seven thousand pounds.

The eighteenth chapter deals with Dr. Caius and his long residence within the precincts of the hospital, and from this point onwards the rest of this second volume is devoted to a consideration of the medical aspects of the charity. It is here that Dr. Moore will particularly delight the student of medical biography and history. The method he adopts in describing the careers and characters of physicians and surgeons who have been connected with the hospital is happy. Taking as types the two great names of Harvey and Abernethy, he gives a full account of the lives of these distinguished members of the hospital staff, and then describes the activities of their successors. It may be said that the reputations of Harvey and Hunter have laboured under the disadvantage that their praises have been sung by generations of annual orators, some of whom it is true have not been too well endowed with the spirit of veneration and the knowledge of medical history. It is difficult to present the work and character of the "glory of English medicine" from a new point of view. Dr. Moore, however, has given a charming chapter on Harvey, erudite and accurate, and not the least part of its excellence is the veneration he exhibits for its great subject.

The services of physicians were not sought until some years after the reconstitution of the hospital in 1547, probably, as Dr. Moore thinks, because the funds were insufficient. Surgeons, however, were employed from the first, and were solely responsible for the treatment of the patients until, about 1568, Dr. Roderigo Lopez was appointed the first physician to the hospital. Lopez expiated the crime of high treason at Tyburn, and was succeeded by other physicians of the Elizabethan age, none of whom appear to have been greatly distinguished, with the exception of Dr. Timothy Bright, who is remembered as the inventor of a system of shorthand. With the appointment of Harvey to St. Bartholomew's, the long line of celebrated physicians may be said to have begun, and full information concerning their activities will be found in the chapter entitled "The Successors of Harvey." Many great physicians, such as Micklethwaite, Edward Brown, the Pitcairns, and the Lathams, to mention only

a few, have belonged to the staff of St. Bartholomew's, and although the chief incidents in their careers are known, in these pages we are given much new information regarding their special connexion with the hospital they served so well.

In the same manner the members of the surgical staff are treated, and special consideration is given to the biographies of the three outstanding men on the roll of the surgeons attached to the hospital—Percivall Pott, John Abernethy, and Sir James Paget. The chapter on the "Surgeons of the Old Guild" is most instructive, and excellent accounts are furnished of Clowes, Woodhall, Charles Bernard, and Freke, besides brief biographies of others little known and almost forgotten. The obstetricians and the apothecaries claim also a share of attention, and it is remarkable how many great names in obstetrics, such as Gooch, Conquest, West, and Matthews Duncan, are found in the chronicles of the staff. Great interest attaches to the accounts given of those members of the hospital staff who were well known in recent years, at whose feet some of us have received our first instruction in the art of medicine. Those who have had personal knowledge of these latter-day physicians and surgeons will read the biographies with pleasure, for they will often be able to recognize the train of thought that inspired the written word.

In the chapter describing the medical school is given the origin of that important part of the hospital's activities, while other chapters deal with the hospital buildings, the officers, the nursing staff, and the patients. In fact, every feature of the hospital is reviewed, and the book appears to be complete in every detail.

It might well serve as a model of the way in which the history of a great medical charity should be written. Although St. Bartholomew's is the oldest hospital in London, and therefore entitled, from the historical point of view, to take the first place, many others exist of sufficient importance and antiquity to demand an investigation of their records. We know little or nothing concerning the past history of these hospitals, and yet the material is ready to the hand of the enthusiastic and industrious medical historian. Historians have ably recorded the debt human intelligence owes to the fostering care of the universities through the centuries, and it is high time that similar service should be rendered to the hospitals for their care of the halt, the sick, and the lame, and for the opportunities they provided for the education of succeeding generations of students. This book, we may hope, will stimulate others to unravel the histories of the hospitals they serve, and so contribute to the foundations, now making rapid progress, of a complete history of medicine in the British Isles. In parting from this excellent work we desire to congratulate Dr. Norman Moore, and to express our opinion of its value in the words of King George III, who, after reading Burke's *Reflections on the Revolution in France*, said, "This is a good book, a very good book, and everybody should read it."

RADIOLOGY OF THE HEAD.

Those interested in the possibilities of radiography in head conditions will find Stocking's translation of SCHULLER's monograph on the *Roentgen Diagnosis of Diseases of the Head*² of great value. The book is essentially German in its construction, its wealth of detail, its extensive bibliography, and in its heaviness; nothing appears to have been overlooked; no small detail—important or otherwise—has been omitted; and the fact remains that when the reader has come to the end he will feel that apparently the last word on the subject has been written.

The material on which the book is based comes from two sources—namely, x-ray pictures of the normal and pathological skull and from clinical cases (some 5,500 in all)—and it is the result of ten years of work.

Following a short introductory chapter, historical and technical, the main thesis is divided into two parts. The first of these treats of the irregularities in the development of the skull, the anomalies of size and shape following on disturbances in the growth of the skeleton, the changes in bone structure due to inflammation and new growths, and

² *Roentgen Diagnosis of Diseases of the Head*. By Dr. Arthur Schuller, Head of the Clinic for Nervous Diseases at the Franz-Joseph Ambulatorium, Vienna. Authorized translation by Fred. F. Stocking, M.D. London: Henry Kimpton. 1918. (Med. 8vo, pp. 305; 97 figures. 21s. net.)

injuries of the skull. The second deals with the pathological changes in the brain which can either be shown directly, or which cause alterations in the bones of the skull. The changes which can be visualized by x rays in the nose, ear, eye, and teeth are discussed in an appendix; and the book is completed by a bibliography which fills some thirty-four pages.

Throughout there is constant evidence of the author's recognition of the limitations of x -ray diagnosis, or rather of the limitations of the value of x -ray shadows in intracranial conditions, and it is pointed out that, save in exceptional cases, pathological changes in intracranial organs, such as abscesses, exudates, cysts, haematomata, and soft tissue tumours, do not permit of direct exhibition on the x -ray negative; the reasons for this, and also the reasons for varying areas of density showing in the brain region on the negative, are pointed out. Radiologists would do well to make a complete study of pages 158 and 159, which bear on this part of the subject.

Attention should also be given to remarks on the value of an x -ray examination in cases of epilepsy; putting aside those in which trauma comes into the case—all of these should, of course, be radiographically examined—it is pointed out that the result of systematic x -ray examination in epileptics tends to confirm the present day belief that the domain of so-called genuine epilepsy is becoming more and more limited as compared to epilepsy with anatomical findings. Important information regarding operative or non-operative treatment can be obtained, and positive x -ray findings are observed in the skull in 30 per cent. of all epileptics.

The illustrations throughout are good, but many of the radiographs hardly reach the level of the highest class of skull radiography; this is especially the case in those dealing with the portrayal of the sella turcica. The plan has been adopted of reproducing, side by side, the radiograph and a drawing, the latter designed to demonstrate the essentials of the former from the pathological point of view. In outlining the method of x -ray examination it is very noticeable that no mention is made of stereoscopic radiography, and it is possible that the author would have modified his views as to the value of radiography in the diagnosis of defects of the brain itself if he had had the advantage in these cases of stereoscopic plates taken from both sides of the head.

NOTES ON BOOKS.

THE official *Home Nursing Handbook* of the St. John Ambulance Association³ has been compiled by a medical committee mainly from the manuscript of Miss M. HEATHER-BIGG, matron of the Charing Cross Hospital. It is a very sensible, clear, and practical pocket volume of reference, conveying the rudiments of the art of nursing in the form of simple rules for the treatment of illness or accident in a private house. The need for loyal co-operation with the medical attendant is insisted upon throughout.

³ *Home Nursing, arranged according to the Revised Syllabus of the St. John Ambulance Association.* By Mildred Heather-Bigg, R.R.C. London: St. John's Gate, Clerkenwell, E.C.1. 1918. (Pp. 272. 1s. 6d. net; by post 1s. 8½d.)

THE INDIAN SCIENCE CONGRESS.

(Continued from p. 346.)

THE Indian Science Congress, which met in Bombay from January 13th to 18th, under the presidency of Lieut.-Colonel Sir Leonard Rogers, F.R.S., I.M.S., as already reported, had four sections—agriculture and applied botany, physics, mathematics, and, for the first time, medical research; of the last named we propose to give a brief account.

Medical Research.

The president of this section, Lieut.-Colonel Glen Liston, I.M.S., gave an introductory address on "The next war: man *versus* insects," a title borrowed from an article by Sir Harry Johnston, pleading for a wider knowledge of the subject of entomology. Lieut.-Colonel Glen Liston said that in India two-thirds of the preventable diseases were to be attributed to the agency of insects. He referred to the early want of encouragement in India of research into the application, for the protection of troops, of the discovery that malaria was carried by anophelines,

and mentioned the impetus given to its study by the conference organized by Colonel Buchanan, I.M.S., in connexion with the Royal Society's Commission, consisting of Stephens, Christophers, and James, working in India. He then turned to the relation of the flea to plague, and referred to the great extension of the work at Parel Laboratory, due in large measure to the assistance and work of the Plague Research Commission and the personal influence of Dr. C. J. Martin. After sketching the objects of the Research Defence Fund, he pointed out that work done in the laboratory and that accomplished in the hospital and in the field could not be regarded as distinct. Co-operation was necessary, and the work of the Plague Research Commission had been so fruitful largely because the laboratory work had been combined with work in the field and in the hospital. But co-operation was not enough; men and money and means were required, and not only men, but leaders of men. In research each individual now worked independently and published his results sometimes too hastily without co-ordination. With regard to finance, in medicine the cost of the task was almost always underestimated, and too often the attack on disease degenerated into guerilla warfare. On one occasion only in the history of India had an adequate measure been taken of the task to be done; when vaccination for the prevention of small-pox was introduced a scheme was properly thought out and money provided, and even to-day more than half of the total sum expended on the prevention of disease in rural India was absorbed in fighting this one disease. In twenty years more than ten million lives had been sacrificed to plague—an easily preventable disease—and it ought to be clearly recognized that money spent on efficient health administration was in a very special sense remunerative. Munitions were required to win this war against disease, and India had been very badly provided with medical munitions. Every medical man in India should possess a microscope, which in a tropical country was an essential instrument.

After the address, papers were read on the breeding places of phlebotomus in Lahore, by Mr. J. L. Mitter; on a mosquito survey of Indore City, by Mr. M. P. Tirunarayana Ivengar; and on hydrocyanic acid gas as an insecticide, by Lieut.-Colonel Glen Liston and Dr. Gore. Solutions of potassium cyanide and sulphuric acid were used for generating the gas; the solutions were conducted into the room to be treated through tubing and mixed in a flat dish. It was found that 30 parts of hydrocyanic acid in 100,000 parts of air within a room sufficed to kill bugs and lice at all stages of development, including eggs, provided an exposure of two hours was given. As clothing led to diminution of concentration, it was necessary to estimate the gas strength in the room; an apparatus for doing so was described.

A paper on beri-beri was read by Major-General Hehir, I.M.S., who gave a description of the outbreak of beri-beri during the siege of Kut. It led to 155 admissions, but affected only the British troops. No case occurred among the Indian garrison, but they suffered severely from scurvy. The great majority of the cases of beri-beri occurred during the first three months of the siege, though the food ration was then better than at a later stage, both in quantity and variety. All but two of the men affected had been in Mesopotamia from an early stage of the expedition. Non-commissioned officers and privates were equally affected, and there were two cases among British officers. Severe continuous exercise appeared to precipitate the disease, which in a number of cases was preceded by diarrhoea or gastro-intestinal disturbance. The case mortality was 15 per cent.; 50 per cent. returned to duty after an illness of six weeks to two months, others were invalided. An intimate association was traced between the prolonged use of tinned meat and rationed biscuits, or white bread, by British troops and the occurrence of beri-beri. Owing to the fact that the Indian troops had scurvy and the British troops had beri-beri, a comparison of the diet was of interest. British troops ate horseflesh; the Indians did not; Indian troops used *dal*; the British did not. The British used white flour or biscuits for a large part of the time; the Indians throughout ate *ata* or barley flour. A relatively large issue of horseflesh towards the end of the siege probably accounted for the disappearance of the disease at that time. It seemed that the British troops were protected from scurvy by the ample ration of meat or

horseflesh, and that the Indian soldiers, though protected from beri-beri by the nature of their cereal ration, failed to obtain a sufficient supply of antiscorbutic vitamins owing to their refusal to eat fresh meat. The absence of carbohydrates from the diet of British troops led, towards the end of the siege, to loss of weight, lowered temperature, slowing of the pulse and marked debility. A paper on the pathogenesis of deficiency disease, by Lieut.-Colonel R. McCarrison, explained the observations reported in the article by him published in the BRITISH MEDICAL JOURNAL of February 15th, 1919.

In a paper on quinine Lieut.-Colonel J. W. Cornwall, I.M.S., pointed out that great differences of opinion were to be observed in therapeutic and pharmacological textbooks; in the treatment of malaria the non-selective toxic effects of quinine had been largely ignored; too much attention had been paid in India to relatively unimportant entomological side-issues, and too little to co-ordinated scientific inquiry into the pathology of malaria and the pharmacology of quinine. Major-General Hehir said that quinine was still the best remedy for malarial fevers, and that among treated cases malarial cachexia was less frequent than among an untreated population. If it failed to cure chronic malaria, quinine, if properly administered, controlled the disease.

A discussion took place on carriers of enteric diseases and amoebic dysentery. Methods of isolating the organism from faeces were described by Lieut.-Colonel Glen Liston and Dr. S. N. Gore, and by Major J. A. Cruickshank, I.M.S., and Assistant Surgeon H. M. La Frenais. The latter authors mentioned that the carriers were as a rule the fittest men in the dépôt, but usually at one time or another complained of pain over the gall bladder. During these attacks of pain the excretion of bacilli usually ceased. In the treatment of chronic carriers brilliant green by the mouth, injections of milk in some of the intestinal cases, and urotropin in the chronic urinary carrier, had been tried without benefit. Vaccines were now being tested. Captain MacAdam, R.A.M.C., in a paper on the amoebic dysentery carrier, said that in view of the nature of the changes present in the intestine in chronic relapsing dysentery it was very doubtful whether eradication of the infection could be expected from the administration of emetine in any form or by any mode. Attention should be concentrated on the thorough early treatment, by the combined hypodermic and oral exhibition of emetine, of primary acute attacks, and of cyst carriers when the signs and symptoms of ulceration of the colon were so slight as to be relatively negligible.

Papers on the rat problem were read by Majors J. G. C. Kunhardt, I.M.S., and J. Taylor, I.M.S.; the former concluded that rat destruction should be placed on a more scientific basis.

A very interesting and successful scientific *conversazione* was held at the Bombay Bacteriological Laboratory, when demonstrations illustrating a great variety of scientific subjects were given.

THE CENTRAL MEDICAL WAR COMMITTEE.

EFFECT OF RAPID DEMOBILIZATION.

The following statement describes shortly the winding up of the work of the Central Medical War Committee:

The Committee met on March 21st, and received the following letter from the Ministry of National Service:

March 19th, 1919.

Sir,

I am directed by the Minister of National Service to inform you that, in view of the fact that a more general demobilization of medical officers from the Royal Army Medical Corps is now understood to be imminent, it has been decided to discontinue the functions of this Ministry in the selection and nomination of medical officers for release by the Service Departments concerned. This decision will take effect as from the 1st April next.

It follows that such responsibility as this Ministry has hitherto undertaken in regard to the safeguarding of the Medical Service throughout the country, and which it has been able to exercise by means of its powers and functions in connexion with the demobilization of medical officers, will cease on the same date.

You will appreciate that this decision does not affect the position of your Committee as a Medical Tribunal, so long as the Military Service Acts and the Military Service (Medical Practitioners) Regulations, 1918, remain in force.

Steps are being taken to terminate on or about the same date the arrangements which have been in force in regard to secretarial and clerical assistance.

I am, Sir, your obedient servant,
(Signed) GEORGE CHRYSAL.

The Chairman,

Central Medical War Committee.

It will be remembered that, at the request of the Ministry and in consultation with it, the Committee drew up a scheme for demobilization of medical men on personal grounds, which was based primarily on length of service and age, with due consideration for special claims which might be put forward. The Secretary of State for War has stated that the Ministry of National Service had agreed with the War Office that the restricted procedure of selection of individuals for release should be discontinued. It follows from this that the Central Medical War Committee is no longer in a position to secure the release of doctors either on public or private grounds, and that in future their demobilization will be regulated solely by the consideration of whether the War Office can dispense with their services.

On receipt of the above letter the Committee came to the conclusion that its duties as advisory body to the Ministry of National Service were necessarily terminated, and it was stated by representatives of the Committee of Reference that it had decided to adjourn *sine die*. The Scottish Committee, it is understood, will in due course issue its own statement.

Though the Central Medical War Committee has finished its work in connexion with demobilization, it will not be dissolved until the Annual Representative Meeting in July next; and in the meantime will continue, through its General Purposes Subcommittee, to assist so far as it can those members of the profession still, or recently, on service. The Local Medical War Committees are therefore being advised not to dissolve, but to adjourn and hold themselves in readiness, in case any business arises which may call for their consideration.

The following letter has been received from Sir Auckland Geddes, Minister of National Service, and has been conveyed to the Local Medical War Committees with an expression of thanks from the Central Medical War Committee for the devoted and public-spirited work they have carried on for the past four years in the interests of their professional brethren and of the country:

March 24th, 1919.

Dear Dr. Verrall,

Now that the functions of the Ministry of National Service are terminating, I wish to express to you my high appreciation of the services which the Central Medical War Committee and its Local Medical War Committees have rendered in association with my Medical Department. These services have been continuous and often arduous, but they have been of very real value and assistance to the work of the Ministry.

I have always felt that through the Central Professional Committees, with their local organization, my Medical Department has been able to keep in touch with the medical situation throughout the country, and with the needs and views of the profession itself in a manner which has greatly facilitated its administrative work.

I shall be grateful if you will convey my own personal thanks and the thanks of the Government to the members of the Central Medical War Committee, and also to the Local Medical War Committees throughout England and Wales for the important national work which they have done.

Yours truly,
(Signed) A. C. GEDDES.

T. Jenner Verrall, Esq., LL.D.

THE COMMITTEE OF REFERENCE.

The Ministry of National Service having informed the Committee of Reference that it will discontinue to exercise its functions at the end of this month, the Committee will be unable to put forward, through the Ministry, the names of members of the staffs of the London hospitals and medical schools for early demobilization. The Committee has already applied for the release of all those whose names have been supplied to it, and will still endeavour by direct application to the Admiralty and War Office to facilitate the release of those who may yet be asked for by the hospitals and medical schools. Looking to the more general demobilization determined upon by the Secretary of State for War, the duties of the Committee of Reference except as a Tribunal of Appeal may now be considered as completed. Nevertheless, the Committee will remain in existence for the present with a view to afford any assistance which may be necessary to H.M. Government and for the consideration of other matters, incidental to the war, which may be referred to it.

British Medical Journal.

SATURDAY, MARCH 29TH, 1919.

THE HOUSING BILL.

THE new Housing Bill, introduced by Dr. Addison last week, is a comprehensive measure which differs from previous housing acts mainly in two respects. The first is that it places upon every local authority the obligation of considering the working class housing in its neighbourhood and making a report to the Local Government Board within three months; the second is the extended powers given to the Board itself.

Its housing legislation has not reflected much honour on the House of Commons. The Housing of the Working Classes Act (1890), of which the new bill is in form an amendment, was passed to consolidate some seventeen statutes all enacted with the object of providing and improving the dwellings of the working and artisan classes. That consolidating act had to be explained by another act in 1894, and new acts followed in 1900, 1903, and 1909, so that the law has again become involved in much the same tangle as brought about the passing of the consolidating act of 1890. The new bill is defined as being "a bill to amend the enactments relating to the housing of the working classes, town planning, and the acquisition of small dwellings," and the Housing of the Working Classes Act (1890) is referred to as the principal act.

A spirited endeavour is made in the new bill to avoid or remedy errors committed in previous housing legislation, and in particular not only to abolish slums, but to prevent "new slums being built on the old site." The bill, as has been said, requires a local authority to make a survey of its area and to submit to the Local Government Board within three months of the bill becoming law a scheme for the provision of houses for the working classes and fresh schemes when occasion arises. If the Board approves a scheme the local authority must carry it out within a specified time; if the Board considers a scheme inadequate, it may either approve it as an instalment or send it back and require a new scheme to be submitted within a stated time. If a local authority fails to prepare an adequate scheme or to carry it out after it has been approved, or if for any other reason it appears to the Local Government Board desirable, it may, after hearing the local authority, transfer the preparation and carrying out of a scheme to the county council. Power is given for local authorities to produce joint schemes, as will be necessary in some districts; in the London district, for instance, where a large number of authorities are concerned, the county council will have power to build outside London. If the local authority or the county council, or the joint authorities under a joint scheme, fail to fulfil their obligations, the Local Government Board may, after hearing the authorities or councils, itself prepare and carry out a scheme, and will have all the powers of a local authority under the Housing Acts.

The provisions in the bill for encouraging the erection of houses by public utility societies and housing trusts may prove to be of great importance, especially in connexion with the powers to be given to the Local Government Board. A public utility

society is defined as "a society registered under the Industrial and Provident Societies Act (1893), the rules whereof prohibit the payment of any interest or dividend at a rate exceeding 6 per cent. per annum." One of the objects of such a society must be the provision of houses for the working classes. Already a number of public utility societies are in existence, but the conditions produced by the war have hindered their activities. A society must comply with regulations to be made by the Local Government Board; and these regulations, it is expected, will be drafted on the lines recommended by the Hobhouse Committee. Under it all tenants would be entitled to become shareholders, and to elect annually a tenant members committee, which would appoint at least one-fourth of the board of management. A society may either raise the whole of its capital itself or may obtain a State loan repayable in fifty years, up to a maximum of three-quarters of the total cost of the housing scheme. Further, a subsidy will be granted, whether the money be borrowed from the State or raised privately, of an amount equal to 40 per cent. of the charges for interest and repayment of the three-quarters of the total capital. A housing trust is defined as a co-operation which by its constitution "is required to devote the whole of its funds, including any surplus, to the provision of houses for persons the majority of whom are in fact members of the working class." A local authority in preparing, and the Local Government Board in approving, schemes must have regard to any proposals by such bodies, and, moreover, a local authority or county council may make grants or loans to a public utility society, or subscribe to its capital, or guarantee interest on money borrowed by the society, or lease to it acquired land.

The fifth clause of the bill deals with the slum question. It authorizes the Local Government Board, on being satisfied that the area ought to be dealt with by the local authority under Part 1 or Part 2 of the principal Act, to require the authority to make a suitable scheme, and if the local authority fails to obey, the Board may authorize the county council to make and carry out the scheme or itself carry it out. Dr. Addison, in an explanatory statement, says that where a closing order cannot be made in respect of slum property because there are no other houses for the occupants to live in, a local authority will have power to acquire houses and alter and improve them to make them suitable. Justifying this he said, though no one was fond of slum patching, at the same time there are thousands of houses in London which could be made quite habitable by suitable alterations and adjustments. A house might be acquired and turned into flats, and thus, with much less use of building material and in a much shorter time, provide a greatly increased amount of accommodation of a decent kind. Advances or loans may be made for the purchase of houses which can be made suitable for the working classes as well as for the purchase and development of land.

The financial provisions have been drawn with the expectation that they will prevent the use of an acquired site for putting up another slum. The value to be paid is to be the value of the site, cleared of buildings and available for development, in accordance with the building by-laws for the time being in force in the district.

The scarcity of building material is an important limiting factor. It will not be possible to find either the material or the work for all the schemes which will be on foot within the next twelve months. Dr. Addison stated that 400 applications had already been received from local authorities for sites which would

provide 80,000 or 90,000 houses, and 90 of the authorities had already submitted plans for the houses themselves. The bill contains proposals designed to enable tenants to purchase houses provided by a local authority on the system of weekly payments.

The position with regard to small houses for the middle class is not clear: such houses are very much wanted. Dr. Addison indeed said that the need was as urgent as for working-class houses, and that the Government intended to try to meet the want; but it is not clear from the bill how this is to be done, and there would seem to be some difference of opinion about it in the Local Government Board.

EXPENSIVE EXPERIMENTS ON TUBERCULOSIS.

THE discussion on administrative problems relating to tuberculosis which took place at a special meeting of the Faculty of Insurance last month yielded some useful information and gave opportunity for expressions of present opinion by some well known experts. The fact is now fully recognized that neither sickness benefit nor sanatorium treatment, as applied hitherto, has any real effect upon the incidence and spread of tuberculosis in general. Hence some people are disposed to regard the expenditure of half a million as wasted money; but, from another point of view, it may be that a substantial return has been forthcoming in the shape of practical experience and guidance for future action. The value of all new forms of treatment of chronic disease is apt to be exaggerated when they are first introduced. The use of tuberculin and of open-air treatment, methods good in themselves, were brought into disrepute by over-statement and indiscriminate application. In like manner sanatorium treatment is now spoken of as a failure because it has not checked the general progress of the disease and has only afforded temporary relief in cases in which cure had been expected, if not actually promised.

The experience gained by these so-called failures has, however, paved the way to a new line of practice which, if it can be economically carried out, bids fair to yield better results for the community as well as to the individual patient. The establishment of farm colonies where consumptive persons can not only be treated on approved hygienic lines, but can be enabled to earn sufficient wages to maintain themselves and their families, as soon as their health is sufficiently restored to permit of work suitable for each case, has now been proved to be possible. As things are now, the well-to-do patient stands a far better chance of permanent recovery than the man who must work for his living. The latter, if he does so work, loses his insurance money, and must needs return to the very conditions under which his disease was developed. Insurance, as at present established, takes no heed of the essential difference between acute and chronic disease, and expert opinion is rapidly coming to the conclusion that special legislation must be undertaken to meet the peculiar conditions of tuberculosis, with its frequent fluctuations of activity and quiescence.

It is a significant fact that women, as a rule, derive more benefit than men from sanatorium treatment. One reason for this can be traced to the very general habit among women of using their hands in knitting or other such work when not occupied with domestic affairs. Too many men lose heart in the sanatoriums from sheer lack of interest and occupation. Many of them, even with advanced disease, are quite capable of undertaking light work if it can be done under truly hygienic conditions, and not in a crowded and perhaps

ill-ventilated factory. With the assistance of Parliament it might be possible to carry out on a large scale such a system as has now been shown to work so well at Papworth, in Cambridgeshire, under the superintendence of Dr. Varrier-Jones. Provision is there made for patients in all stages of the disease. Advanced cases are segregated, but permitted to occupy themselves whenever possible, and many of them are soon able to be classified as medium cases and become able to undertake suitable work, for which they earn remunerative wages. With the establishment of village colonies they will be able to start home life again. The early case may be so completely arrested as to warrant a return to former life, but all thus receive treatment unattended by financial anxieties.

The appalling numbers to be dealt with would seem at first to render such an idea altogether Utopian, but we have learnt during the last few years that gigantic schemes can be carried to success if the need for them is properly recognized. The present need of a comprehensive method for dealing with consumption is only too apparent to all who will take the trouble to look the facts in the face. It is to be feared that even in the House of Commons itself there is a tendency to look the other way when legislation on a large scale is suggested for the solution of the problem, and it is reported that the representatives of labour, who should be chiefly interested in schemes which concern the well-being of the working classes, have invariably absented themselves when tuberculosis has been under discussion. The presence of a larger number of medical members in the new House will, we have no doubt, ensure a hearing for the scientific side of the question, which is well set out in a memorandum¹ on the share of colonies in the treatment of tuberculosis, by Dr. J. E. Chapman, medical inspector of the Local Government Board, recently issued by that Board.

The problem is many-sided, and has to be examined from the social, economic, and psychological aspects as well as from the medical side. While the Papworth experiment has proved the possibility of solving a part of it, an ideal scheme must be the work of years, and there is danger of miscarriage from over-zeal or too great hurry. To attempt to deal with it summarily or by placing it under bureaucratic management will inevitably lead to failure; but by slow progress on the lines already indicated, and by taking advantage of experience as it is acquired, there is reasonable prospect that in time the disease may be materially decreased if not suppressed.

ORGANIZATION OF THE MINISTRY OF HEALTH.

WE have received the following notification: "In view of the impending retirement of Sir Horace Monro, K.C.B., Permanent Secretary to the Local Government Board, and in order to facilitate the unification of the departments which will be brought together in the Ministry of Health on the passage of the bill now before Parliament, the President of the Local Government Board has appointed Sir Robert Morant, K.C.B., Chairman of the National Health Insurance Commission, and Mr. John Anderson, C.B., Secretary to that Commission and at present acting as Secretary to the Ministry of Shipping, to be additional secretaries to the Local Government Board, with special functions and responsibilities in relation to the organization of the new department, continuing their insurance functions. Sir Robert Morant and Mr. Anderson have been designated as First and Second Secretary respectively in the new Ministry." In this new office Sir Robert Morant will have a wide scope for his great

¹ H.M. Stationery Office. 2s. net

organizing abilities. His appointment is a good omen for the future of the Ministry of Health. It may be recalled that when Sir George Newman was appointed to be Principal Medical Officer to the Local Government Board, rather more than a month ago, it was announced that he would have the status of a Secretary of the Board, and would have administrative responsibilities in respect of the work of his department.

THE PHYSIOLOGY OF A WORKING DAY.

GRADUAL reduction of the hours of labour from ten or nine to eight, and now to seven or six, must have made many people wonder whether some scientific basis might not be found for the hours which should be worked in various trades. Major A. C. Farquharson raised the matter in the discussion on the second reading of the Ministry of Health Bill. Speaking as one who had spent the greater part of his professional life in the service of the miner, he expressed his astonishment that members of the House of Commons should be so ready to put forward the idea that the number of hours a man should work day by day was to be settled by the arbitrary capricious decision of the mass. He contended that it was a scientific problem, and suggested that if science could establish that a normal man could work up to a given standard without detriment to his physical condition and without injury to his health or chance of longevity, the number of hours of a working day could be standardized. In the discussion on the bill in committee he contended that there ought to be a scientific department, working in relation with the Ministry of Health, to decide various matters of a physiological nature in relation to capital and labour, including suitable hours of work. We may point out that a large amount of scientific work had been done in this direction, some of which is summarized in the reports of the Health of Munition Workers Committee, but the subject is complex and physiology is far from having found a complete solution. It is comparatively easy to estimate the amount of energy given out in various kinds of work at various paces, but muscle fatigue is only one and probably the least important element in fatigue. There is in addition the mental element, which cannot be measured, and the nervous element, which it will be possible to measure with difficulty if at all. Nervous fatigue occurs in the initiating and distributing nervous mechanisms of the brain and spinal cord, which are more quickly fatigued than the contracting muscles; consequently in the animal body the impulses to activity, springing from the brain, cannot bring the muscles far towards complete fatigue before their sources are themselves fatigued and impotent. Though a tired man may refer his tiredness to the muscles, in reality the most severe bodily activity does not produce any close approach to complete fatigue of the muscles. The fatigue is of the nervous system, though its effects may be referred to the muscles. The conclusion of the committee was that the problems of industrial fatigue were primarily, and probably almost wholly, problems of fatigue in the nervous system and of its direct and indirect effects. Another complicating matter is that the human body seems to be adapted to withstand short spells of severe labour, broken by longer spells of rest; the point is illustrated by the story of a wager between two officers at the front as to the time to be taken in making equal lengths of a trench, each with an equal squad of men. One officer let his men work as they pleased, but as hard as possible. The other divided his men into three sets, to work in rotation, each set digging their hardest for five minutes and then resting for ten. This second team won easily. Another conclusion—this time in a report by Dr. H. M. Vernon to the same committee—was that the hours of labour ought to be varied between wide limits according to the character of the work performed. This seems the most promising line of inquiry.

MEDICAL BLIND ALLEYS.

A CORRESPONDENT raises the question whether the multiplication of whole-time subordinate medical appointments, which is one of the tendencies of the day, is to the advantage either of medicine or of individual practitioners. The matter ought not to be considered merely from the point of view of administrative convenience. It concerns not only the medical officer of health or the chief tuberculosis officer, nor even the subordinate officers appointed, but also the medical profession generally, since each appointment withdraws from general practice, and indeed from all independent practice, certain classes of disease or of patients. It also concerns the public, since it is to its advantage that the general practitioner should have as large a field of observation as possible. Our correspondent, who writes from a large industrial town with more than one hundred thousand inhabitants, where there is at present only one general practitioner working under the corporation, states that the medical officer of health—who, he says, is strongly opposed to part-time medical officers—has carried the Public Health Committee with him, and very soon the corporation will advertise for two assistant medical officers to assist in the treatment of children at the school clinic, and at a maternity hospital for serious cases, and at a baby clinic shortly to be opened. In addition to the medical officer of health and his chief assistant there will be two assistant medical officers, receiving salaries of £550 and £450 a year respectively. "The seemingly large salary, with regular hours, is," the writer says, "a strong temptation to young men, especially those who married soon after qualifying, and joined the R.A.M.C. for the war. But what prospect is there of the three assistants in this town ever becoming medical officers of health; and how much higher will their salaries rise? How many tuberculosis officers and assistant school officers can become superintendents and consultants? I know that the Local Government Board and many municipal authorities prefer full-time men, and there is much to be said in favour of such appointments, but do the men themselves realize the end towards which they are travelling—that for most of them this work is really a blind alley?" We entirely agree with our correspondent, and the position of assistant medical officers of asylums, to which attention has recently been drawn in our correspondence columns, is an object lesson of what is likely to happen with the school service and the tuberculosis service. They are not graded services, the appointments are made by local authorities, and promotion to the higher posts must be very much a matter of luck, or dependent on other qualities which Lieut.-Colonel Henry Smith and Dr. Mercier have recently described in pungent phraseology we will not attempt to imitate.

THE CENTENARY OF AUSCULTATION.

In 1819 appeared Laennec's *Traité de l'auscultation médiate*, a work which is one of the landmarks in the advance of medical science. The inventor of the stethoscope, whose full Christian name was René Théophile Hyacinthe, was born in 1781, at Quimper, in Brittany. Like Bichat, Dupuytren, Récamier, and other men who rose to distinction in the early part of the nineteenth century, he had to serve as a regimental surgeon in the Republican armies while he was still a student. In 1816 he was consulted by a buxom young woman with a diseased heart. Unwilling to employ immediate auscultation, Laennec rolled a quire of paper into a cylinder, and applying one end of this to the cardiac region and the other to his ear was surprised to find that he was able to hear the sounds of the heart more clearly than he had ever heard them before. He followed up this observation, and by the use of the new method discovered a number of previously unknown signs of chest disease. In 1818 he communicated the results of his work to the Académie des Sciences, which listened to the announcement of his epoch-

making discovery "with respect but without enthusiasm." His book was received with distrust, and the stethoscope was ridiculed as a toy. C. J. B. Williams, the chief of the early exponents of Laënnec's method in England, says that but for the admirable description of diseases contained in the *Traité de l'auscultation médiate* the discovery would have been allowed to fall into oblivion. In 1823 Laënnec was appointed professor of internal medicine in the Paris faculty, and he was physician to the Charité, to which students flocked from all parts of Europe. At the bedside he always spoke in Latin for the benefit of his foreign hearers. He was a man of frail physique, and his private practice never exceeded £1,000 a year; though he was physician to the Duchesse de Berri he was not popular in court circles, in which he was spoken of as *ce petit sec*. In his own profession he found severe critics. Antoine Portal, one of the leading physicians of his day, who differed from him as to the case of Madame de Staël in her last illness, has left a bitter judgement of his method of treatment and his discovery. Laënnec died in 1826, of the disease which he did so much to elucidate, as has often been the fate of physicians.

THE CHEPSTOW WHITE ELEPHANT.

THE story of the National Shipbuilding Yard at Chepstow has given food for much local gossip, has stimulated some ironic letters to the newspapers on the general text that truth is stranger than fiction, and has inspired at least one poet, who has sung "Nobody minded, the public paid." The plan for a yard to build standard ships was originally made by a company; it was afterwards taken over by the Government, and has now, we understand, finally been abandoned. Authorities at Chepstow have been shifting, and we are not at the moment prepared to specify which it was that prudently decided to erect a hospital for the many thousands of workmen contemplated in the grandiose scheme originally formed. A hospital for 100 beds was built at it, it is said, at a cost of £100,000. It covers a great deal of ground, and has, it is alleged, been planted in the middle of a plot of 200 acres which the company, before the Government superseded it, had set aside for a garden city. That may be an invention of the enemy, but the site, being on a hill with a very awkward approach, was not well chosen for a hospital. The hospital buildings are finished, though a few weeks ago a certain amount of work was still being done on them, and the grounds were being tidied; it has not, we believe, been equipped. The hospital is not wanted at Chepstow, a small town with a dwindling population of under 3,000 before the war. The buildings have, it is stated, been offered to the Monmouthshire County Council as an isolation hospital or an institution for mental defectives. For either purpose it may serve; but we understand that the Pensions Ministry is now contemplating taking it over as a hospital for discharged pensioners, to serve the whole of South Wales. This aspect of the matter is one in which the medical profession is bound to take an interest. We have made inquiries in South Wales about this "unwanted hospital," and find that the project of treating pensioners from South Wales and Monmouthshire at this place has not received the local support and backing from representative bodies which such a scheme must have in order to make it a success. We understand also that medical opinion is not in favour of the plan. Chepstow is a border town, a land's end of the area which it is suggested it might serve; it is not easily accessible from the populous areas of Monmouthshire and South Wales from which soldiers who will require treatment as pensioners were recruited. To reach the hospital long and tiresome journeys, which out-patients certainly ought not to be expected to take, will be necessary. It is unsuitable even as a temporary expedient. The Pensions Ministry would do well to face the difficulty, and at once set to work to make up for the year that has been lost in hesitations. We have referred so far

only to the inconvenience and loss of time caused to pensioners, but the inaccessibility of Chepstow involves another drawback. The men are patients who will go to the hospital for treatment and deserve the best the country can provide. The site of the hospital may be picturesque but it is in an out-of-the-way corner, and it is difficult to see how an efficient medical and surgical staff can be made readily available for every condition and all emergencies. The war is over, medical demobilization is going on apace, and it will not be easy to obtain a suitable staff at Chepstow except by methods which will necessarily be very expensive to the Pensions Ministry. We are informed also that quite recently a scheme has been entertained for the establishment of a special surgical centre for the orthopaedic treatment of pensioners at this Chepstow hospital. This new scheme would supersede the original plan approved during the period of hostilities for the establishment of such a centre at Cardiff. After the approval of this original scheme an estate was bought in the immediate vicinity of Cardiff for this specific purpose, and it seems strange that the local voluntary enterprise should be thrown over for this new plan at Chepstow, which we suspect would never have been thought of as a suitable place but for the fact that a hospital is going begging. Cardiff, the seat of the Welsh Medical School, is the largest centre in Wales for specialists in all branches of medical and surgical knowledge, and it is difficult to find any valid reason why the Cardiff scheme should be mutilated or abandoned for this unwanted hospital at Chepstow.

THE BIRTH-RATE.

THE fact that in the last quarter of 1918 the civilian deaths in England and Wales exceeded the births by 79,443 will no doubt stimulate public interest in the proceedings of the National Birth-rate Commission. Sir Rider Haggard, who was the first witness on March 24th, while obviously sceptical as to the feasibility of schemes—much favoured by the wealthier class of urban residents—to people the rural districts of this country with demobilized soldiers rearing large and healthy families on the produce of small holdings, thought that much might be done to maintain the supply of infants by encouraging emigration. Dr. C. Killick Millard, who followed Sir Rider Haggard, contested the view that a man ought to be accused of failing in his duty if he declined to have children merely for the sake of emigrating them to the antipodes. Dr. Millard came forward as a whole-hearted supporter of birth control. In his opinion, the success of the League of Nations would deprive the advocates of unlimited procreation of their most effective argument—the need for large supplies of cannon fodder. Apart from the military argument, the chief objection to birth control as at present practised was, he considered, its dysgenic effect. The C3 classes adding to the population in a larger proportion than the A1 group. Were all classes equally to practise birth control the limitation would cease to operate selectively; indeed, it might be possible to improve the race by a suitable propaganda tending to the accretion of birth control amongst tainted stocks. We shall no doubt be accused of frivolity when we say that the proceedings of the Birth-rate Commission, the discussions of the bishops at the Pan-Anglican Conference, and most of the literature dealing with the subject recall to us the combat between the lion and the unicorn for the crown which, as the White King explained to Alice, was *his* crown. There is not, we conceive, the slightest reason to expect that the provision of small holdings in England or cheap passages to Canada, the pronouncements of bishops, or even the aphorisms of eminent physicians, will affect the birth-rate in the second place of decimals. Whether the decline of the birth-rate is the unmixed blessing which members of the Malthusian League deem it or the unmixed evil which various divines assert it to be, or

whether, as Dr. Millard holds, it is only an evil in so far as it is dysgenically selective, it will not be arrested until an equilibrium has been established between the available income per head and the standard of life demanded by each social class.

A MEDICAL RESEARCH CONSPECTUS.

SINCE the end of hostilities the Medical Research Committee has had under consideration the question of continuing in another form the compilation of abstracts and reviews of foreign publications in medical science which, with a view to special war conditions, have hitherto been issued in the *Medical Supplement* to the Daily Review of the Foreign Press. The *Medical Supplement* as such will be discontinued after the April number, but representations have been made to the committee from many quarters, urging the continuation upon a permanent basis of a summary of a similar kind. It appears to have been found in many directions that the *Supplement* has served a useful purpose in aiding both the progress of research and its application to practical problems. The Medical Research Committee has made arrangements accordingly to publish in monthly issues periodical collections of abstracts and reviews of work done in the medical sciences and recorded either in British and American publications or in those of other countries. It is intended to leave a short interval between the cessation of the *Supplement* and the beginning of the new periodical, and it is hoped that the first number will appear on October 1st next, at the beginning of the academical year. Its size will be a large octavo, uniform with that, for instance, of the *Quarterly Journal of Medicine* and of an increasing number of other scientific journals. The contents will be in the form of abstracts of individual papers, with occasional critical summaries of grouped results, taken from published work making advance in particular branches of medical science. A detailed prospectus will shortly be prepared, and will be sent upon application made to the Medical Research Committee, 15, Buckingham Street, Strand, W.C.2.

BUTTER FOR INVALIDS.

SINCE March 1st this year, margarine has been obtainable in any quantities and from any retailer; consequently extra rations of fat for invalids have not been required as from that date, except in cases where margarine is shown to be unsuitable. The Ministry of Food has been advised that cases in which butter is required by invalids in lieu of margarine are extremely rare. Owing to the shortage of butter which still exists in the country, it is not yet possible to raise the ordinary ration above the limit of 1 oz. weekly. In these circumstances permits for extra butter on medical grounds can only be granted in very exceptional cases, and such permits are being limited to cases in which the doctor certifies that the applicant cannot digest margarine. It is recognized by the Ministry that this regulation will exclude many cases in which doctors may think that an allowance of butter, whilst not strictly necessary, would benefit the applicant; also that the filling in of these particulars in the medical certificate imposes a further burden on medical men, some of whom find it very difficult to spare the time. But we are assured that the present position in regard to butter makes it essential that the regulations should remain in force until supplies became more plentiful.

LIEUT.-GENERAL SIR C. H. BURTCHAELL, K.C.B., Director-General Medical Services, France, has been appointed Director of Medical Services, India, in succession to Lieut.-General Sir T. J. O'Donnell, K.C.I.E., who has vacated that appointment, which he has held since 1916. Surgeon-General W. R. Edwards, C.B., I.M.S., is Director-General of the Indian Medical Service. The University of Dublin, at which he graduated in 1889, recently conferred

upon Sir Charles Burtchaell the honorary degree of LL.D. At the conclusion of the ceremony the students of the university drew his carriage to the Provost's house, where he and Lady Burtchaell were entertained at luncheon. In the afternoon Sir Charles Burtchaell gave a stirring address to the students of the School of Physic.

THE week ending March 22nd saw a further decline in the number of deaths attributed to influenza. The total for the great towns was 1,358 (2,305 in the previous week) and for London 230 (435 in the previous week). The only great town returning more than 100 deaths was Birmingham, with 107 (50 less than in the previous week). In Oldham, which was one of the two towns reporting an increase in the week ending March 15th, the deaths declined from 33 to 13.

Medical Notes in Parliament.

Ministry of Health Bill.

STANDING COMMITTEE.

THE third sitting of the Standing Committee was held on March 20th under the chairmanship of Sir Archibald Williamson.

CLAUSE 3. TRANSFER OF POWERS (*continued*).

The Projected Transfer of Poor Law Functions.

At the previous sitting Captain Barnett had moved to omit the declaratory paragraph in subsection 3 of Clause 3, as follows:

It shall be lawful for His Majesty from time to time by Order in Council to transfer from the Minister to any other Government department any of the powers and duties of the Minister relating to the matters specified in the First Schedule to this Act, and any other powers and duties of the Minister which appear to His Majesty not to relate to matters affecting or incidental to the health of the people.

Captain Barnett and Sir Samuel Hoare argued that the paragraph was platitudinous. Dr. Addison said that both trade unions and friendly societies were anxious to have a declaration of policy in the bill. He promised that before the report stage he would confer with those who assisted him in framing the clause; and on that assurance the amendment was withdrawn.

Orders in Council.

In a brief general discussion on the adoption of Clause 3 Sir Courtney Warner expressed the opinion that the Minister should devise other methods of carrying out certain provisions of the bill than by Orders in Council. Sir Ryland Adkins suggested that an Order in Council should be laid in draft before each House, and not submitted to His Majesty until a resolution approving it or modifying it had been passed. Dr. Addison thought the suggestion useful, and that it might be considered on the report stage. The clause was passed.

CLAUSE 4. CONSULTATIVE COUNCILS.

On Clause 4, which sets forth that "It shall be lawful for His Majesty by Order in Council to establish consultative councils" to give advice and assistance as might be determined by the provisions of the Order, Sir Watson Cheyne moved to substitute the words "It shall be the duty of the Minister to set up advisory councils." His point was that these councils should be an integral part of the bill; the appointment should not be subject to the passing whim or fancy of a Minister. They all trusted Dr. Addison, but they did not know who might succeed him. For the same reason Sir Watson submitted that the word "advisory" was preferable to "consultative" in defining the councils. Sir Philip Magnus, in supporting the amendment, said that as the clause stood the appointment of councils was permissive, not obligatory. Unless the Minister was well advised by members of the medical profession the work would not be as satisfactory as it could be made. Sir Alfred Warren said that the advisory committees under the National Insurance Commissioners were of little use. The members did not know what happened to their recommendations. Would the Minister of Health pay due regard to the representations to be made under this proposal?

Major Astor said that the form "It shall be lawful" was used because if an Order in Council was to be made by His Majesty and submitted to Parliament, it would not be in

accordance with tradition to say regarding contemplated action by His Majesty more than "It shall be lawful." If the form suggested by Sir Watson Cheyne were adopted the matter would rest with the Minister without it being brought before Parliament. A third course possible was for the bill to define the orders to be made, but that would be most undesirable, as it would give no flexibility. He thought there was not much difference between the words "consultative" and "advisory." After all, the responsibility was with the Minister. Major Astor therefore asked the Committee not to do anything to weaken the responsibility of the Minister to Parliament.

On a question by Sir Courtney Warner as to the strength of the councils, Dr. Addison said that if he set them up in any form he liked, it would mean that he was subject to parliamentary criticism, and that was desirable. In framing the Housing Bill he had found great advantage from the advice of trained experts. The draft order proposed that the councils should consist of not more than twenty members. He already had in mind to constitute four committees—local government, medical, insurance, and one to represent the general public. Under Clause 6 power would be taken to pay travelling expenses and out-of-pocket expenses. The Minister would not be bound by the recommendations, but would be responsible to Parliament. Already there were such bodies advising the Board of Education, the Board of Trade, the labour exchanges, and the Insurance Commissioners. As for the terms "advisory" and "consultative," the term "consultative" had been used as more generally acceptable.

Sir Watson Cheyne accepted the explanations as satisfactory and withdrew his amendment.

A Women's General Consultative Council.

Sir Samuel Hoare moved that one of the councils should be called the Women's General Consultative Council, and should consist entirely of women. He referred to a communication he had received that afternoon from an organization, presided over by Lady Rhondda, representing 500,000 women in favour of this proposal.

Dr. Addison asked that the motion should not be pressed, as it would lead to demands for other special councils, and then his hands might be tied. It would in any case be necessary to appoint some of the councils or committees mostly of women, and it might be found that one or two was composed entirely of women.

The amendment was defeated by 22 votes to 14.

At the meeting of the Committee on March 25th, on the resumed consideration of Clause 4, Sir Watson Cheyne improved the English of the text by getting the phrase "every council shall consist of persons of both sexes" changed to "consist of men and women." Mr. Griffith wanted to have it stated that "a substantial number" of the members of the councils and committees should be women; but Dr. Addison said that while he would be the last to object to the inclusion of women, some of these councils would deal with highly technical questions as to which women would not have the special knowledge requisite. The amendment was withdrawn.

Reports of Consultative Councils.

Mr. Godfrey Locker-Lampson proposed that the reports of the consultative councils should be published within two months of their presentation to the Ministry except in those cases in which a recommendation was made to the contrary. If the work of the councils was to be paid for out of public money, Parliament had a right to know what they were doing. Major Astor advised that the motion should not be pressed. The effect of publishing reports would be that certain points of a confidential character would be held back from reference, or indeed, some investigations might be stopped. The amendment was withdrawn.

CLAUSE 5. PROVISIONS AS TO WALES.

The provisions as to Wales were next considered, and Dr. Addison proposed the following new clause:

The Minister shall, subject to the provisions of this Act, appoint such officers as he may think fit to constitute a Board of Health in Wales, through whom he may exercise and perform in Wales in such manner as he may think fit any of his powers and duties; the Board and any officer who is a member thereof shall act under the directions, and comply with the instructions, of the Minister.

Dr. Addison explained that in effect it would in any case be necessary to have some separate organization for Wales—as, for instance, for housing schemes—but these organizations would be under the direction of the Minister of Health. In those circumstances he thought it desirable

that a Board of Health should be constituted in Wales, but it was necessary to safeguard the Minister with the power to communicate direct with officers, and so avoid the delay of consultations with the Board as to various matters.

The new clause was agreed to.

CLAUSE 6. STAFF AND REMUNERATION.

On Clause 6, which provides for the appointment of the Minister (at a salary of £5,000 a year) and staff (at such salaries and remuneration as the Treasury may determine), Mr. George Thorne proposed that one at least of the assistant secretaries should be a woman, but after a short discussion he withdrew this in favour of a broader amendment to set forth that in the making of staff appointments no discrimination should be made by reason of sex between men and women.

Major Astor said the amendment was unnecessary, and Dr. Addison asked that it should not be pressed, and that the committee should accept his assurance that women would be given office on their merits. He mentioned that he had just appointed Dr. Janet Campbell to a position at the Local Government Board. In doing so he had in mind the services she would be able to render in the Ministry of Health; and he had, in fact, "exercised discrimination" in favour of a woman for the reason stated. He asked to be allowed free discretion.

In the discussion several members held that the amendment would not tie the hands of Dr. Addison, and Dr. Murray introduced a touch of humour by suggesting that Dr. Addison should accept the amendment, as, in changing political conditions, it would tend to protect men in securing for them a share of offices on the score of "no discrimination."

There was a short discussion on the subsection of this clause as to the expenses of the Ministry. In the end a proposal by Major Astor was accepted to the effect that members of the consultative councils and committees should be paid travelling expenses, subsistence expenses, and reasonable compensation for loss of remunerative time.

CLAUSE 7. PARLIAMENTARY SECRETARIES.

On the motion of Dr. Addison, words were added at the end of Clause 7 providing that two secretaries of the Ministry might sit in the House of Commons at the same time.

CLAUSE 8. ORDERS IN COUNCIL.

It will be recalled that at an earlier stage Sir Ryland Adkins obtained from Dr. Addison a promise to see whether the procedure under Orders in Council could not be made more directly subject to parliamentary control than was proposed in the bill. Dr. Addison now proposed that, in addition to the condition that each Order should be laid in draft on the table of each House of Parliament, Orders relating to specific powers and duties mentioned in subsections 2 and 3 of Clause 3 should not take effect until both Houses of Parliament had adopted them by resolution; the other Orders, which would concern administrative matters, would in the ordinary way lie on the table—in draft—for thirty days, and then be submitted to His Majesty unless questions were raised.

CLAUSE 9. THE SCOTTISH BILL.

On the motion of Dr. Addison, Clause 9, applying the bill to Scotland, was withdrawn, as a separate measure is being introduced for Scotland.

CLAUSES 10 AND 11. TRANSFER OF POWERS.

Clauses 10 and 11, providing for consequential modifications of the Insurance Acts and dealing with title and definitions, were passed with small amendments.

Mr. Locker-Lampson raised the question of a time limit for the transfer of the powers to be taken over by the Minister under subsection 1 of Clause 3—that is, the powers immediately transferable. He suggested that the time limit should be a year. Dr. Addison was willing to accept a provision of the kind, but wished the period to be "within one year from the passing of the Act" as being more convenient for financial and other reasons. Words to this effect were inserted. A subsection was also added that the provisions for Wales should apply to Monmouthshire.

APPLICATION TO IRELAND.

The Attorney-General for Ireland (Mr. A. W. Samuels, K.C.) proposed a new clause to apply the bill, with modifications, to Ireland.

Mr. Devlin urged that before action was taken for Ireland there should be a conference of public health bodies in Ireland, and a health measure should be evolved to meet the needs of the people. He objected to the

inclusion of Ireland in a health measure which was really designed for England and Wales as evident from the fact that the people of Scotland would have nothing to do with it.

The amendment of Sir William Whitla for an Irish Board of Health had not been reached when the Committee adjourned until March 27th.

MEDICAL TREATMENT OF CHILDREN (IRELAND).

The Attorney-General for Ireland (Mr. A. W. Samuels) moved the second reading, on March 24th, of a bill to extend to Ireland the English system by enabling local authorities to have medical inspection of children in elementary schools. The councils of the counties and the county boroughs are to be the local authorities for the purposes of the measure. The Treasury will provide an amount not exceeding one-half the expenses that may be incurred by the local authority in setting this relief in operation and carrying it into effect. In the course of the debate several members regretted that the provisions of the bill were weaker than those of the English Act. Under the last named the duty is imposed on the local medical authority to provide medical inspection; under the Irish bill the matter is permissive. Mr. McGuffin said that the conditions of the schools in Ireland were deplorable; in many instances the ailments of the children were contracted there. The situation in Belfast was very bad for a city that aspired to any kind of civilization. Sir Maurice Dockrell read a short report sent to him by the medical officer in Dublin to the effect that inspection of school children in Dublin was absolutely essential in the interests of the public health. Mr. Devlin asked why the proposals of the bill were not incorporated in the new health proposals for Ireland. Sir Edward Carson added his protest against the bill being permissive, and Viscount Duncannon spoke to the same effect. Mr. Samuels, in reply, said that if the bill was to be mandatory it would be necessary to set up in each county a new medical authority, and it would be necessary to consider whether the county councils, many of which were moribund, were the proper bodies to make the appointments for the new medical authority. Under another bill introduced later on the same day new county councils are to be set up and would take up these matters. Hence the Children's Bill was kept on permissive lines. The question, however, could be further considered in Committee, as also the subsection which, taken up from the Act of 1909, left it to the parent to decide whether the child should be submitted to inspection or treatment. The bill was read a second time.

Notification of Venereal Diseases.—Major Astor, in reply to Major Courthope, said, on March 24th, that the President of the Local Government Board, as at present advised, was not prepared to propose regulations for the notification of persons suffering from venereal diseases. A question of law raised by Major Courthope—namely, whether the President of the Local Government Board had statutory power to schedule venereal diseases as notifiable, was at present under examination. In reply to Mr. Stewart, the War Secretary said that it was the practice to retain in hospitals soldiers suffering from venereal disease at least as long as they were in an infective condition. Major Courthope asked whether, on March 4th, the Registrar of Cherry Hinton Military Hospital reported to a local medical officer that on the previous day a soldier had been discharged from hospital at his own request suffering from venereal disease and in an infectious condition; and whether, under the existing regulations, the officers in charge of a military hospital were unable to retain a venereal patient who was due for demobilization to complete treatment; and whether, in the interests of public health, he would prohibit the release of men so suffering. Mr. Churchill replied that inquiry was being made, and he would communicate as soon as possible.

Cerebro-spinal Meningitis at Cambridge.—Dr. Macnamara, in reply to Sir Clement Kinloch-Cooke on March 24th, said it had not been possible to trace the "carrier" supposed to be responsible for the outbreak of cerebro-spinal meningitis at Cambridge. The last case was reported on March 7th.

Sanatorium Treatment for Soldiers.—Sir Worthington Evans stated, on March 20th, in reply to Sir Kingsley Wood, that a disabled soldier under treatment in a sanatorium, or other institution for an attributable disability, received an allowance at the maximum rate of pension, from which a deduction of 7s. was made; not for the cost of treatment, but for maintenance. The bonus of 20 per cent. was not added to the man's pension, because the deduction made for maintenance was so small as largely to relieve the man of the high cost of living which the bonus was designed to meet. Under Article 4 of the Royal Warrant a disabled man might be subject to the condition that he should undergo medical treatment in an institution or otherwise where it was certified that such treatment was necessary to his interests. Statistics of refusal had been kept since July of last year. During the eight months between July 1st, 1918, and February 28th of the present year, 1,477 cases of refusal of treatment for tuberculosis had been brought under the notice of the department, and of these 71 were under consideration. Of the 1,406 refusals dealt with, it had been necessary to impose the penalty only in 99 cases.

The Retired Pay of Discharged and Disabled Soldiers.—Asked by Major John Edwards whether the recommendations of medical boards were invariably carried out in the granting of pensions and deferred pay to discharged and disabled soldiers,

Sir L. Worthington Evans said, on March 20th, that he could not admit that medical boards were the only qualified authorities to survey the disabilities of officers and men. It was found by experience that medical boards differed very greatly in their views and assessments, and in fairness to the disabled it was desirable that the reports of the boards should be carefully reviewed by well qualified medical men at the Ministry of Pensions in order to maintain a proper common standard of award.

Hospital Accommodation at Ports.—Major Astor, replying to Mr. Leslie Scott on March 20th, said that he was aware of the request of the Port Sanitary and Hospitals Committee of the Liverpool Town Council to the War Office that the Fazakerley Fever Hospital, which had been in military occupation since the beginning of the war, might be at once released, the Local Government Board had already supported this request and had suggested to the War Office that they should at once consider whether the American Red Cross Hospital at Mossley Hill might not serve the purposes of the military authorities. Mr. Leslie Scott asked what practical assistance the Local Government Board could offer to the port sanitary authorities of the country towards providing hospital accommodation for influenza, as urged by the Army Medical Council and the Local Government Board. Major Astor said that a conference had been arranged with representatives of the port authorities at which this question, amongst others, would be discussed.

Dogs Bill.—Sir F. Hanbury has reintroduced his Dogs' Protection Bill, and obtained a second reading on March 21st, when it was committed to a standing committee. Its object, he stated, was to prevent experiments for medical research on dogs.

Consumptive Service Men.—The reference to the Inter-departmental Committee regarding the treatment of consumptive service men, set up at the instance of Lieut.-Colonel Nathan Raw, is "to consider and report upon the immediate practical steps which should be taken for the provision of residential treatment for discharged soldiers and sailors suffering from pulmonary tuberculosis, and for their reintroduction into employment, especially on the land."

The Demobilization of Army Medical Officers and Nurses.—Asked by Mr. Leonard Lyle what were the latest orders issued for the demobilization of medical officers and nurses still attached to the army, Mr. Churchill said, on March 25th, that instructions had been issued that medical officers should be released from all theatres of war immediately it became possible to dispense with their services, and that the number employed should be reduced in proportion to the reduction in other arms as far as the large areas occupied, and the wide distribution of troops in enemy territory, permitted. Orders had also been issued that all nurses should be released immediately their services could be spared. During the last ten days considerable numbers of doctors and nurses had been demobilized. As regards those officers serving in India, the peace establishment, which was composed of regular army officers only, was being adjusted as quickly as circumstances permitted, and 100 regular officers were on their way or were awaiting early passage.

MENTAL AFTER-CARE ASSOCIATION.

THE annual meeting of the Mental After-Care Association, formed in 1879 to facilitate the readmission into social life of poor persons convalescent or recovered from institutions for the insane, was held under the presidency of Mr. Stanley Keith at Skinner's Hall, Dowgate Hill, on March 12th. Dr. Henry Rayner (Chairman) read the annual report for 1918. In commenting on it, he referred to the value of the society's work in preventing relapse by the tactful and kindly after-care of its agents, and to the important part played by the cottage homes in confirming convalescence and preparing discharged patients to resume a useful, if humble, part in the world's work. Suitable occupations and the needful equipment had been found for many who otherwise would have joined the ranks of the unemployed; amongst them were patients who had suffered from shell shock during the war. The number of patients that had been dealt with by the association during the year was 670; this was hardly one-tenth of the number annually discharged recovered from rate-supported asylums; there was, therefore, ample scope for extended operations did funds permit. The income in 1918 was £2,276.

The adoption of the report was moved by Dr. Norman Moore, President of the Royal College of Physicians of London, who recalled the varied stages of the treatment of the insane from the thirteenth century downwards, and seconded by Mr. A. H. Trevor, Commissioner of the Board of Control, who foreshadowed lunacy legislation promoted by the board to simplify the treatment of incipient mental disease. Speeches in support of the association were also made by the Hon. John Mansfield (Lord Chancellor's Visitor in Lunacy), Sir Rowland Blades, M.P., Mr. Gabain, Dr. Percy Smith, and Sir George Savage, M.D. The offices of the association are at Church House, Dean's Yard, Westminster.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

THE thirty-sixth annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society was held at the offices of the society, 300, High Holborn, W.C., on March 25th. On the motion of Dr. MARTLEY, Dr. W. K. SIBLEY was appointed to preside in the absence of Dr. F. J. Allan, who was unavoidably detained elsewhere.

Dr. SIBLEY read the address prepared by Dr. Allan. It stated that the society, which had to draw its membership from one profession, had necessarily been considerably affected by the removal of large numbers of medical men from civil to military life, and by the fact that the number of men qualifying had been much reduced. For these reasons the number of new applications for membership had been fewer, while many of those remaining were at a higher average age period or graded as unfit for military service, with a consequent greater tendency to sickness. The strain of work on the profession had been particularly heavy, and the influenza coming on top of the war work had led to claims being made by 10 per cent. of the members for this disease, at a cost to the society of £3,600. The amount paid on claims of members invalided home on active service had increased year by year, and last year amounted to £4,177. There was no doubt that the effects of the war would be experienced for many years to come, and that a number of members would be permanently on the fund. It was therefore of the highest importance to have a substantial reserve of assets, inasmuch as claims on account of influenza continued to be fairly heavy. It was, however, encouraging to know that as demobilization was taking place applications for membership were being received in increasing numbers each week. The returns of medical students recently published showed that of the number of students registered 2,692 were women. This large prospective addition to the ranks of the medical profession, and the frequent application of women practitioners to become members of the society, had induced the committee after much consideration to prepare and submit to the meeting a scale of premiums for the admission of female members of the profession to the benefits of the society for sickness. The scheme was to a large extent experimental, and after it had been working for a reasonable period might have to be revised for entrants after that date. If the meeting agreed to the admission of women it would be necessary to make certain alterations in the by-laws. The greatest economy had been exercised in regard to the general expenses, which showed a reduction of £231 as compared with the previous year, but extraordinary expenditure had been incurred for the quinquennial valuation and the transfer of investments to the names of the new trustees. The committee, however, saw no reason to doubt that the expenses would be kept within the limits of the 10 per cent. allowed. Certain misconceptions still existed in the minds of a few members on the question of bonuses, due probably to the fact that those members had not taken the trouble to read the rules of the society. It should be clearly understood that no one insuring for sickness benefit was entitled to a bonus on reaching the age of 65. It was not until 1910 that the society was definitely empowered to grant bonuses, and then only under specified conditions and after a quinquennial valuation. There must then be a surplus over the amount required to meet liabilities and the actuary must advise that a distribution should be made. A bonus had thus been paid with the advice and approval of the actuary, and but for the abnormal conditions produced by the war a bonus would doubtless have been repeated last year. The actuary, however, took a strong view of the matter, and not only did not recommend it, but advised strongly against it on that occasion. The committee, therefore, had no option in the matter and had reluctantly to suspend the payment of bonuses during the next five years. No promise could be made, but there appeared no reason to doubt that a resumption of the distribution of the surplus might be permitted after the next valuation, and it might even be possible to make it retrospective since the assets of the society were invested almost entirely in funds the dividends of which were not liable to be affected by labour troubles.

The CHAIRMAN having replied to questions regarding certain items, the report of the committee and the audited accounts for the twelve months ending December 31st, 1918, were, on the motion of Dr. BALL, adopted.

It was decided to admit ladies to the membership of the society on the scale before the meeting and the necessary alterations to the rules of the society were agreed to. (Dr. Allan relieved Dr. Sibley of the chairmanship at this point.) The executive committee was re-elected with the addition of Mr. F. Swinford Edwards as a vice-president.

A vote of thanks was accorded to Dr. Sibley for presiding, and the proceedings terminated.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed in Action.

CAPTAIN W. C. D. WILSON, R.A.M.C.(T.F.).

Captain William Charles Davidson Wilson, R.A.M.C.(T.F.), who had been reported as missing in the casualty list published on October 5th, 1918, was returned as killed in that of March 19th. He was educated at Aberdeen University, where he graduated M.B. and Ch.B. in 1915. He held a commission in the R.A.M.C.(T.F.), in the Second Highland Field Ambulance, attaining the rank of captain on February 12th, 1916.

CAPTAIN T. A. TOWNSEND, M.C., R.A.M.C.(T.F.).

Captain Thomas Ainsworth Townsend, R.A.M.C.(T.F.), who was reported as wounded and missing near Rocquigny, on March 24th, 1918, is now presumed killed on that date, aged 32. He was the only son of the late Thomas Sutton Townsend of Queen's Gate, S.W., and of Sutton Manor, Rugby, and was educated at Oxford, where he graduated B.A. in 1910, and at Guy's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1914. After acting as house surgeon in the eye, ear, and throat department at Guy's Hospital, he went out to Serbia as surgeon to the British Red Cross. He took a commission as Captain R.A.M.C.(T.F.) in the 1st City of London Field Ambulance on December 25th, 1915, and at the time of his death was attached to the 1/20th Battalion of the London Regiment. He received the Military Cross on November 25th, 1916, and a bar thereto on February 18th, 1918, and also held the Serbian Order of St. Sava.

HONOURS.

C.B.E.

Lieut.-Colonel (temporary Colonel) Alfred Bertram Soltau, C.M.G., R.A.M.C.(T.F.), has been appointed a Commander of the Order of the British Empire (Military Division) for valuable services rendered in connexion with military operations in France and Flanders.

Scotland.

THE NEW CHAIR OF THERAPEUTICS IN THE UNIVERSITY OF EDINBURGH.

SPECULATION is rife regarding the occupant of the new chair of therapeutics in the University of Edinburgh, to the foundation of which reference was made in the JOURNAL on March 8th (p. 290). The conditions on which the chair can be held are in some respects novel. The new professor will have wards in the Royal Infirmary, but he will undertake not to engage in private practice. Since the salary is £1,100 a year, not so large a sum in purchasing power as it was before the war, the University Court may not, perhaps, have a large number of possible holders of the chair to choose between. We understand, however, that the holder of the appointment will not be debarred from acting, for instance, as medical adviser to one of the large insurance companies, and in this way adding substantially to his stipend. The absence of the worries and vicissitudes of private practice will be an inducement, since it will allow time for the prosecution of research and for its encouragement in others. The new teacher will be in close touch with the professor of pharmacology and

materia medica and with his laboratory, and so the experimental and the clinical sides of the work will be associated, with advantage to both. On the purely clinical aspects of the subject the professor of therapeutics would be able to gather together groups of cases for specialized study, and would have the facilities offered by the clinical laboratory in the Royal Infirmary, with the foundation of which the late Dr. George Gibson had so much to do. The appointment seems to offer many attractions to a man with a leaning towards research and teaching.

GRADUATE MEDICAL TEACHING IN GLASGOW.

For many years prior to the war post-graduate classes in medicine had been conducted at several of the hospitals in Glasgow, but no organized scheme was in operation whereby the teaching in the different hospitals might be correlated.

Early in 1914 the attention of the medical faculty of the university was directed to the subject, and on March 5th, 1914, at a largely attended and representative meeting of the medical teaching staffs of the university and other medical schools, and of the general and special hospitals of Glasgow, convened at the request of the medical faculty of the university, a committee was appointed to promote co-operation between the various bodies concerned. Information having been obtained as to the facilities for graduate study in the various hospitals in Glasgow, an executive committee was formed to complete arrangements and draw up a syllabus for the purpose of instituting a general scheme of post-graduate medical teaching early in 1915.

With the outbreak of the war in August, 1914, the scheme fell into abeyance, and nothing further was done until February, 1919, when, at a conference between the medical faculty of the university and the General Committee for Post-Graduate Medical Teaching, it was agreed to institute an emergency course of post-graduate medical teaching during the ensuing summer session particularly to meet the needs of graduates who have been on service. Arrangements have now been made to carry out such a course in medicine, surgery, obstetrics, and special subjects in various hospitals in Glasgow. The course, which will be clinical and practical, will be held during the months of May and June, 1919, and graduates may enrol for either or both months. Two schemes of teaching have been arranged:

Scheme A.—Graduates will be distributed among the clinics in the proportion of five or six to each, each graduate to have under his charge a certain number of beds, and to be responsible for the due investigation and recording of the cases, and for all special investigations in connexion with them, working directly under and along with the physician or surgeon in charge, and in connexion with the ordinary clinic.

Scheme B.—Special post-graduate classes for graduates alone. No fee will be charged for instruction under Scheme A, but for the special classes under Scheme B an inclusive enrolment fee of 5 guineas for the two months' course, and of 2½ guineas for one month. For this fee graduates may attend as many classes as they wish.

Further particulars may be had on application to the Acting Secretary, General Committee for Post-Graduate Medical Teaching in Glasgow, Dr. A. M. Kennedy, Pathological Institute, Royal Infirmary, Glasgow.

As certain of the special classes under Scheme B may be limited in numbers, and as the appointments under Scheme A are also limited to six to eight to each clinic, graduates wishing to attend the course are advised to send their names to the acting secretary as soon as possible.

MINISTRY OF HEALTH.

The following statement, signed by Sir R. W. Philip, President, regarding the proposed Ministry of Health, has been put out by the Royal College of Physicians of Edinburgh:

The Royal College of Physicians notes with cordial approval the Government's action in giving a primary place to legislation in the interest of the health of the people.

The College learns with satisfaction that it is the intention of the Government to remove from the Ministry of Health Bill, 1919, the provisions relating to Scotland, and to introduce a measure establishing a separate Health Ministry for Scotland. The College expresses the earnest hope that the Scottish Bill will be proceeded with as soon as possible.

The College desires to emphasize the view that, whatever form the Ministry for Scotland may take, it is essential

for the development of the Ministry that responsibility for the initiation and control of health measures applicable to Scotland should be vested ultimately in one official, specially appointed and responsible for this office only—whether as President or Vice-President of the Board of Health—who should be a Member of Parliament.

The College is of opinion that in constituting the Board regard should be had to the selection of its members on grounds of experience and interest in matters pertaining to health. This implies a larger medical membership than the Bill seems to contemplate. In view of the extent of the health interests involved, the proposed inclusion of one medical member is quite inadequate.

Further, in the selection of medical members, it is undesirable to require the possession of one or other special diploma. The members should be chosen on the ground of their capacity and experience in medicine.

With regard to the Consultative Councils to be erected (Clause 4), the College favours the proposal. Their establishment will tend to ensure the effective co-operation of the profession with the Ministry in the carrying out of preventive and curative measures conducive to the health of the people. The College strongly recommends that the medical members of the Consultative Council should be chosen by the medical profession.

Having regard to the extent and variety of questions which have arisen and will arise in connexion with a Ministry of Health, it is essential that these Consultative Councils should be really effective bodies, initiating as well as qualifying proposals, and that they should have ready access to the Minister.

The College believes that the establishment of such Consultative Councils will be found capable of further development locally, in connexion with the practical administration of the Measure.

INSURANCE AND HIGHLAND ESTIMATES.

The Civil Service Estimates indicate that the amount required in the year ending March 31st, 1920, for the expenses of the National Insurance Commission, Scotland, is £836,834, a net increase of £136,602 on the previous year. The largest increase is in the special grant in aid for medical benefit; this has increased by £53,500 to £218,000. The grants in aid for sickness, disablement, and maternity benefits show an increase of £52,650, raising the total to £314,450. The next largest increase is that in salaries, wages and allowances, from £47,782 to £69,434. There is also an increase of £2,000 in travelling expenses, to the total of £5,000, and an increase of £3,900 in medical and sanatorium benefits, raising them to £15,800.

The estimates of the amount required in the year ending March 31st, 1920, for the Islands and Highlands Medical Service Board, and for the grant in aid of the Islands and Highlands Medical Service is £43,993; of this amount £42,000 is for the special grant and other purposes connected therewith. The amount is the same as in 1918-19. Technically the grant is only authorized by Parliament to December 31st, 1919, but the Secretary of State for Scotland implied the other day that it would be continued, and that the transfer of powers to the Minister of Health would not affect this specific appropriation.

SCOTTISH HOSPITALS AT ROUEN.

A pamphlet entitled *Appeal and Case for Members of the Nursing Staff of the Scottish Red Cross Hospitals, Rouen*, has been prepared by Mr. G. W. Wilton, Advocate of Edinburgh, and issued as an address to the Scottish Branch of the British Red Cross Society. We do not intend to express any opinion on the merits of the case, but it is clear that the nursing staff of the hospital was not happy, and that the V.A.D.s, or some of them, shared the unhappiness of the sisters. Fortunately there is ample evidence that the work of the hospital did not suffer. The D.D.M.S. Rouen base reported on February 10th, 1918, after the troubles had come to a climax, that he had not observed any falling off in the efficiency of the unit. "The wards are excellently kept and the patients well looked after; in fact, this section is up to, if not superior to, the standard of any unit in Rouen." From the point of view of the public and the medical profession this is the essential fact. The nursing sisters must have had the larger share in attaining this standard; and if, as is evident, they are labouring under a sense of injustice, it would appear proper that the public inquiry for which they ask should be granted.

Correspondence.

HOSPITAL TEACHING UNITS.

SIR.—I quite agree with all you so kindly say in praise of me. It is excellent reading, and makes me feel quite capable of doing much more mischief yet. But I wish, please, your permission to say that in putting before the governors of the London Hospital the scheme of trying some "whole-time units" I had no intention whatever of "handling the matter so deftly as to lead the public to think that the London Hospital alone contemplated such a change." I knew that University Hospital already had one such unit and was very immediately contemplating another, and that other hospitals were considering it.

In all my hospital life I have always avoided comparing the work of "The London" with that of any other hospital, except when I have swaggered a little, for begging purposes, about its being the largest. It is the duty of all hospital managers to work in harmony with each other, and I should indeed "pull the strings of the shower bath" if I were to put the London on a pedestal and point at it.

As I am "on my legs," may I once more emphasize what I said at that meeting, and you in your article note, that this change to putting some of the work under whole-time units is the joint conclusion of the House Committee and medical staff, and does not emanate from me more than the others? Moreover, there is not a dissentient voice amongst the members of either body.—I am, etc.

London Hospital, E., March 24th.

KNUTSFORD.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR.—Colonel Sargent's letter prompts me to state that a detailed account will shortly be published of an attempt to ascertain the value of treating retention of urine in cases of spinal injury by expression of the bladder or by allowing passive overflow to take place. The investigation was carried out in France by Major P. N. Vellacott, and the fact that his paper was in the press made me refrain from taking part in the discussion which has been going on in your columns. When this account is published it will be seen that the condition of the urinary tract in these cases was receiving careful consideration and that a serious attempt was being made to establish whether the methods of expression and passive overflow were really better than catheterization. My own belief is that these methods have very great advantages over treatment by catheterization, but the details of the series of cases will soon be available so that each may judge for himself.

No observations were made of the ureteric orifices in this series of cases, as we were very doubtful whether any useful information could be gained by the examination. We were of opinion that in septic cases the examination would be of little value, while in clean cases it was not justifiable. The condition of the ureteric orifices seemed to us to be of small significance, and did not weigh with us in deciding to have the investigation carried out. What did make us hopeful of good results were the encouraging accounts given by American surgeons who had tried these methods of treatment.

Infection of the urinary tract may undoubtedly occur in these cases apart from catheterization, as will be seen when Major Vellacott's paper is published.—I am, etc.,

London, W., March 25th.

A. E. WEBB-JOHNSON.

SIR.—It would be a comfortable view to hold, as Colonel Sargent apparently would wish us, that the fulminating alkaline cystitis which spreads with such rapidity to the kidneys and in a few months causes the death of one in three cases of paraplegia is due to the spontaneous development of cystitis and not to infection borne by the catheter. Unfortunately, in the cases of which I have personal knowledge, the catheter had always been passed and the type of cystitis—a virulent haemorrhagic form with alkaline decomposition of the urine, and a mixed bacterial content with the streptococcus and staphylococcus predominating—was just the type of cystitis that is accepted as due to catheter infection. It would be interesting to hear that this mixed infection developed spontaneously in the paraplegic bladder. Colonel Sargent is silent on this point, and until we have some more convincing proof that this

occurs I suggest that the use of the term "catheter infection" is appropriate in these cases.

Colonel Sargent proceeds to discuss the treatment of cystitis in the paraplegic bladder. Throughout this correspondence confusion has persistently arisen between cystotomy for cystitis and cystotomy as a prophylactic measure, and it seems to me necessary once more to state my position in regard to this matter.

I recommended cystotomy with complete exclusion of the catheter as a means of preventing the development of ascending pyelonephritis, my view being that the ascending infection resulted from recurrent distension of an infected bladder between the catheter evacuations. Further, I pointed out that there were two stages in almost all cases: (1) A stage of complete retention; (2) a stage of periodic reflex micturition which usually became permanent. The average duration of this first stage was sixty days, and the bladder should be drained during this period and allowed to heal when the second stage developed. This line of treatment has nothing in common with cystotomy for the drainage of an infected bladder already complicated by pyelonephritis.

Colonel Sargent explains the practical difficulties of nursing cases of cystotomy of which Colonel Fullerton wrote. The patient "who is being passed down the line from hospital to hospital has a leaking suprapubic opening from which the urine flows over his hips and soaks the bedding." Certainly a most objectionable state of affairs, and one certain to produce bedsores. But may I, without hurting anyone's feelings, ask why the patient has a leaking wound? Was the watertight suprapubic tube, which would drain into a bottle between the thighs, removed, or was the surgeon unable to produce a watertight suprapubic drain? Just recently I have met with a case in which the tube was removed for the train journey, and I have been wondering ever since why this was done.

My statement in regard to massage of the bladder in the hands of American surgeons was based on the account in the *Manual of Military Urology* compiled by Colonel Hugh H. Young (of Johns Hopkins University) and published for the American Expeditionary Force, on conversations with Colonel Young, and on Major Besley's article published in 1917.—I am, etc.,

London, W., March 25th.

J. W. THOMSON WALKER.

HAEMORRHAGIC SPINAL EFFUSIONS.

SIR.—I was much interested in Colonel W. P. S. Branson's article published on p. 337-8 of your last issue, and would like to suggest that a possible diagnosis in his two cases was "partial rupture of an intracranial aneurysm of the posterior cranial fossa."

His two patients complained of an illness with a sudden onset, accompanied by extreme frontal headache, vomiting, and stiffness of the neck, and in their spinal fluid red and white blood cells in great excess were found.

In an investigation carried out at the London Hospital between the years 1907 and 1913, Turnbull and I¹ found in 0.80 per cent. of examinations of the head one or more intracranial aneurysm, none of which had a syphilitic origin. A common history in these cases was of one or more seizures, each accompanied by intense headache, vomiting, and the appearance of blood cells in the cerebrospinal fluid.—I am, etc.,

London, W., March 25th.

EDWIN G. FEARNSIDES.

THE NOGUCHI METHOD OF CULTIVATION.

SIR.—To avoid the possibility of misunderstanding, I desire to amplify a, perhaps, obscure paragraph in my obituary notice of the late Major H. G. Gibson, R.A.M.C., published in the *BRITISH MEDICAL JOURNAL* of March 8th, 1919.

Referring to the cultivation, by the Noguchi technique, of a minute filter-passing coccus, I stated that the independent findings of Majors Gibson and Bowman and Captain Connor had been confirmed by the work of Captain J. A. Wilson, R.A.M.C., a note on which was published by Sir John Rose Bradford, Captain Bashford, and Captain J. A. Wilson in the *BRITISH MEDICAL JOURNAL* and the *Lancet* of February 1st, 1919.

This paragraph, though intended merely to show that

¹ *Brain*, xxxix, 1916, 224.

similar findings, mutually confirmatory, had been arrived at independently by two groups of investigators, has been construed as an implication that priority was claimed by me for Majors Gibson and Bowman and Captain Connor. No such implication was intended. Though Captain Wilson's work was not considered by Sir John Rose Bradford to be sufficiently complete to justify publication until the latter part of January, 1919, this officer had been successful in making "Noguchi" cultures of what appears to have been the same organism some months before this was done by Gibson, Bowman, and Connor.

At the same time, full credit for independent and original work must be given to the latter workers, who were unaware that the "Noguchi" technique had already been employed in culture work in influenza. As the paragraph in question has already given rise to misunderstanding, I hope that, in justice to Captain J. A. Wilson, this letter may be given early publicity.—I am, etc.,

S. L. CUMMINS, Colonel A.M.S.,
Adviser in Pathology, B.E.F., France.

March 19th.

MEDICAL RECONSTRUCTION.

SIR,—The profession is about to be reformed, and in its own interest and reputation had better assist. The nation desires disease prevention, and, when that is impossible, its efficient treatment. The present system is, the more disease the more money for the trade; prevention and efficiency would interfere with trade profits; the profession should shut up shop.

The easiest road to a national health service is by an extension of the insurance service. In connexion with hospitals it is time to abolish charity and honorary staffs. The working classes do not exist for the purpose of providing experience to be utilized for the benefit of the rich. Citizen hospitals should be the nuclei of local medical services. Opportunity for efficiency must be available for all doctors. The popularity of the service will depend on its efficiency. Doctors lack time off and pensions. Down with trading, up with science.

Let us have unity in the profession, by the British Medical Association and the Medico-Political Union joining together—the one for science, and the other for professional unionism.—I am, etc.,

Wigan, March 24th.

FERDINAND REES, M.D.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

SIR,—I am standing as a candidate for the Council of the Royal College of Surgeons of England in the interests of general practitioners. I am a Fellow in general practice, and feel that at the present time it would be a help to the College and to the medical profession to have someone on the council who had a knowledge of general practice.

I am quite independent and belong to no association.—I am, etc.,

London, W., March 24th.

J. F. JENNINGS, F.R.C.S.

The Services.

ACTING RANK AND GRATUITIES.

IN the SUPPLEMENTS of January 4th and January 18th, 1919, we drew attention to the injustice caused to many Territorial medical officers by first changing their higher temporary rank to equivalent acting rank, and then prescribing by Army Order that acting rank would not count in the assessment of gratuity. We are very glad to be able to state that this grievance has now been removed.

An Army Order dated March 11th, 1919, lays down that for the assessment both of the gratuity under Article 497 of the Pay Warrant and of the war gratuity under Army Order IV of February 11th, 1919, officers will be granted the benefit of any acting rank held by them at any period during their service subject to the following conditions:

(a) That such acting rank has been held during the present war for an aggregate period of not less than 182 days, and has not been relinquished owing to misconduct or causes within the officer's own control; or

(b) That such acting rank, or the pay thereof, under A.C.I. 1251 of 1917, was relinquished owing to a wound received in and by military service; or

(c) That the officer became non-effective owing to a disability caused or aggravated, in the first instance, by military service while holding such acting rank.

If the acting rank held by an officer has varied during the period or periods which render him eligible for the gratuity under (a), any period less than 182 days in a higher rank will count towards the 182 days' qualifying period in the next or lower rank. Unpaid acting rank does not entitle an officer to a higher rate of gratuity. Where an officer receives permission to retain higher rank than the temporary or substantive rank held by him at the date of the termination of his service, the gratuity will be assessed on the basis of such higher rank. Officers entitled to gratuity at a higher rate under the conditions laid down in (a) must submit a claim to the agent or paymaster, supported by a certificate showing the periods during which they held the acting rank in respect of which the higher rate is claimed. Officers wishing to claim gratuity at a higher rate under (b) or (c) must apply direct to the Secretary, War Office (Accounts, 1, Agents) supporting their claim by full particulars.

It will be seen that the new Army Order applies to many other R.A.M.C. officers beyond those of the Territorial Force whose case was dealt with in our previous articles.

NAVAL GRATUITIES.

The British Medical Association is informed by the Accountant-General of the Navy that approval has now been given for the payment to Temporary Surgeon Lieutenants, R.N., of a naval discharge gratuity of £60 for each year's service, or part of a year's service, subject to a minimum of two months' pay (£67 2s.) as provided for in existing regulations.

Obituary.

W. VICARY SNOW, M.D., F.R.C.P.LOND.,

Consulting Physician, Royal Victoria Hospital, Bournemouth.

DR. VICARY SNOW, who died on March 10th at the age of 78, was one of the makers of Bournemouth as a health resort, and was a prominent figure in the professional life of Dorsetshire. He studied medicine at University College, which then had a teaching staff of exceptional brilliancy. He took the diploma of M.R.C.S. in 1864, graduated M.B.Lond. with honours in 1865, and M.D. in 1866. He was admitted M.R.C.P.Lond. in 1870, and was elected a Fellow in 1899. He served the office of house-physician at University College Hospital, and was for some time resident medical officer of the Kent County Ophthalmic Hospital. He then settled at Bournemouth, where for many years he had a large practice. He was consulting physician to the Royal National Sanatorium for Consumption and Diseases of the Chest. He was a recognized authority on pulmonary tuberculosis, and his opinion on chest cases was highly valued by his colleagues. He was the author of publications on the contagiousness of phthisis (*BRITISH MEDICAL JOURNAL*, 1884); the treatment of consumption (1891); and the climatic treatment of consumption and the open-air treatment of phthisis (*Transactions of the British Congress on Tuberculosis*, 1901). He was a president of the British Balneological and Climatological Society. He retired from practice a few years ago.

Dr. Snow was a past-president of the Dorset and West Hants Branch of the Association, and to the end of his life took the keenest interest in its progress and prosperity. He was president of the Therapeutic Section at the annual meeting of 1891. He was a man of simple and somewhat reserved manner, with a lofty ideal of professional dignity. He never deviated from what he considered the right path.

DR. JOHNSON SMYTH, who represented the Council of the Association at his funeral, writes: "Dr. Snow had the rare gift of maintaining friendships with those from whom he differed most keenly in things medical. The younger men here really regarded him with veneration, and they spoke of him as 'Dear old Snow.' He attained high honour in the profession of his choice, but in any profession his high intelligence and industry would have carried him to a high place. His brethren at Bournemouth are the poorer for his loss."

T. V. DE DENNE, M.R.C.S., L.R.C.P.,
Sidmouth.

THOMAS VINCENT DE DENNE, who died on March 17th, was the third son of Mr. W. Denne, F.R.C.S., well known for many years as the first medical superintendent of the Three Counties Asylum, Arlesey, Bedfordshire. The son received his early education at Bedford Grammar School.

In 1864 he entered St. Thomas's Hospital Medical School, then at the old Surrey Gardens, in Newington. The school was small, and carried on with difficulty, but there was a powerful staff, among them Risdon Bennett, Peacock, and Bristowe, Solly, Le Gros Clark, and Simon. He took the diploma of M.R.C.S.Eng. in 1868, and that of L.R.C.P.Edin. in 1870. After holding lunacy appointments, for some time being assistant medical officer at St. Andrews, Northampton, he went into practice with the late Dr. Hugh Kerr of Halesowen and Cradley Heath. Here it was he did his life's work. For nearly a quarter of a century he worked as hard as a man could work. It is not too much to say that he gained the good will and esteem of all. He was a charming personality, and always held high the honour of his profession. In 1904 he moved to Sidmouth, and practised there with great success until 1918, when ill health (heart trouble) compelled him to retire. He may truly be said to have died in harness, having worked with his successor Dr. Spence-Bernard up to December last. When he died he was on a visit to his brother-in-law Mr. George C. Franklin at Fareham. He was laid to rest in the cemetery there on March 20th amid the keen regrets of loving relatives. At the same time a memorial service, largely attended, was held at the parish church at Sidmouth. De Denne was a good and consistent churchman, and acted for many years as churchwarden at Cradley, and afterwards at Sidmouth.

He leaves a widow, two sons—Lieutenant Henry de Denne, R.N.R., and Paymaster Lieutenant Commander Cecil de Denne, R.N.—and two daughters. The youngest son, Sublieutenant Geoffrey de Denne, Devonshire Regiment, was killed in France on October 4th, 1917.

DR. ERNEST FRANK SYRETT, of Dovercourt, died after a brief but painful illness on February 20th. He was born at Ramsgate in 1869, and was educated at Maidstone. He studied medicine at St. Bartholomew's Hospital and obtained the London Conjoint diplomas in 1891 and the M.B. and B.S. degrees at Durham University in 1893, proceeding to the M.D. degree two years later. After holding the post of resident medical officer to the Fleming Memorial Hospital for Sick Children at Newcastle-on-Tyne, he served for a short period as a medical officer in the Peninsular and Oriental Line. Subsequently he practised first at Nayland, near Colchester, and later at Dovercourt, where he held most of the public medical appointments, including that of M.O.H. for the borough of Harwich. Dr. Syrett was typically an able country general practitioner. Quick at absorbing knowledge and ready in applying it, he was also very competent in organizing his work. In this way he was able to carry on a wide general practice in addition to performing satisfactorily the duties connected with his numerous public appointments. His services in connexion with the war hospitals and other military matters at the fortified town of Harwich had obtained for him the friendship and respect of the naval and military authorities. He was extremely popular with his patients, and his popularity was increased in private life by his keenness as a sportsman. He married in 1899 Maude, elder daughter of the Rev. J. D. Gray, M.A., and leaves a widow and three children.

Universities and Colleges.

UNIVERSITY OF LIVERPOOL.

At a congregation held on March 20th the following degrees were conferred:

M.D. (*in absentia*).—S. F. Linton.
M.B., Ch.B.—S. D. McAnland (with honours, Class D), W. T. Davies, F. E. Gorst, R. R. B. Roberts.

UNIVERSITY OF MANCHESTER.

The Diploma in Public Health has been granted to Dr. James Walker.

The following candidates have been approved at the examinations indicated:

THIRD M.B. AND CH.B. (*General Pathology and Morbid Anatomy*).—S. Almond, Martha F. Barritt, Phyllis M. Congdon, Margaret McF. Corbold, Dorothy M. I. Dyson, A. M. DeAguiuz, P. Fildes, J. Harris, E. Jones, Gertrude B. Leigh, H. A. Lomax, A. Maude, P. S. Robinson, Annie Rothwell, G. Talbot, S. J. Woodall.
D.P.H.—(*Part I*): A. W. Baker, G. H. T. N. Clarke, G. J. Crawford, A. Heath, M. E. A. Laif, J. L. Meynoll, E. N. Ramsbottom, H. F. Sheldon, E. H. Walker. (*Part II*): J. Walker.

UNIVERSITY OF LEEDS.

The Council of the University of Leeds on March 20th conferred upon Dr. J. B. Hellier, late Professor of Obstetrics, the status of Emeritus Professor.

UNIVERSITY OF DUBLIN.

The Senate of the University of Dublin has unanimously resolved to confer the honorary degree of Doctor of Medicine upon the following members of the university in recognition of their services in the war: Major-General Sir J. Murray Irwin, D.M.S., Third Army; Major-General H. M. Thompson, D.M.S., First Army; Major-General W. T. Swan, D.M.S., Palestine; Major-General J. J. Gerrard, D.M.S., Fifth Army; Major-General F. R. Newland, D.M.S., Italy; Major-General J. J. Russell, D.D.M.S., Irish Command, formerly D.D.M.S., Rouen.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At a special meeting of the President and Fellows of the Royal College of Physicians of Ireland on March 14th Major Harold Pringle, R.A.M.C., M.D., F.R.C.S.I., Chief Assistant to the Professor of Physiology, and Lecturer in Histology, University of Edinburgh, was elected King's Professor of Institutes of Medicine in the School of Physic in Ireland.

Medical News.

AT the graduation ceremony of the University of Aberdeen on March 25th Sir James Galloway, K.B.E., M.D., F.R.C.P., formerly consulting physician with the British armies in France, was admitted to the honorary degree of LL.D.

IN the march of the Guards through London on Saturday, March 22nd, the following representatives of the Guards Division, R.A.M.C., took part: Colonel H. B. Fawcens, C.M.G., D.S.O., Assistant Director of Medical Services, Major J. F. Sandison, D.A.D.M.S., and one officer and ten other ranks from each of the three field ambulances of the Division—namely, the 3rd, 4th, and 9th Field Ambulances.

A DISCUSSION on the elimination of insanitary areas will be opened by Dr. F. E. Wynne (M.O.H. Wigan) at a meeting of the Royal Sanitary Institute, at St. Helens, on the evening of Friday, April 4th.

MAJOR-GENERAL SIR ROBERT JONES, C.B., F.R.C.S., lecturer in orthopaedic surgery, Liverpool University, has consented to act as honorary consultant to the Ministry of Pensions for orthopaedic cases.

COLONEL W. H. WILLCOX, C.B., C.M.G., will deliver the Lettsomian Lectures before the Medical Society of London on "Jaundice" on April 28th, April 30th, and May 2nd, at 11, Chandos Street, Cavendish Square, W.1, at 9 p.m. on each day.

DR. H. H. DALE, F.R.S., and Colonel W. THORNE, M.P., have been appointed members of the Central Control Board (Liquor Traffic) in succession to Sir George Newman and Mr. Philip Snowden, respectively, who have resigned.

IN the Ecole des Infirmières, Brussels, of which Miss Edith Cavell was the principal, a portrait plaque has been placed alongside a medallion of Madame Depage, so well known to British surgeons as the wife of the secretary of the International Surgical Society.

THE Society of Medical Sciences of the Grand Duchy of Luxembourg at a recent meeting unanimously passed a resolution in favour of the reorganization of medical studies on French lines. The society at the same time expressed its sympathy with the French profession, particularly in Alsace and Lorraine.

THE forty-third anniversary of the opening of the Johns Hopkins Medical School was celebrated with appropriate rites on February 22nd. An address was delivered by Dr. George E. Vincent, president of the Rockefeller Foundation, New York.

THE Lord Chancellor has sanctioned the reappointment by Dr. Waldo, His Majesty's Coroner for the City and Borough of Southwark, of Major Danford Thomas to act as his deputy. Major Thomas rejoined the Territorials in 1914, and was gazetted to the 7th Battalion, London Regiment, and has served in France during the last three years of the war.

AT Belfast Assizes, before Mr. Justice Dodd, on March 24th, Nathaniel Osborne McConnell, M.B., B.S., R.U.I., a Belfast medical practitioner, was found guilty of the murder of Mary Jane Reid, whose death it was alleged was the result of an illegal operation. The jury added a strong recommendation to mercy. Sentence of death was passed by the judge.

The Brazilian Medical Commission, the head of which is Dr. Nabuco de Gouvea, rendered considerable service to the Allies in Europe. On arrival at the port of Dakar, French West Africa, all the fifty members were severely attacked by influenza, and many died.

At the request of the National Council for Combating Venereal Diseases, the London School of Medicine for Women has, in conjunction with the Royal Free Hospital, the Elizabeth Garrett Anderson Hospital, and the London Lock Hospital, arranged a course for the instruction of qualified medical women in the treatment of venereal diseases. The fee for the course, which will begin on Monday, May 19th, and end on May 31st, is £5 5s. Further particulars can be obtained on application to the Warden and Secretary, London School of Medicine for Women, 8, Hunter Street, W.C.1.

In the *London Gazette* of March 21st an Order was published signed by the Home Secretary stating that he is satisfied, as the result of an inquiry conducted by the Certificates of Naturalization (Revocation) Committee, that Ludwig Freyberger, to whom a certificate of naturalization was granted in 1897, has shown himself by act and speech to be disaffected and disloyal to His Majesty. The Home Secretary accordingly revokes the said certificate as from March 6th, 1919, and orders it to be given up and cancelled. (The name of Ludwig Freyberger appears in the current issue of the *Medical Register* with the qualifications M.R.C.S.Eng. 1893, L. 1893, M. 1894, R.C.P. London.)

At the annual meeting of the National Hospital for the Paralyzed and Epileptic, Queen Square, London, it was stated that throughout the war seventy beds had been provided for soldiers suffering from nerve injuries and affections, and that this work was being followed up by special provision, in three branch hospitals, for discharged men, in connexion with the Ministry of Pensions. The Massage School, managed in conjunction with University College Hospital, had a prosperous year in 1918, and awarded seventy-eight certificates. The new hostel in connexion with the school proved most successful. The expenditure of the hospital and its Finchley branch increased from £19,108 in 1914 to £30,230 in 1918.

An agreement signed in Paris on November 26th, 1918, has now been published by the British Foreign Office. Under it the Imperial War Graves Commission is recognized as the only British organization having the task of caring for British soldiers' graves in France. The land for the cemeteries has been purchased by the French Government and presented to the British. In a limited number of instances of isolated graves the bodies will be transferred to the cemeteries. The Commission is represented in France by a mixed commission, French and British. Provision for the care of graves in French communal cemeteries will be subject to French laws and regulations. The erection of monuments is subject to the control of the Imperial Commission.

A FRENCH Medical Congress of Syria was held recently at Beyrouth under the presidency of Professor de Brun, Dean of the Faculty. Among those who took part in the proceedings, in addition to the representatives of the local faculty, were Professors Lépine of Lyons and Alezais and Silhol of Marseilles. The Congress passed a resolution inviting France to organize an official system of gratuitous medical assistance in Syria and Palestine, helping the development of existing institutions while respecting rights already acquired. The Faculty of Beyrouth had at the beginning of the war eleven professors and twelve *chefs de clinique*, with 320 students. All the latter were orientals.

THE annual report of the Florence Nightingale Hospital for Gentlewomen at 19, Lisson Grove, N.W. (formerly the Hospital for Invalid Gentlewomen) shows that the number of patients treated during 1918 was 460; of these 329 were discharged cured. The number of operations was 403. A large proportion of the patients were connected with officers of the navy, army, and air force, and 27.5 per cent. were recommended by the Officers' Family Fund. Many of the other patients admitted were relatives of members of various other professions. The committee offers its thanks to the physicians and surgeons who generously devoted their time and skill to the service of the patients. Members of the staffs of general London hospitals, of the Samaritan Hospital for Women, Grosvenor, Soho, Chelsea, New, and South London Hospitals may recommend patients who are eligible for admission and take charge of them, provided that their medical attendance is gratuitous. It is optional for the surgeon to select his own anaesthetist.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Antiology*, Westrand, London; telephone, 2631, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

"M.O." asks whether the Italian "War Zone" ribbon has been granted to officers and other ranks who served on the Italian front.

SERVICE IN MALTA.

"VOLUNTEER 1914" writes: The 1914-1915 Star is being given to all engaged in any theatre of war on those dates who are not already in possession of the Mons Star. It is not to be given to those who served in Malta in 1914-15, or in some hospital ships in the Mediterranean during that time. Malta was an overseas base, for the reception of sick and wounded from Gallipoli, just as Alexandria and Cairo were, and had as much or as little of the atmosphere of war as these latter places. Many medical officers were dispatched to Malta in 1914-15 in spite of their requests to be allowed to serve elsewhere, but this fact that they were early volunteers and not conscripts is not to be recognized by the War Office in any way. Is this strictly fair?

"R.A.M.C. (T.C.)" writes to the same effect, adding that Malta was a hotbed of dysentery and enteric fever during the summer of 1915.

CALOMEL CREAM.

In response to inquiries, we give below a model specification which may be found convenient in ordering calomel cream:

Filled Tubes of Calomel Cream.

Levigated calomel ...	...	...	4 parts by weight
Liquid paraffin (B.P.) ...	...	...	1 part "
Hydrous wool fat (B.P.) ...	...	...	7 parts "

To be filled into a collapsible tube of pure tin, size $\frac{3}{16}$ in. by $\frac{1}{4}$ in., with elongated nozzle about $\frac{1}{2}$ in. long, $\frac{3}{16}$ in. diameter, parallel for two-thirds of its length from neck, but having a curved taper for the terminal one-third. The cap to slip slightly over the nozzle and to be secured by an indentation near its base, or by the edge of the cap being buried into a shallow groove at the base of the nozzle; the cap to be sufficiently firmly fixed to resist pressure of filling; but to be easily removed when the calomel cream is required for use. All parts of the nozzle to be quite smooth and free from sharp edges. Each tube to contain 35 to 40 grains of the cream, and to be packed in a small stiff cardboard box.

THE ETIOLOGY OF INFLUENZA.

A Correction.

IN the paper under the above heading, by Gibson, Bowman, and Connor, published in the *JOURNAL* of March 22nd, on page 334 (col. 1, line 32), for 1μ to 2μ read 0.1μ to 0.2μ .

THE following appointments of certifying factory surgeons are vacant: Thorne (Yorks, West Riding), New Southgate (Middlesex).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postae restante* letters addressed either in initials or numbers.

THE TREATMENT OF THE BLADDER IN GUNSHOT INJURIES OF THE SPINAL CORD.

BY

FRANK KIDD, F.R.C.S.,

SURGEON TO, AND SURGEON-IN-CHARGE OF THE GENITO-URINARY
DEPARTMENT, LONDON HOSPITAL.

The question of the best method of dealing with the paralysed bladder after gunshot wounds of the spinal cord is ripe for discussion in the light of war-time experiences, and of certain researches carried out by Henry Head and Riddoch,^{*} which were published in *Brain*, vol. xv, Parts 1 and 2, 1918. Before the war the profession seemed to be obsessed with the idea that very little could be done for these unfortunate sufferers. This was because the old teaching was largely based on inadequate observations and false assumptions. It was commonly taught:

1. That the bladder once paralysed was unlikely to recover.
2. That the "trophic" nerves to the bladder being damaged, cystitis and pyelitis were almost inevitable.
3. That "automatic" bladder was an extreme rarity (many authorities indeed stated that it could not exist).
4. That patients with injured spinal cords seldom recovered from their paraplegia.

These ideas need considerable modification as the result of war-time experience; I think it can be shown that these cases are not nearly so hopeless as was at one time thought, and that it is worth making every effort to secure for them a clean automatic bladder. Only by so doing can we do away with the chief cause of death, and enable these patients to live a reasonable life of comfort. In some favourable cases we can hope to see them recover from their paraplegia and take up their beds and walk.

The article of Head and Riddoch should be read and digested by all who are interested in the subject, but the following abstract will be convenient for the present purpose.

THE RESEARCHES OF HEAD AND RIDDOCH.

After gunshot injury of the spinal cord the bladder wall may suffer (1) overdistension and atony, and (2) cystitis and fibrosis, conditions which prevent the establishment of automatic bladder.

The paper applies to a third class where the bladder has not been allowed to become overdistended and has been kept comparatively clean. Even in this class there are exceptions when there is profound toxæmia from bedsores. In that case the cord does not sufficiently recover its tone to permit of "spreading reflexes," and consequent automatic flushing of the bladder.

If the bladder has been adequately treated what may happen after some weeks is—

1. To begin with there is occasional and fitful evacuation.
2. Later there is fitful evacuation with a certain amount of dirty residual urine. The catheter is still needed twice a day for lavage purposes.
3. Finally a regular automatic bladder is established, and the bladder empties itself partially or completely at regular intervals without a catheter.

This automatic action can be reinforced by peripheral extravascular stimuli such as swabbing the penis, tickling the soles of the feet, or the anus, or the abdominal wall, or by deep breathing.

The length of time before automatic action can become established is—

1. In partial lesions in fourteen days or more.
2. In total lesions in twenty-one to twenty-eight days.
3. In sacral lesions in three to four months.

Precautions needed to secure automatic bladder—

1. In washing the bladder no pressure must be used which would overstretch the weakened musculature.
2. Severe cystitis must be avoided which would cause degeneration of the musculature and fibrosis of the bladder wall.

When a bladder has learnt to empty itself automatically at a certain size it can be made to act at a smaller size by making use of "mass reflexes," such as tickling the skin of the abdomen or deep breathing. Even in a lesion of the cauda equina an automatic bladder once established could be made to respond more easily by the use of these reflexes. Combined with the detrusor response to these reflexes there is also an inhibitory response to the tonic action of the sphincter muscle when a catheter is not *in situ*.

^{*} A leading article on these researches was published in the *BRITISH MEDICAL JOURNAL* on April 20th, 1918, p. 457.

Conditions which Influence the Action of an Automatic Bladder.

A. In the central nervous system: (1) Response to tension on the part of the detrusor muscle; (2) relaxation of the sphincter muscle; (3) extravascular "mass" reflexes. These hold good even in the complete absence of the spinal cord. The site of the lesion in the cord makes no difference.

B. Shock, fever, and other general states. Cystitis, septicaemia, fever tend to diminish all reflexes.

The "Mass" Reflex.

In a higher animal with an intact central nervous system the reflex response to a stimulus applied to the skin tends to be limited, well defined, and purposeful, and to exhibit a "local signature"; that is to say, the muscular response evoked by the stimulus tends to direct its action to the purposeful removal of that stimulus. The primitive mass flexor reflexes of the spinal cord are thus overshadowed and controlled by the higher functions of the brain.

When the spinal cord has been completely divided the lower end may, after some time, recover its tonic influence and reflex excitability. The reflexes, however, now assume a form in which they have lost to a great extent their "local signature," and the responses are widespread, ill defined, and purposeless. A stimulus applied to the skin of the leg or abdomen may now produce not only a violent flexor response of the leg but automatic emptying of the bladder and rectum, and excessive sweating. Injection of fluid into the rectum and bladder may also act as a stimulus and produce excessive sweating and a flexor response of one or both legs. Deep breathing will also produce automatic emptying of the bladder.

This type of reflex has been named a "mass reflex" to distinguish it from the normal type of reflex in animals with an intact spinal cord, which is a "type reflex with local signature." Extensor tonic reflexes which control the upright posture of the body appear to be centred in the mid-brain and pons. Flexor reflexes or spasms which permit sudden withdrawal of a limb from a painful contact are the oldest in the phylogenetic scale, and betray their primitive origin—that is to say, the reflex mechanism by which they act lies chiefly in the spinal cord.

When the cord is cut off from the brain intense pain and discomfort can not only evoke a withdrawal of the lower extremity but can also lead to definite visceral reflexes. Urine is passed, the rectum is emptied, and the sufferer sweats. This resembles the reflex of fear.

When the spinal cord is cut across and shock has passed away, the lower end of the cord regains its primitive reflex activity uncontrolled by any influence above the lesion, such as the reflex extensor tone taking origin in the pons and mid-brain. The only response now is a "nociceptive" reflex—a vast outburst of motor energy, not confined to the parts stimulated, overflowing into visceral channels, a profound shrinking away of the animal from harmful stimulation. Not only is the spread of the reflex activity greater than under normal conditions, but the receptive field from which it can be evoked is unlimited below the lesion in favourable cases.

This is the "mass reflex," which cannot occur under normal conditions of higher neural control, though it may occur under violent affective stimuli, as with the emotion of fear.

The great practical outcome of Head's work, apart from its enormous theoretical interest, is that he has shown how to make use of these mass reflexes in gunshot wounds of the spinal cord, in order to abolish the permanent use of the catheter. As it is in most of these cases the catheter that kills, this knowledge will undoubtedly save a great number of lives.

POSTULATES.

If, then, we consider the facts brought to light by Head, we see that the two postulates for obtaining an automatic bladder are:

1. The paralysed bladder must never be allowed to become overdistended and stretched—for if this is permitted the bladder muscle cannot recover its tone and automatic action is impossible.
2. The paralysed bladder must be guarded from severe infection—for if severe infection is permitted the muscle in the bladder wall is destroyed, and is replaced by fibrous tissue which is incapable of automatic contraction.

These two postulates must be used in determining the real and ultimate value of any method of dealing with the paralysed bladder in the first six or eight weeks following an injury of the spinal cord.

WAR-TIME PRACTICE.

During the war it has been the common practice to deal with the paralysed bladder in cases of gunshot wounds of the spinal cord by one of three methods: Either a catheter has been passed intermittently, or suprapubic cystostomy has been performed forthwith, or no catheter has been passed at all and the bladder has been emptied at frequent

intervals by massage and pressure applied above the pubes.

There is also a fourth method, which I have consistently used in these cases, which saves the surgeon's time, renders the nursing much easier, and leaves the patient in the most favourable condition for recovery—and that is the method of the "tied-in catheter."

This method, to my mind, is on the whole the most fool-proof, and is therefore the best fitted to render the patient a fit subject for the establishment of "automatic bladder."

I will begin by discussing the advantages and disadvantages of the first three methods, which have been so extensively employed during the war; the first two should, I think, be discarded, leaving the field for a final decision between the third and fourth methods.

1. *The Method of the Intermittent Catheter.*

A soldier is wounded in the spinal cord, and suffers as a consequence immediate paralysis of the bladder. A catheter is passed on an average twice in twenty-four hours on his way down the line. Under the conditions of warfare it was almost inevitable, with this method, that before a week was out, and by the time he arrived at a base hospital, the bladder had become severely infected and the urethra might be in an inflammatory and bleeding state, which rendered each successive catheter more difficult of insertion.

By this method there is grave danger to life from cystitis and pyelitis, and the bladder wall becomes stretched from overdistension, its wall being paralysed, and the catheter not being passed often enough or regularly enough to secure that the bladder wall is not overstretched.

A few weeks after arrival at a base hospital pyelitis sets in and is often fatal, or if fatal pyelitis is avoided the urine becomes ammoniacal and a phosphatic stone grows in the bladder. Even if these dangers be avoided the result of the overstretching and the sepsis is to render the bladder wall a fibrous envelope, which loses for ever its power to contract automatically, so that permanent catheterization becomes a necessity.

Even were the conditions for the frequent passing of a catheter in war time more favourable than they are, it is my impression that many surgeons are not familiar with the importance of adequate urethral irrigation before the passage of a catheter.² Had this method been more widely known and practised it is my impression that severe cystitis would have been to a much greater extent avoided and prevented. This method, then, offends both the postulates assumed at the head of this section, and should be discarded.

2. *Immediate Suprapubic Cystotomy.*

This, a second method, was suggested by Thomson Walker.³ He advised this method without apparently having practised it in any of his cases before publishing—at least, so I gather if I read his paper rightly. This was, I think, unfortunate, as suprapubic cystotomy was widely used in certain of the clearing stations by surgeons who were not already practised in the most recent methods of suprapubic cystotomy with a mushroom drain, and who were not sufficient masters of modern methods of irrigation of the bladder and in the use of urinary antisepsis by the mouth to secure a clean condition of the urine after operation. The great advantage of this method, if performed at once, is that it does prevent overstretching of the bladder muscles—a very important point.

But it seems to me that it renders the dressing and nursing of these cases even more difficult and time-consuming than they are with the first method, and it certainly tends to make more difficult the avoidance of bedsores and the keeping of the skin of the abdominal wall healthy. This is true if suprapubic shields or ordinary dressings are used, but not to the same extent if a mushroom tube is used as a drain, so as to prevent the leakage of urine on to the skin.

Suprapubic cystotomy, then, saves the time of the surgeon but not that of the nurse, and is not really of great benefit to the patient, for it has been my experience that severe cystitis is the rule rather than the exception in these cases, with consequent pyelitis or formation of stone in the bladder. But a greater objection is that if "automatic bladder" becomes established it is still very difficult to get the suprapubic fistula to heal soundly and permanently, as the suprapubic opening remains the easiest way for the urine to find its outlet in automatic

action, rather than the urethra guarded by the spastic hypertonic sphincter muscle.

This method, then, conforms with the first postulate but offends the second postulate, and I think it should be discarded in favour of one of the last two methods.

3. *The Method of Mechanical Expression.*

The third method was, I believe, first widely adopted in France in 1917, and has been largely used ever since. It consists in expressing the contents of the distended bladder through the weakened sphincter by means of pressure and massage applied above the pubes to the bladder through the abdominal wall. Some men are accustomed to aid this expression by means of a gloved finger in the rectum. The great advantage claimed for this method is that it is said to conform with the second postulate, and that it does diminish the danger of sepsis. It is stated that if no catheter is passed the urine will always remain sterile. All the same I am not yet convinced that this is an accurate statement, and I believe that if the actual state of a series of bladders so treated were to be ascertained, it would be found that many had become infected through the blood stream and kidneys.

On the other hand, if this method is not to offend the first postulate it needs to be carried out at least four times a day, and this means a great application of time and patience on the part of the surgeons and nurses, and it also means that the massage must never be omitted or forgotten for any length of time. Otherwise the bladder muscle will become overstretched by distension, and the muscle will be unable to recover its tone.

If it can be proved by actual results that automatic bladder does become established in a proper proportion of cases so treated, then I think this will turn out to be the method of choice. At the same time, any one adopting this method will have to be prepared to be absolutely regular in his attendance, and, if the case is passed down the line, to see that the massage is not neglected on the way but is continued by all the other men into whose hands the case will fall.

4. *The Method of the "Tied-in" Catheter.*

It now remains to discuss a fourth method, which I have employed consistently throughout the war in dealing with these cases. I was first led to employ it as it seemed to me to save the surgeon's time, to render the nursing far less arduous, and to add immeasurably to the comfort of the patient. The advantages are that there need be no bleeding urethra, no stretching of the bladder, that sepsis is of the mildest description and easily controlled, that the urine can be kept acid so that stones do not form, and pyelitis is less likely to supervene. The skin of the back cannot be soiled with urine, so that there is one less predisposing cause of bedsores, and the surgeon has to pass a catheter at most twice a week.

If the soldier can be steered through the first six to eight weeks of his disability, and if the bladder has not been stretched and has not become too septic, and if in other respects the patient's general condition is good and free from sepsis (bedsores, lung troubles, or other wounds), then it will be found that automatic flushing of the bladder becomes well established, and the need for further catheterization and lavage can be largely if not wholly dispensed with, to the utmost satisfaction of doctor, nurse, and patient. I can describe this method best if I append some instructions I drew up for the information of other surgeons in a military hospital.

GUNSHOT WOUNDS OF THE SPINE.

A Good Method of Dealing with the Paralyzed Bladder by the "Tied-in" Catheter.

Assemble the following articles:

1. An irrigating tin with rubber tubing and glass nozzle attached. Boil these.
2. A No. 9 or No. 10 (English scale) rubber catheter. Boil this.
3. A bottle containing oxycyanide of mercury—1 part in 30 of water.
4. An antiseptic lubricant—namely, tragacanth 2 parts, glycerin 20 parts, oxycyanide of mercury $\frac{1}{2}$ part, distilled water 100 parts. To be put up in a tin squeezer tube.
5. A small safety-pin, two pieces of silk or tape, a narrow piece of strapping.

Fill the irrigator with two pints of water at 100° F., and add two drachms of the oxycyanide of mercury solution. Irrigate the urethra with this solution, so as to cleanse it before passing the catheter.² Lubricate and pass the catheter, and make sure the eye

is lying snugly in the bladder. Fix a safety-pin in the catheter, tie a piece of tape to each end of the pin, and carry these along the sides of the penis, and fix them there with strapping. This strapping should be just tight enough to control the tapes, and yet not so tight as to cause oedema of the prepuce. The tied-in catheter should be left draining into a bottle all the time so that the bladder never becomes distended—a most important point. The bladder can be irrigated with the oxyganic of mercury solution (one drachm in one pint) twice a day. Be careful not to hold the irrigator higher than six inches above the level of the penis, so as not to force the bladder muscles; run in two ounces only of the lotion at a time, and then allow it to flow out again into a dish. Repeat this manoeuvre five or six times. If the urine is very purulent, and especially if it is alkaline, irrigate four times a day. If the urine is acid, give this mixture by the mouth six-hourly:

Hexamine	...	...	...	5 grains
Acid sodium phosphate	...	...	...	30 grains
Water	...	...	to	1 ounce

If the urine is alkaline give six-hourly:

Boric acid	...	...	...	15 grains
Ammonium benzoate	...	...	...	15 grains
Water	...	...	to	1 ounce.

Remove the catheter every fourth day, irrigate the urethra and tie in a fresh one. If this is not done the catheter may get blocked and the bladder stretched, and it may even give rise to perineal abscess.

By tying in the catheter several objects are gained:

1. Time is not wasted by passing a catheter frequently.
2. The urethra is not damaged by the constant passing of a catheter.
3. The bladder muscle is not overstretched, so that automatic bladder can be established in a few weeks' time.
4. It is easy to carry out lavage, the urine remains clean, and pyelitis and stone are prevented.

In any lesion of the spinal cord above the cauda equina, if the bladder muscle is not allowed to become overstretched, an "automatic bladder" becomes established in from three to six weeks' time, or occasionally in a little longer time. If "automatic bladder" has become established at the end of three or four weeks the catheter should be removed altogether, and simply introduced once or twice a day for lavage purposes. The hexamine mixture should be continued, and the patient's urination and urine watched.

The patient can learn to induce automatic flushing by tickling the skin of his abdomen, or by deep breathing ("spreading reflex"). When automatic bladder has become completely established, the catheter and lavage are entirely given up, but the mixture is continued indefinitely.

If surgeons would adopt this method they would be surprised to find how simple it is compared with such methods as suprapubic cystotomy or intermittent catheterization.

SUMMARY AND CONCLUSIONS.

I have tried to show that the subject of the treatment of the paralysed bladder after gunshot injuries of the spinal cord is ripe for discussion and needs further consideration.

My own feeling is that the methods of intermittent catheterization and of suprapubic cystotomy are inadvisable, and should be discarded. I think that in the hands of a careful worker the third method of mechanical expression of the bladder is likely to be the best method if it can be proved by end-results that it does not diminish the chances of automatic action. This method is likely to ensure a more or less clean bladder, but will it ensure an automatic bladder?

I feel that until this question is settled the method of the "tied-in" catheter is on the whole the best and most "fool-proof" method, and is likely to lead to the highest percentage of recoveries. By recovery I mean the establishment of a clean automatic bladder. If we can obtain a clean automatic bladder we give the patient a chance of living until he may reach the period of possible recovery from his paraplegia.

This paper has been written in the hope that it will induce other workers to bring forward the results of their cases, so that a comparison of the different methods may be attempted in the future.

REFERENCES.

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REMARKS ON CHEST WOUNDS.

FROM A PHYSICIAN'S NOTEBOOK.

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THE following notes on gunshot wounds of the chest, which I have been asked to publish, were jotted down from time to time as the observations occurred. They represent experiences gained on the Western front at all stages, from the regimental aid post to the base hospital in England, mainly, however, at the casualty clearing station. If sometimes I may be adventuring opinions on matters surgical, I plead in extenuation that after working with Duval, Gask, J. Anderson, J. E. H. Roberts, and most particularly and intimately with Lockwood, my surgical colleague at No. 36 Casualty Clearing Station, I have seen thoracic surgery in the making.

The retreat of the Fifth Army (to which I was then consulting physician) in March, 1918, and the rapid advance of the Fourth Army from August 8th to November 11th, impressed upon me the results when military exigencies prevented the application of the surgical principles we had learnt previously. Duval's famous dictum, "the general rules of surgery must be applied to wounds of the lungs,"¹ came home at those times with additional force.

In the early stages of chest wounds the physician's first work is to help the surgeon to select cases which require, and are fit for, immediate operation or resuscitation. He has to decide at once with the surgeon and radiographer (1) whether the patient needs immediate operation. If so, why? (2) Can the patient stand immediate operation? If not, why not?

Indications for Immediate Operation.

These are by now pretty well agreed upon. Briefly, they are as follows:

1. Haemorrhage.
2. Injuries of the diaphragm.
3. Open pneumothorax (traumatopneoc).
4. "Stove-in" chest.
5. Retained missiles, bone, and clothing.
6. Early acute infection.

If one or more of these reasons for operation exist a prolonged physical examination of the chest is unnecessary and inadvisable, unless there is doubt whether the patient will stand an operation.

Cause of Unfitness for Operation.

The patient may be unfit for operation owing to

- Intrathoracic injuries.
- Severity of the external or complicating wounds.
- Loss of blood.
- Collapse or shock due to cold and transport.

It is the physician's province to decide as to the intrathoracic injuries, and he must form a definite opinion on the following points:

Is there a sufficient degree of

- Pneumothorax,
- Haemothorax,
- Collapse of lung,
- Laceration or haematoma of lung,
- Injury of heart, pericardium, or great vessels,
- Injury of diaphragm,
- Injury of vertebrae or spinal cord,

to account for the severity of the symptoms? Radioscopy and radiography are almost indispensable in order to reach a correct conclusion on these points, but it will sometimes happen that a patient's condition will not permit of immediate x-ray examination. When this is so, the question is rendered easier rather than harder. The patient is unfit for any immediate operation save one of the following:

- Immediate and rapid operation for the arrest of visible haemorrhage from the chest wall or thorax.
- Arrest of haemorrhage from coexisting wounds.
- Aspiration for relief of pneumothorax (usually valve pneumothorax).
- Aspiration for relief of haemothorax.
- Temporary closure of open pneumothorax.

Apart from one of these procedures, there remains nothing else to be done than to resort to measures for resuscitation of the patient.

As a rule, it will be found injudicious to aspirate immediately for pneumothorax or haemothorax. It is very rarely possible to decide at first sight that one or both of these conditions exists in sufficient degree to account for the severity of the symptoms. Occasionally it may be obvious from the urgency of the dyspnoea that relief by immediate aspiration is indicated.

More usually this becomes evident after resuscitation has been tried without success, or with only partial success. The patient recovers partially from his shock or collapse, and as he recovers, the dyspnoea, which is often absent while the respirations are very feeble and shallow, begins to show itself. Urgent dyspnoea with cyanosis seems more marked in cases of extensive collapse or deflation of the lung without much haemothorax or pneumothorax than in cases with these latter conditions unaccompanied by collapse of the (relatively) uninjured lung.

In order to decide whether a patient requires immediate operation the extent of the thoracic injury must be estimated. The mere presence of a thoracic wound is not sufficient evidence that the symptoms are due to thoracic injury. Broadly speaking, although a penetrating wound of the chest which produces collapse of one lung with or without haemothorax or pneumothorax will cause immediately grave shock to the patient, nevertheless recovery is fairly rapid provided the other lung remains undamaged. Experience at advanced dressing stations shows that although there is immediate and profound distress, such a patient will rally and become fairly comfortable within an hour or two if kept at rest. He will then bear the journey to the casualty clearing station, and should arrive there in good condition if the transport has not involved much jolting.

A patient with a simple through-and-through wound of the lung, or with a small missile retained, should not on arrival at the casualty clearing station be profoundly collapsed or in great respiratory distress. If he is, the following possible causes should be considered:

Haemorrhage.

This may have been very large in amount, and there may still be active bleeding. As a rule with closed thorax the amount of intrathoracic haemorrhage will not be enough to produce of itself severe shock. When there is an "open thorax" the estimated size of the haemothorax is no guide to the quantity of blood lost, as the greater part of the bleeding may have been external. In such a case physical examination is of little assistance beyond determining that there is an "open thorax" and that the patient is suffering from loss of blood. If the missile has been retained, it is of the greatest importance to localize it accurately by *x* rays. An operation is necessary to close the chest; the lung will have to be examined to discover, and if possible repair, the laceration, and to arrest the bleeding if it is continuing. It is essential to remove the missile, if accessible, to avoid infection.

Severe Parietal and External Injuries.

Comminuted fractures of ribs, scapula, or sternum produce the gravest symptoms even in the absence of severe intrathoracic injuries. It is of the utmost importance in such cases to determine the extent of the intrathoracic or pulmonary injury. Physical examination by auscultation and percussion is difficult to perform and more difficult to interpret. It will give little information beyond establishing the presence or absence of haemothorax or pneumothorax. But it is essential for the surgeon to know beforehand whether his operation should be limited to the parietes or should extend to the interior of the thorax. As a general rule, if the entrance wound is small, clean, and has not comminuted any bone, whilst the extensive bony injury is confined to the exit wound, there will be no in-driven fragments, and the operation may be limited to the parietes. But if the entrance wound is large, if there are in-driven fragments of bone, or pieces of clothing, and especially if there is a large missile retained, the operation must extend to the interior of the chest.

Associated Injuries.

Careful attention has always to be paid to injuries other than purely thoracic which may have been caused by the missile or missiles which have struck the chest,

particularly injuries of the diaphragm and abdominal viscera.

A prompt decision must be arrived at as to whether there is sufficient thoracic injury to produce the symptoms, or whether the intrathoracic injury may be ignored and a further explanation looked for below the diaphragm.

To the surgeon a definite and reliable opinion expressed by the physician to the effect that the intrathoracic injury is negligible is of great assistance.

In order to form a definite opinion in such a case, physical examination of the chest becomes more important than in the class of case previously considered. If the heart is not displaced; if there is no great degree of surgical emphysema; if there is no large amount of air or fluid in the chest; but, above all, if there is a fair degree of air entry into the lungs, it may be assumed that, although the missile has entered the chest, the grave lesion exists elsewhere.

In a through-and-through wound the track of the missile may be enough to furnish an explanation; failing this, *x* rays will be required, unless the presence of an abdominal injury is made clear by other signs and symptoms. Abdominal rigidity and immobility are not, by themselves, clear indications of abdominal injury; these signs are often present in pure chest injuries.

Increased dullness in the spleen area, haematuria, the presence of dullness in the flanks, localized tenderness and pain in the abdomen, the peculiar "catchy" breathing suggestive of diaphragmatic injury, and hiccough are signs which should be noted and interpreted as indicating injuries below the diaphragm.

Spinal Injuries.

These demand recognition, and not merely those which involve the spinal cord itself. Injuries to the body or processes of vertebrae may cause the gravest symptoms and present very puzzling features. Excessive pain, radiating very irregularly, is constantly met with in injuries of the vertebral bodies, and resembles the intense and erratic pain due to erosion of the vertebrae by aneurysm. Profound collapse which resists all efforts at resuscitation is often met with in spinal injuries, even when the cord is undamaged.

Multiple Wounds.

Apart from the associated injuries which the missile entering the chest may have produced, there may be other wounds which make it difficult to decide whether the patient's serious condition is attributable mainly to the chest wound or not. Here, again, if there is fair air entry into the lungs the intrathoracic injury may be put on one side. A patient with one lung expanding well should not be greatly distressed even though the other lung is completely out of action, provided some hours have elapsed to allow him to adjust himself to his new conditions, and provided he has been kept at rest.

Intrathoracic Injuries.

We may now pass to a consideration of the intrathoracic injuries pure and simple.

The distress caused by an open thorax is usually very great, and until the opening has been closed it is difficult to estimate the extent to which the symptoms are due to injury of the thoracic contents.

Auscultation and percussion will add little or nothing to the information obtained by seeing the hole in the chest wall.

Active haemorrhage may be visible externally and be recognizable by the colour of the blood, which continues bright and arterial. The leakage of a haemothorax which is not increasing from fresh haemorrhage is usually darker and resembles venous bleeding; moreover, the blood does not clot outside the body.

With closed thorax the examination of the chest resolves itself into a combination of the ordinary methods (inspection, palpation, percussion, and auscultation) with radiology and radiography.

Inspection.

The presence of surgical emphysema almost always means the presence of either partial or complete pneumo-

It is surprising to find how little attention is paid to the amount of expansion or air entry into the lungs in examining gunshot wounds of the chest. Yet this is of vital importance to the patient.

thorax. If the heart's apex beat is visible, an alteration in its position may depend on the heart being pushed over by air or fluid, or on its being pulled over by collapsed lung.

Visible distension of one side of the chest may depend on air or fluid. An over-distended chest will generally be immobile. The degree of movement in a chest is not, however, always proportionate to the intrathoracic injury. On the one hand there may be, for instance, a considerable amplitude of respiratory movement with a large haemothorax if the lung remains partly expanded; and on the other hand, a chest which has been struck without material intrathoracic damage may remain immobile for two or three days, even though the lung is not collapsed, and even in the absence of haemothorax or pneumothorax. Cases of this kind are seen in which the injured side remains resonant, slightly retracted, without inspiratory or expiratory sounds, but with normal vocal fremitus and normal x-ray appearances.

In cases of collapsed lung (without haemothorax or pneumothorax) the side may appear greatly retracted, with indrawing of the interspaces on inspiration.

Palpation.

Surgical emphysema is the first sign to be felt for. If extensive, it obliterates or distorts every other physical sign except the position of the heart. Displacement of the heart may be determined by palpation.

Exocardial friction fremitus may be felt. It does not always indicate haemo-pneumopericardium or pericarditis. Substernal surgical emphysema may cause a similar friction fremitus.

Fractured ribs, or a missile lying under the skin, may be discovered by palpation. An ecchymosis on the chest wall should be carefully palpated, as it is often due to a missile which has penetrated as far as the skin without making its exit.

Tactile vocal fremitus is not always diminished and is occasionally increased over haemothorax. It is not even invariably lost over pneumothorax.

Percussion.

Percussion is apt to be misleading when the chest has been injured. The resonance of the normal chest depends to some extent on the tension of the chest wall, in the same way as the resonance of a drum depends on the tension of the drum-head. If the chest wall becomes abnormally laxer (as when ribs are extensively smashed) the resonance and the pitch of the percussion note are thereby altered. Surgical emphysema will yield a resonant note even over a large haemothorax. Resonance may be impaired over a collapsed lung even if there is no haemothorax. Alteration in the position of the mediastinum may be detected by percussing out the anterior limits of resonance of the uninjured lung.

The position or size of the cardiac dullness may be found changed.

The liver dullness or stomach resonance is sometimes found to rise unduly high in chest wounds owing to relaxation or paralysis of an apparently uninjured diaphragm. This may mean that the diaphragm is paralysed, or that the lung above it is collapsed.

Particular attention should be paid to percussion of the base of the opposite (and apparently uninjured) lung. Abnormal dullness of this base may be due to an abnormally high diaphragm, to consolidation, collapse, or compression of the lung or to a haemothorax. A missile may have passed through both lungs. The diaphragm may be pushed up by subphrenic injuries or by tympanites and cause abnormal dullness at the pulmonary base or bases.

Auscultation.

The positive sign of good air entry with normal vesicular breathing is the most valuable of auscultatory sounds. It is evidence that the lung in that area is expanding. Absent and altered breath sounds are less reliable. Breath sounds may be diminished or totally absent in haemothorax and pneumothorax; they may be equally absent in any case where the lung is not expanding—for example, when a bronchus is blocked, or when the respiratory movements are too feeble (as in shock) to produce any audible sound.

Altered breath sounds do not follow the same general rules in injuries as in disease of the lungs. Bronchial breathing is not uncommon over haemothorax, whilst it may be absent in haematoma of the lung if the haematoma is superficial and wide in extent. Bronchial or amphoric breathing is frequently heard over pneumothorax even when closed. The coin sound is sometimes absent even in large pneumothorax.

Mucous and Crepitant Rales.

It is very difficult to assign particular values to mucous rales and crepitations, in the same way as has hitherto been customary in disease. When it is remembered that, in the majority of cases where the lung has been struck, three changes almost invariably occur which are capable of producing mucous or crepitant rales, the difficulties of exactly interpreting these physical signs will be appreciated.

The three constant changes are: collapse of air vesicles, haemorrhage into the alveoli and bronchioles, haematoma of the lung. Whatever other accidents may have occurred these three may be confidently assumed to be present when a missile has struck the chest with sufficient force to penetrate its wall.

Mucous rales will give practically no information of diagnostic value.

Crepitations are occasionally useful, particularly in two conditions. In collapse of the lung (either homolateral or contralateral) widespread, coarse, dry crackling is a valuable physical sign. In compression of the opposite lung by a large haemothorax or pneumothorax on the injured side fine crepitations are often heard over the base of the compressed lung.

On the second or third day (and at any later time) the appearance of crepitations, where none were previously heard, may indicate the occurrence of pneumonia or bronchopneumonia, or that extremely rare condition gas gangrene of the pulmonary tissue.

Friction Sounds.

Pleural friction must be carefully watched for. It is often the first sign of intrathoracic infection. But a small haemothorax almost always at an early stage produces friction which is of no great moment. Pericardial friction is not uncommon, but pericarditis is not necessarily a fatal or even a serious complication of gunshot wounds of the chest.

A heart beating in surgical emphysema of the substernal tissues may give rise to a friction sound indistinguishable from pericarditis, or to a remarkable churning sound mistakable for haemo-pneumopericardium. An adjacent pneumothorax will give to the normal heart sounds an exaggerated resonance or reverberation, and if friction is present either from pericarditis, or from surgical emphysema, or from haemo-pneumopericardium, the noises which may result are astonishing, although with experience they become unmistakable.

As a rule the exocardial friction sounds which appear immediately after wounding are due to surgical emphysema, and are very loud and coarse. True pericarditic friction usually comes on later and insidiously. It begins faintly over a limited area and spreads gradually with increasing loudness. Hernia of the stomach or intestines may cause gurgling sounds to be heard in the chest, but this sound is not diagnostic of a lacerated diaphragm. Intestinal gurgling is sometimes transmitted very distinctly through a pneumothorax with the diaphragm intact, and it is also heard when the diaphragm is raised abnormally high. It is very difficult to interpret correctly changes in the heart sounds and rhythm. Bruits which are mistaken for endocardial murmurs are produced by displacement of the mediastinum with dislocation or torsion of the heart and great vessels. Irregularities in rhythm may be similarly caused. Speaking generally, a heart which has been hit, with or without penetration, takes on a rapid and irregular action, especially if struck on the posterior aspect or near the auriculo-ventricular junction. I have, however, seen a case with a shrapnel ball lodged in the ventricular muscle near the apex, and another with a fistulous opening through the chest wall into the right auricle, yet in neither case was there any interference with the heart's action. But as a rule true delirium cordis indicates that the heart has been struck by the missile.

Succession Splash.

It may be possible to elicit this sign in haemo-pneumothorax. It is never justifiable to attempt to do so in the early stages, and with x rays at hand it is never necessary.

Metallic tinkling: I do not remember that I have ever met with this sign in gunshot wounds of the chest.

Voice Sounds.

Modifications of vocal resonance are apt to be misleading. The most constant and reliable sign is aegophony, which I have not met with except when there was fluid in the chest. It is usually best heard at or near the upper level of the fluid, and may be localized to a very restricted area there.

Diminished vocal resonance does not always accompany even a large haemothorax; it may be considerably increased. Occasionally the vocal resonance is increased without any obvious intrathoracic change, even on x -ray examination. I do not know what is the explanation of this sign occurring in a chest which has been hit or penetrated. I have met with it frequently in the first few hours, and have not been able to attach any importance or diagnostic significance to it. Possibly it is due to a partial deflation of the lung insufficient to produce the physical signs of collapse.

In pneumothorax the voice sounds and the cough may acquire a characteristic metallic ring. This metallic ring is also sometimes heard with the inspiratory soufflé in a closed pneumothorax, and indicates that a large opening communicates with the pneumothorax from the bronchus.

Auscultation is made very difficult when surgical emphysema is present. If the surgical emphysema is considerable and obvious, it will be recognized at once that auscultation can be of little assistance. Often, however, the emphysema is not evident, and the auscultatory sounds become very puzzling, particularly when the surgical emphysema is mediastinal, substernal, or subpleural, and does not extend to the subcutaneous tissues.

Under all circumstances auscultation should reveal the approximate position of the heart, and this is a point which requires determining in every case of gunshot wound of the chest.

X rays.

It is impossible to treat chest wounds adequately without x rays. From the time a case comes within reach of surgical assistance to the time he is finally discharged as cured, and even long after if untoward sequelae are suspected, x rays are constantly required. At the outset it is only with x rays that the probable track of a missile and its position, if retained, can be ascertained. The position of the heart and diaphragm, their movements, damage to the lung, collapse of the lung, haemothorax, and pneumothorax can only be accurately determined by x rays interpreted in conjunction with physical signs.

Radiography alone is insufficient; the cases must also be radioscopically examined and the parts be seen in movement with fluoroscopic screen, in a sitting-up position if possible.

It must be remembered that pieces of clothing can never, and fragments of bone only rarely, be seen with x rays.

General Considerations from the Physician's Standpoint.

The first consideration is to save life; the second is to restore function as completely and as quickly as possible.

All wounds of the parietes and thoracic contents should receive the surgical attention they require at the earliest possible moment.

Haemorrhage must be arrested and every possible step taken to early avert infection.

No fluid, whether blood, serum, or pus, must be allowed to collect in the chest. Early and frequent aspiration must be resorted to whether thoracotomy has been performed or not.

Any fluid in the chest is dangerous from two points of view: (a) It is a nidus for sepsis. (b) It interferes with the expansion, not only of the injured, but also of the uninjured lung, setting up conditions favourable to the development and spread of bronchitis, bronchopneumonia, and lobar pneumonia.

Foreign bodies, metal, clothing, and bone, should be removed whenever possible. They are dangerous, not only

from the point of view of immediate sepsis, but from that of subsequent interstitial fibrosis.

Resection and open drainage as formerly practised for empyema is an unsatisfactory operation, and is shown by experience in this war to be rarely necessary if the early treatment, according to modern methods, is not neglected.

REFERENCE.

¹ Duval: *War Wounds of the Lung*, Preface.

RESUSCITATION WORK IN A CASUALTY CLEARING STATION.

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This report deals with work amongst wounded men (stretcher cases only) received in a tented casualty clearing station during three weeks of activity on a sector of the Western front (September 27th to October 15th, 1918). Until October 4th there were eight surgical teams working, but subsequently only six.

TABLE I.

Period.	Admissions (wounded).	Operations.	Percentage.
Attack on the Canal du Nord: Eight days—Sept. 27 to Oct. 4, 1918...	1,713	479	28
Quiet period: Four days—Oct. 5 to Oct. 8, 1918 ...	275	71	26
Fighting on the Escaut Canal north of Cambrai: Seven days—Oct. 9 to Oct. 15, 1918...	835	353	42

TABLE II.—Classification of Operations.

	First Period.	Second Period.	Third Period.
Abdominal	31	1	9
Chest-abdomen	12	1	1
Chest	15	4	12
Fractured femur	23	2	15
Fractured femur with multiple wounds	6	4	3
Large flesh wounds	40	—	26
Knee-joints	38	3	13
Multiple wounds: Amputations, fractured tibia, humerus, forearm, etc.	314	56	274

It will be noticed that during the third period proportionately far fewer abdominal cases could be operated upon. This was largely due to the increase in distance of the unit from the front line during a time of rapid advance. Most of the cases arrived more than twenty hours after being wounded, and a large number died soon after admission from advanced peritonitis. The earlier abdominal cases, too, on the whole responded badly to resuscitation methods, and intravenous methods of treatment in such cases were not often successful, even if they were not obviously contraindicated.

A large number of cases of chest wounds, mostly with other complicating wounds, were admitted, and there were opportunities for keeping cases until better fitted for evacuation.

Total chest wounds	194
Aspirations	93
Operations on chests or chest wall	31

Of 21 deaths recorded in the chest wards one-half could clearly be ascribed mainly to causes other than the chest wound. In 33 cases the haemothorax fluid was proved bacteriologically to be infected, streptococcus being found in 79 per cent., anaërobo bacilli in 57 per cent., and staphylococcus in 50 per cent.

During this time a total of 450 cases were examined by X-rays by Captain Campbell Haddow, of No. 6 Mobile X-ray Unit. Almost all of these were stretcher cases—89 were radiographed for multiple wounds, the abdomen was examined in 85, the chest in 92, buttocks in 46, and knees in 70 cases. Of the other cases, fractured femurs were numerous and a fair number of foreign bodies were localized in the limbs.

Before giving an account of the work in the resuscitation ward we would mention the value of gas and oxygen anaesthesia, given by means of a Boyle's apparatus which was at our disposal. For all types of badly shocked cases, and notably also in severe gas infections, it was a very great aid to successful operation and the maintenance of resuscitation.

Resuscitation Ward.

This was a long marquee connected by a covered way with the operating theatre. Well warmed by stoves, it had twenty-four beds and a small operating bay with two tables, well lit, for intravenous treatment. Cases admitted were not lifted from their stretchers unless they were damp or in discomfort; the moving of the patients was thus facilitated.

In this ward there were two sisters, one trained orderly, and two general duty men. During the first active period two M.O.'s—one for day and one for night—were available; subsequently one only could undertake the work. The successful management of such a ward is very greatly dependent on the skill and untiring patience and energy of the sisters and nursing orderlies, and in this instance nothing was lacking of these essentials.

We aimed at quick resuscitation, so as to avoid the onset of gas gangrene; no sharp clinical differentiation is possible between the condition of shock and the toxicæmic condition common at the onset of gas gangrene, both being frequently accompanied by vomiting and lowered blood pressure.

The general lines of resuscitation treatment were followed; these are sufficiently well known to make a detailed account unnecessary here. Warmth applied by hot air, from a paraffin stove, ventilating over the patient into his blankets, and from hot-water bottles, was the first and most important element. To quench thirst by water, sweetened lemonade, and other mild drinks was an insistent need and a useful aid; it was necessary to prevent excess of drinking in a good many cases of shock and abdominal wounds, in which vomiting was persistent. Morphine judiciously given, heroin in chest cases, and camphor as a cardiac stimulant, were all utilized when desirable. So far as possible morphine was not given in doses larger than $\frac{1}{4}$ grain nor more than once in twelve hours—exceptions to this general rule seldom had to be made.

Intravenous injections were largely used in the worst cases. If there were obvious bleeding not controllable by mechanical means, it was thought better to avoid methods which increase blood pressure, otherwise gum infusion was given, unless the case seemed very urgent, when blood transfusion was preferred. Always as soon as possible operation was done. As a general rule, blood transfusion was reserved for the post-operative stage when all bleeding points had been secured.

An analysis of results sheds some further light on the comparative values of blood transfusion and gum infusion. Although this work was done under circumstances of stress and the treatment was controlled by simple clinical methods of observation only, we do not think a discussion of results is thereby invalidated.

TABLE III.—Records of Intravenous Treatment and Totals for the General Work of the Ward.

Total admissions	234
Deaths within 48 hours = failures	68 = 25 per cent.
Deaths in C.C.S. later	24 = 10
Total intravenous treatments	74
Deaths within 48 hours = failures	23 = 31 per cent.
Deaths in C.C.S. later	4 = 5

For practical purposes cases that died within forty-eight hours of admission have been regarded as failures from the resuscitation standpoint. This classification includes some deaths from gas gangrene and from abdominal wounds of such severity that no resuscitation methods could be expected to avert death. The later deaths have not been regarded as resuscitation failures.

TABLE IV.—Pre-operative and Post-operative Treatments.

	Total Intravenous Treatments.	Success.	Failure.
<i>Pre-operative:</i>			
Blood	18	12	6
Gum	17	9	8
Blood + gum	6	5	1
<i>Post-operative:</i>			
Blood	21	18	3
Gum	7	4	3
Blood + gum	5	3	2
<i>Total:</i>			
Blood	39	30	9
Gum	24	13	11
Blood + gum	11	8	3

Blood transfusion or gum infusion was given in seventy-four instances in all, and twenty-three (31 per cent.) of these were "failures" in the sense described. This group of cases included most of the severe wounds of the limbs, but fewer chest, abdominal, and cranial wounds, which usually were less suitable for intravenous injections, at any rate before operation.

Generally, those exhibiting shock only with lesser degrees of haemorrhage were given in the first instance gum infusion, blood transfusion being withheld unless gum showed insufficient benefit. To patients who, before operation, were in fair condition, but on whom a prolonged operation was expected to produce more shock, gum infusion was given with satisfactory results. In cases with evidence of severe haemorrhage, blood was given as early as possible, and we cannot emphasize too strongly the necessity for this measure being applied with no delay in such cases.

In this series, therefore, the giving of blood was restricted to a class of case in worse condition as compared with the "gummed" cases.

In a few post-operative cases in which gas gangrene tissue had been found a solution of sodium bicarbonate 2 per cent. and glucose 6 per cent. in distilled water was given with advantage. It was autoclaved at 105° C. in spring-stoppered bottles. The surgical measures taken, however, had certainly the major share in saving these patients.

After operation in abdominal cases, and in some major amputations, rectal infusions of sodium bicarbonate 5 per cent. and glucose 5 per cent. were used; the value of providing ample fluid in such cases was demonstrated convincingly.

Blood Transfusion Methods.

The donors were very light walking wounded cases, who volunteered with admirable spirit. There was always time to make the rapid macroscopic grouping test, and, whenever possible, a donor of the same group as the recipient was used. Failing that, a Group IV donor was taken.

Two transfusion methods were utilized: (1) The whole blood method using the Vincent tube, with paraffined surface; and (2) a very simple citrate method; the latter more commonly.

The Vincent tube was coated by means of a solution of paraffin in ether, as demonstrated by Major Alton. This method of transfusion when successfully performed is very rapid and satisfactory, the facility with which pressure can be applied to force the blood into the recipient's vein is not uncommonly advantageous. If any delay or mishap occurs, however, the blood drawn off may be wasted through clotting, and so an alternative simple citrate method was adopted by one of us (A. F. S.) and generally used; it gave quite satisfactory results.

Citrate Method.

The blood was drawn from the donor by a short curved glass cannula, or alternatively by a wide hollow needle, and the flow directed into a sterile graduated measure containing 5 per cent.

citrate solution, in the proportion of 2 ounces for a pint of blood (1:10). This gives finally a citrate percentage of just under 0.5 per cent., which we found gives a safe but not excessive margin against clotting. It is essential to ensure adequate admixture of citrate with blood either by stirring or by agitation of the contents of the vessel. It was found convenient to stock this citrate solution ready autoclaved in 2 oz. (60 c.cm.) quantities, ready for use. If a hollow needle be used the internal diameter should be from 2 to 2.5 mm., and the length about 4 cm., and it is absolutely essential to have the needle very carefully and recently sharpened; an incision through the skin is an advantage before inserting the needle. Should there be any doubt about the sharpness of the needle, or if the donor's vein is not well swollen, time is saved by exposing the vein and inserting the glass cannula; it was not found necessary to line either cannula or needle with paraffin. Care is needed in adjusting pressure to donor's upper arm, sufficiently but not too strongly, so that a brisk stream of blood is ensured. This is readily accomplished by the use of a blood-pressure armlet adjusted to about 50 mm. pressure.

The citrated blood, kept warm at 40° C., was then run into recipient's vein by means of a simple funnel, tube, and glass cannula as used for saline infusions.

The apparatus required is quickly prepared for use, and the method is at least as free from pitfalls as any other we have tried.

It was found that donors felt little ill effect from the loss of a pint of blood, but that further withdrawal soon disturbed them. In view of the large number of donors utilized it was felt undesirable to take much beyond this quantity as a rule; in order to increase the blood pressure rather more, we adopted latterly the practice of adding to the pint of blood a pint of other fluid, preferably gum solution. This was done from motives of economy in donors solely, and would only be advised when the degree of blood loss was not extreme. In such cases two pints of blood would be indicated, and two donors of the same group might well be used.

In a few very severe cases a second blood transfusion was given later after operation with very beneficial effect.

From a review of this collection of cases it can only be deduced that blood transfusion has a distinct advantage over gum infusion. Analysis of both pre-operative and post-operative cases gives this impression, and previous independent experience of one of us (R. C.) with forty blood transfusions, and the other with a similar number of gum infusions, also favoured the former method. At the same time it is recognized that no two cases are alike in respect of their wounds, their powers of resistance, and the circumstances of exposure and infection.

There is certainly a class of case which derives sufficient benefit from gum infusion; on the other hand, some patients who when treated with gum infusion failed to improve showed great benefit from a subsequent blood transfusion. Our experience in such cases points to the necessity in these severer cases of haemorrhage for proceeding without delay to a blood transfusion. Some cases of pure shock without loss of much blood seem to derive no benefit, unfortunately, from either method.

In abdominal cases, where haemorrhage was the important factor, blood given after operation—or, if more urgently needed, during the operation—undoubtedly saved lives; formerly this type of case after operation failed to rally, and died. One of us (R. C.) had two such cases lately; after operation and before transfusion the pulse rate was 150 and pulse volume poor. In each case a litre of blood was transfused; twelve hours later the pulse was of good quality, ranging between 90 and 100, and each patient made an uneventful recovery.

We are quite opposed to the indiscriminate use of blood transfusion when other methods may be confidently expected to suffice, but we are convinced that there is a class of case in which blood transfusion is the only known treatment likely to succeed, and for such the use of donors and their blood appears amply justified both from the medical and the military standpoint; it is no light thing for the soldier to know that every resource, including blood transfusion, if necessary, will be invoked to bring about recovery of his wounds.

Reference to the table of the results of intravenous treatment shows a uniformly lower proportion of failure with blood than with gum, and if the severe abdominal cases and gas gangrene deaths be eliminated, this difference is only accentuated.

This analysis leads inevitably to the conclusion that blood transfusion had greater value than gum infusion, and the fact that in this series blood was given only to

cases which appeared in worse condition tends to make the contrast stronger.

With either method there is usually an immediate response in the pulse rate and quality, but general improvement is by no means always obvious at once; it would be a mistake to judge the value of either treatment only by the immediate effect; the condition of the patient three, six, or twelve hours later is more important than his state five minutes after the fluid has entered his veins; and, judging by this later clinical condition also, the advantage of blood over gum has impressed us.

We have not seen in this series any ill effects ascribable to gum infusions, though these are spoken of by some surgeons; nevertheless, it is well to emphasize the great importance of running the gum in slowly—about fifteen minutes for 500 c.cm. is not too slow; if this precaution be not taken, vomiting, rigors, and athetotic movements are likely to occur. When slowly administered at the proper temperature (37° to 40° C.) the infusion has more often than not a distinctly sedative effect.

Resuscitation work has its depressing side—many cases are brought in obviously moribund—but its successful side renders it undoubtedly worth while.

If there be a shortage of surgical teams it is difficult to arrange for the adequate working of such a ward, for it is hardly practicable to remove a surgeon from the theatre, where he can operate upon, say, twelve cases in twelve hours, in order to spend his efforts on fifteen to twenty badly wounded men, of whom at most seven or eight can possibly be saved by present known methods. Further, if there are insufficient operating surgeons, operable cases will have to be sent to the base for operation, and these very cases may arrive there in condition as acute as those which needed resuscitation at the casualty clearing station, so that in present circumstances one cannot look to the skilled surgeon to do this work.

It is for the administrative authorities to consider whether the necessary medical officers for this work can be found elsewhere; their services can be very valuable in this field.

Conclusions.

1. Resuscitation methods such as have been developed during the war are of the utmost value in war surgery. It is evident that these methods will be equally applicable in the everyday surgery of accidental injuries and in obstetric work.

2. Gum infusion is an advance on the infusion of normal saline, and may enable a patient who has not lost blood excessively to be operated upon successfully. It is not evident that the benefit due to gum can extend over more than a few hours.

3. Where haemorrhage is severe, blood transfusion is the only reliable treatment, and should be given without delay. In such cases it is much superior to gum. In blood transfusion we found no important difference between whole blood and citrated blood.

4. Previous to transfusion a blood-grouping test ought to be done in every case. If possible, the donor should be of the same group as the recipient; failing that, recourse must be had to a Group IV donor.

5. We wish to emphasize the need for observing the strictest surgical aseptic technique towards donor and recipient. The donor must be free from known general infections, such as syphilis or malaria, in so far as can be ascertained by inquiry.

COLLOIDAL MANGANESE IN GONORRHOEAL OPHTHALMIA.

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It will be generally conceded that the treatment of gonorrhoeal conjunctivitis in its severer forms brings but little satisfaction to the ophthalmic surgeon; and any remedy which promises to control the disease more effectively is worthy of prolonged test. I have recently used colloidal manganese in three cases of gonorrhoeal ophthalmia, and all have made excellent progress; the last case, which is reported here, being especially note-

worthy, both on account of its severity and the splendid result obtained.

During the past three and a half years I have had under my care in this hospital many cases in adults. The local treatment adopted varied from time to time. A group of cases was treated by gonococcal vaccine in addition to local measures, but whether vaccine were given or not, there seemed to be little difference in the results taken as a whole. Gradually, however, I became convinced of the uselessness of silver nitrate in combating the disease, and discarded it in the more severe types with much swelling, for in these it invariably appeared to aggravate the condition.

In gonorrhoeal ophthalmia the most dangerous period is during the first few days of the infection, when, owing to the swelling of the eyelids and bulging chemotic ocular conjunctiva, the cornea is obscured over the whole or most of its area, and the removal of discharge from its surface is made difficult or impossible. The continued bathing of the cornea in this discharge introduces the most serious factor, for the corneal epithelium is damaged principally by the action of the gonococcus or its toxins, while the nutrition of the cornea as a whole is also injuriously affected to some extent by the excessive swelling.

It seems certain that the main effort of treatment in this stage should be directed towards controlling and abating the violent reaction to the gonorrhoeal infection, by bringing about a rapid decrease in the conjunctival swelling, and so allowing of thorough yet gentle cleansing of the whole eye by non-irritating collyria. The use of any drug which by its action would tend to increase the swelling is contra-indicated.

Colloidal manganese appears to act in the manner required. It was recommended and given by Captain J. E. R. McDonagh in my last three cases with favourable results. The first case was not of great severity, but the action of the drug appeared satisfactory. In the second case it was not given till corneal ulceration had set in, but the eye healed rapidly, and swelling and discharge abated during its use. The third case was of a most virulent type, and the effect of colloidal manganese, given for the first time from the beginning, was most striking.

Pte. J., aged 24, admitted December 24th, 1918, with gonorrhoeal ophthalmia of the left eye. Two days previously he felt his eye pricking, and the following morning—the day before admission—the eyelids were swollen and difficult to open. On admission both lids were greatly swollen and almost solid, so that they could only with difficulty be separated. There was great tenderness and pain, and the surrounding cheek was also red and swollen. On opening the lids the cornea was found to be completely hidden by overlapping folds of oedematous bulbar conjunctiva. There was an abundant discharge of thin pus. The eye was bathed with warm boric lotion every hour by day, and every two hours by night, and 10 per cent. argyrol was used every six hours. An injection of 1 c.cm. colloidal manganese was immediately given by Captain McDonagh intramuscularly into the buttock. On December 25th there was a slight improvement, and a little part of the cornea could be seen. The lids were more easily parted. On December 26th he still had slight pain; on December 27th he was given colloidal manganese 1 c.cm. as before, and by the following morning he expressed his delight in the almost complete absence of pain. The change was striking; all swelling of the bulbar conjunctiva had completely vanished; the oedema of the eyelids had greatly lessened, and the discharge also had become noticeably less in volume. The cornea was perfectly clear, with its epithelium intact over the entire surface, and the eye was apparently out of danger. On December 31st a third and last injection of colloidal manganese 1 c.cm. was given, and by January 9th the conjunctiva had become almost normal, and discharge had practically ceased, except for gumming of the eyelids after sleep.

The appearance presented by this case on the day following the second injection of colloidal manganese was in truth surprising. In a fairly wide and long experience in the treatment of gonorrhoeal blenorrhoea it had never previously been my good fortune to witness such a dramatic change. No local measures with which I am acquainted would have brought about such a satisfactory termination.

It is hardly necessary to emphasize the danger of drawing inferences from results obtained from any remedy in a small number of cases. Prolonged use of the drug is necessary before definite conclusions which will stand the test of time can be reached. Nevertheless it is well to avoid cultivating the habit of mind which sees the perfection of achievement in everyday methods already in use, and refuses to recognize their defects. Where treatment is too often followed by indifferent results, as in

gonorrhoeal ophthalmia, the need for fresh endeavour becomes insistent. In future we shall use colloidal manganese in the hope that it represents a decided advance over former methods of treatment; in any event we seem to have acquired a valuable therapeutic ally and one worthy of extensive trial.

I have to express my indebtedness to Captain McDonagh for his valuable assistance in the treatment of these cases; and to Lieut.-Colonel W. Turner, C.M.G., O.C. Connaught Hospital, for permission to publish these notes.

METHYLENE BLUE IN PURULENT DISCHARGE FROM THE EYE SOCKET.

BY

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INJURIES to the eye have been of very frequent occurrence in the war, and enucleation has had to be performed in a large number of cases. After an artificial eye has been supplied, the soldier has in many instances suffered from purulent discharge of the conjunctiva in the socket, particularly if the artificial eye has been worn for a long time, or has become rough and irritating for any reason. These sockets have proved themselves very difficult to treat; the ordinary methods of treatment, such as zinc sulphate, alum, or the silver preparations have been found most unsatisfactory.

Adams,¹ in his monograph on the use of methylene blue in eye work, shows that the drug is of value in cases of conjunctival discharge due to the *Staphylococcus aureus*, the more usual lines of treatment having failed.

In the ophthalmic department of this hospital methylene blue (1 in 1,000 saline solution) has been employed as the regular routine method of treatment in cases of discharging eye socket, and the results obtained have been so striking and satisfactory that we were led to inquire how the drug exercised its effect—whether there was a definite germicidal action, and if so, whether there was a selective action for one micro-organism more than another. The present investigation was undertaken at the suggestion of Major Maitland Ramsay, the clinical results having been observed by him in these wards over a lengthened period.

For the bacteriological investigation, carried out in the pathological department of the hospital, nine cases of purulent discharge from the eye socket were taken. They were not selected—save that they were illustrative cases in which actual discharge was present. Some had been under treatment with methylene blue for a time, but in none had the discharge completely stopped. Treatment was suspended in every case for twenty-four hours or so in order that the discharge might be as abundant as possible without prejudicing the welfare of the patient. A feature of the treatment by methylene blue is that although the discharge vanishes after the drug has been in use for a comparatively short time, it is necessary to continue the treatment for a further period (say a fortnight) after the discharge ceases to be obvious to the naked eye, in order to prevent recrudescence.

In each case to be investigated direct microscopic films were made, and agar slopes inoculated; the first step in the research was to find the prevailing organism in the conjunctival discharge. Agar medium was employed for culture throughout, and the results must necessarily be expressed on limited lines. The possibility of demonstrating the presence of micro-organisms which flourish on different media is allowed for, but the finer points of research into the germicidal valency of chemical substances belongs to the expert bacteriologist.

The direct films made from the socket on microscopic examination were practically all negative, as is often the case in films of conjunctival discharge. The agar slopes were incubated for twenty-four hours. Well-marked growth was found in the case of two cultures only, and these were selected for further experiment. In all cases in which any growth appeared the prevailing organism was found to be *Staphylococcus aureus*.

In each of the two cultures selected for further investigation a subculture on agar was made in order to procure

an active growth in the pure form. As the subsequent procedure was the same for both, details will be given for one experiment alone.

Experiment.

1. The subculture of *Staphylococcus aureus* was taken at the end of twenty-four hours' incubation, a good growth being present.

2. A bacterial emulsion was made by rubbing down the organisms (adhering to the end of a platinum loop which had been introduced into one of the larger colonies) in 1.5 c.cm. sterile saline solution contained in a sterile test tube. The turbidity of this emulsion was barely visible to the naked eye, and it was calculated that the micro-organisms were present in considerable dilution.

3. Three sterile test tubes were taken, and into each was placed 0.5 c.cm. methylene blue, obtained from the stock solution in daily use in the wards.

4. To each tube containing the drug 0.03 c.cm. of the bacterial emulsion was added, the resultant mixture being well shaken to bring the organisms into intimate association with the methylene blue.

5. At the end of half an hour, six hours, and twenty-four hours respectively, these solutions (which had been shaken frequently) were taken, and agar slopes inoculated by making successive strokes with a platinum loop which had been introduced into the emulsion-methylene blue mixture.

6. The agar slopes were examined at the end of twenty-four hours, and forty-eight hours.

Results.—The half-hour and six-hour exposures on agar yielded practically the same result, namely, a diffuse growth of *Staphylococcus aureus* at the end of twenty-four hours' incubation. The twenty-four hour exposure showed no growth visible to the naked eye at the end of twenty-four hours' incubation. At the end of forty-eight hours' incubation, however, a few well developed colonies of *Staphylococcus aureus* were easily seen by the naked eye.

The experiments were repeated several times, and gave the same results.

Summary.

1. The prevailing micro-organism obtained by agar culture from nine cases of purulent discharge of the eye socket was found to be *Staphylococcus aureus*.

2. Methylene blue, although proved to be very active clinically in cases of discharging eye socket, was found to have comparatively little bactericidal action upon *Staphylococcus aureus* obtained from the discharge—0.03 c.cm. of a very dilute emulsion of the micro-organism, after even twenty four hours' exposure to the drug, still giving a number of colonies of growth after incubation.

REFERENCE.

1 P. H. Adams, D.O.: On the Use of Methylene Blue in Eye Work. *The Ophthalmoscope*, vol. xiv, No. 2, February, 1916, p. 78.

PRELIMINARY NOTE ON THE RESPONSE TO CALCIUM SHOWN IN MANIACAL STATES.

BY

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ACTING on deductions drawn from physiological observations I resolved to test the effect of the exhibition of calcium in persons suffering from various degrees of excitement. For this purpose I chose the lactate as the most suitable salt in order to have the action of the calcium ion unimpaired by other elements. Moreover, as the lactate is easily soluble in hot water and remains in solution when cold, a convenient means of administering the drug is available.

I do not propose in this communication to discuss the mode of action of the element in these cases; this and other cognate matters will be dealt with fully in another communication. I wish to report merely the effects observed not only in the mental state but also in the circulatory system.

The action of the drug became evident at least during the twenty-four hours following its exhibition. The acute mental symptoms were alleviated without the production of the stupor so commonly observed resultant from the action of the "sedative" drugs—if, indeed, they produce any effect at all in many cases. The circulatory response has been equally interesting. Instead of the rapid, at times almost uncountable, pulse with its flaccid artery and variable but always low systolic pressure, the pulse becomes

slower, the artery normally constricted and the pulse wave stronger, indicative of an improved action of the ventricular myocardium.

The action of the drug has been equally satisfactory in the distressing restlessness and excitement of agitated melancholia and confusional states as with the simple mania. Those cases in which influenza has been assigned as the principal cause have reacted well to the drug. These cases had resisted ordinary sedative treatment, but with this definite addition of calcium to the diet—for that is what the treatment amounts to—a vicious circle seems to have been completely broken, and they are making good progress towards recovery.

Many of the other cases in whom, owing to the duration of the character of the mental disorder, complete recovery can hardly be expected, have nevertheless shown amelioration of the more acute symptoms, which may well be a determining factor in leading to an improvement of variable degree.

So far I have contented myself with giving 10 grains three times a day with food, and when a response has been obtained dropping the dosage to 5 grains. In one particularly distressing case of agitated melancholia in addition to the doses by day one or two doses have been given at night. It was interesting to note that in one case of mania with diarrhoea not only was the restlessness and excitement allayed, but the number of stools passed fell from six to one.

So far no untoward effects of any kind have been observed, and, considering the small doses employed, these can hardly be expected if careful observations on the pulse are made.

The Lumleian Lectures

ON

CEREBRO-SPINAL FEVER.

DELIVERED BEFORE THE ROYAL COLLEGE OF
PHYSICIANS OF LONDON.

BY

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LECTURE I.

(Abstract.)

In his first lecture Sir Humphry Rolleston dealt with the history and etiology of cerebro-spinal fever. Examining the history from 1805 he distinguished five periods, the fifth beginning in 1903. New York suffered severely in 1904-5, Silesia in 1905-7, and France in 1909-10. In Great Britain outbreaks occurred in 1907 in Belfast, Glasgow, and Edinburgh. Compulsory notification was permanently established in 1912, and the cases and deaths subsequently were as follows:

Civil Population.

Years.	Cases.	Deaths.	Case Mortality (per Cent.)
1912	272	142	52.2
1913	304	163	53.6
1914	300	206	68.6
1915	2,343	1,521	64.9
1916	1,278	853	65.6
1917	1,385	906	65.4

There was therefore no question that the disease increased in this country after the outbreak of war. The belief that there had been a change of type of the disease was supported by Dopfer's observation that in France the type of infecting organism underwent a change during the war. Netter correlated the greater frequency of septicaemic cases and lesions such as rashes, arthritis, iridocyclitis, with this alteration of the infection from Type A (Gordon's Types I and III) to Type B (Gordon's II and IV). The observations of Kennedy and Worster-Drought suggested that Types I and III (Nicolle Type A) were more virulent as regards the meninges and Types II and IV (Nicolle Type B) specially prone to cause septicaemia and

extra-meningeal metastases. But in a recent small outbreak of 10 cases due to Type II under the lecturer's own observation, the meningitic manifestations were very severe. Adshad analysed 49 cases in which Gordon's types of meningococci had been determined, but did not feel justified in drawing any definite conclusions.

The periods between epidemics were bridged over by sporadic cases; at or before the commencement of epidemic outbreaks these sporadic cases became more frequent. The special advisory committee upon bacteriological studies of cerebro spinal fever during the epidemic of 1915, adopting Dopfer and Arkwright's view, concluded that the epidemic was not one of cerebro-spinal fever as such, but what might be termed a "saprophytic epidemic" of the meningococcus in the throats of the population, cerebro-spinal fever being an epiphenomenon of this epidemic, due to a secondary systemic invasion from its saprophytic focus in the nasopharynx, occurring in spare and isolated instances which, as a rule, appear to be unconnected with each other.

Epidemiology.

As the vast majority of the cases in Great Britain occurred during the first six months of the year it might be suspected that meteorological conditions exerted a definite influence on the incidence of the disease. Sudden alterations in the atmospheric temperature had been emphasized by Sophian and Dopfer as responsible for the outbreak of cases, and the lecturer had received the same impression at the Royal Naval Hospital, Haslar, in 1914-17, but investigation of the 93 cases occurring at large naval depôts during the first three months of 1915 did not justify any positive conclusion.

Compton's views on the meteorological conditions were quoted fully, the conditions favouring pneumonia outbreaks, as described by Herringham, mentioned, and a comparison of the curves of pneumonia and of cerebro-spinal fever made. Unless it could be convincingly proved that the outbreaks of cerebro-spinal fever were closely and accurately correlated with changes in the meteorological conditions—and that it was not so appeared clear from consideration of various views—it became more probable that the conditions prevalent during the months of greatest incidence acted by increasing the carrier rate or the power of carriers to spread infection—namely, by coughing—or by both means, and so exposing a larger number of possibly susceptible persons to the opportunity of systemic infection. The conditions favouring a high carrier rate were (a) prevalence of colds and coughs, which enabled existing carriers to infect others; (b) close contact of individuals such as occurred in cold weather. The observations of Dr. J. A. Glover (published in the JOURNAL of November 9th, 1918, p. 509) showing the influence of overcrowding in increasing the carrier rate were quoted. In discussing the question of the relation of the disease to campaigns it was pointed out that there was little information as to increased prevalence of the disease during previous wars. In the French troops in this war the disease became less frequent—the rate in 1915 being 4.3 per 10,000; in 1916 it was 1.8 per 10,000, and in 1917 1.5 per 10,000. For the army in this country the figures were as follows:

Army at Home.

Year.	Cases.	Deaths.	Case Mortality (per Cent.)
1914*	50	31	60
1915	1,195	586	49
1916	957	430	44.6
1917	1,337	593	44.3

* From September 19th to December 31st, 1914.

In the British Expeditionary Force in France the disease began to appear widely in a scattered fashion in January, 1915, at the same time as in troops in this country. The outbreak in 1915, when the available serums were useless, was the worst in France; the mortality was then about 50 per cent., and during the war probably never fell below 35 per cent. The disease first became prominent among the military population in this country, and the civil population then followed suit; the increase in the incidence of the civil cases during the

war was striking; in 1915 the number of civil cases was eight times that of 1914, and in 1916 and 1917 four times that of 1914 (Reece). Evidence with regard to the relation of colds and catarrhal affections to cerebro-spinal fever was conflicting. The special Advisory Committee of the Medical Research Committee on the bacteriological studies of the epidemic in 1915 considered that the relation with catarrhs and the disease was fortuitous, as both had a similar seasonal prevalence, the relation being the same as that between catarrh and the prices of coal. On the other hand, the view that catarrhal throat affections, by inducing coughing and sneezing, spread meningococcal infection and so increased the carrier rate and the chances of systemic infection, as urged by Pringle, seemed highly probable. The prevalence of colds in the population would thus favour the outbreak of cerebro-spinal fever, but it was not necessary that cerebro-spinal fever patients should have had colds or naso-pharyngitis.

The evidence as to the depressing effect of recent acute affections, such as influenza, mumps, and measles, in disposing persons to meningococcal infections was also conflicting. The most susceptible age was from birth to 5 years, and in some epidemics 80 to 90 per cent. of the patients had been under 15 years of age; in the Dantzic epidemic of 1865, for example, 93 per cent. were under this age. It was generally estimated that half the total cases occurred in the first five years of life; in England and Wales, during 1914, 51.4 per cent. of the cases were in children under the age of 5 years, and 72.4 per cent. under 10. But in 1915 and 1916 these percentages (30 and 48.8, and 38.7 and 54.8 respectively) were much lower, although the military cases are not included (Reece). Compton, who connected the greater fragility and delicacy of the nasopharyngeal mucosa in children with their susceptibility to infection, stated that the least susceptible age is between 35 and 40 years. Statistics favoured the opinion that the disease occurred more often in males, especially in young males.

Mode of Spread of Infection.

The actual spread of infection was mainly due to droplets expelled from the nasopharynx in coughing, sneezing, and violent expiratory efforts, so that the carrier's power for harm depended on the existence of cough, etc., on the number of meningococci, and also largely on their being of an epidemic type. Infection might also be conveyed directly from mouth to mouth, as in kissing. The question of the importance of prostitutes as meningococcal carriers required investigation. Other methods of spread of infection were less important or very doubtful. Adami had recently spoken of the spread of infection through drinking vessels, partially or imperfectly rinsed, in crowded canteens and refreshment booths.

When a carrier lived in close contact with healthy individuals the carrier state was prone, especially under conditions of overcrowding, to be conveyed to others, and these new carriers acted in like manner. Among the individuals thus exposed some might, from diminished resistance, become systemically infected, and, as Glover had shown, this should be expected when the carrier rate, normally under 5 per cent., rises to the danger line of 20 per cent.

Path of Meningeal Invasion.

Three paths by which the meningococci reached the meninges were discussed: 1. Direct invasion through the nasopharynx and accessory sinuses through (a) the sphenoidal sinuses; (b) the cribriform plate of the ethmoid; and (c) through the Eustachian tube to the middle ear and so to the brain. 2. Lymphogenous infection along the spinal nerve roots in the cervical, thoracic, and abdominal regions. 3. Infection from the blood stream. The conclusion drawn was that while the haemic infection of the meninges appeared to be applicable to the majority of the cases, the possibility that in certain instances infection might pass by other routes, such as through the cribriform plate of the ethmoid or the sphenoid, could not be entirely excluded. In connexion with the path of infection of the meninges the question arose where the meningitis began—whether it started in the choroid plexuses of the lateral ventricles (as seemed to be the general view), in the spinal meninges, or in both situations simultaneously.

Meningococcic Septicaemia.

Sir Humphry Rolleston concluded his lecture by discussing meningococcic septicaemia, which, he said, might present several variations from the short initial invasion of the blood by meningococci, which probably preceded infection of the meninges in most, if not all, of the cases of meningococcic meningitis. He continued as follows:

Possibly cases of true meningococcic septicaemia are only more commonly recognized now than formerly, but Netter has suggested that Dopter's observation that whereas before the war 96 per cent. of the cases of meningococcic meningitis were infected with the meningococcic Type A (Gordon's I and III types), a change has taken place, so that now the parameningococcus, or Type B (Gordon's II and III), is responsible for an equal, if not a larger, number of the cases, may be correlated with an increased incidence of meningococcaemia and meningococcic manifestations in the skin, joints, and eyes. Brulé also considers that parameningococcaemia (due to Type B) is more frequent and more severe than meningococcaemia (due to Type A).

Meningococcaemia appears to have been first established by Gwyn in 1899 in a case of meningitis with arthritis. Salomon in 1902 detected meningococci in the blood eight weeks before meningitis supervened; in the following year Warfield and Walker described the first case of meningococcic endocarditis with septicaemia; a fulminating case of meningococcaemia also without meningitis was recorded by Andrewes in 1906, and in reviewing the cases two years later Duval summed up in favour of the septicaemia being secondary to the meningitis, the reverse of the present opinion. Lüdke described a case of meningococcic septicaemia in which in addition streptococci were obtained by blood culture.

Portret distinguished four kinds of meningococcaemia: (i) Without meningitis, (ii) preceding meningitis, (iii) with metastases, (iv) without metastases. The following forms of meningococcic septicaemia may be described:

1. In a certain number of cases a fulminating meningococcaemia proves fatal before meningitis has had time to occur, and lumbar puncture, if performed, gives exit to clear fluid without any meningococci or increased cell content. At the necropsy meningococci can perhaps be obtained from the fluid in the ventricles of the brain, but there is no exudation. The clinical features of these cases are severe toxæmia, often at the onset, with a low temperature, followed by fever and perhaps hyperpyrexia, rapid pulse and respirations, and extensive hæmorrhages into the skin, mucous and serous membranes, and adrenals. The clinical picture may suggest the "acute abdomen," such as internal strangulation, intussusception (Pybus), or Henoch's fulminating purpura, hæmorrhagic fevers.

2. Abortive cases in which a blood infection is overcome after a short time by natural immunity, though commonly assumed to be frequent, are difficult to prove. Cases of febrile meningococcic purpura without meningeal symptoms, or presenting meningeal irritation which, as shown by lumbar puncture, is not due to meningitis, and may therefore be explained as meningism, come under this heading. Sainton and Maille's case with a measly eruption, synovitis of two joints containing meningococci, and a positive blood culture but no meningitic symptoms, the whole illness lasting about a week, belongs to this group of abortive cases. In order to determine the incidence of these abortive cases during an epidemic Maxcy selected 27 cases with fever, headache, and malaise, but without petechiae, and made blood cultures which were uniformly negative. Doubt is thus thrown on the assumption of their frequency, but further investigations of this character are desirable.

3. Intermittent meningococcic fever due to septicaemia may (a) last for weeks without any meningitic symptoms ever developing. In Liebermeister's case the disease lasted four months and in Bray's case, complicated by chronic pulmonary tuberculosis, there was fever for five months and recognized meningococcaemia for three months. Though striking, they have not been very often recognized. Netter had five examples among his 368 cases, and Brette collected 22 cases in 1918. The attacks of fever may be quotidian or tertian and in the intervals the patient may feel well. The disease may resemble malaria, quotidian or tertian, or enteric fever—Netter's pseudo-malarial and pseudo-typhoid forms. The attacks of fever may begin with a rigor and

end with sweating, be accompanied by splenic enlargement; joint pains and orchitis may occur, and rashes, such as polymorphic erythema or erythema nodosum, herpes or papules, especially on the lower extremities or around the joints, or petechiae may be present. But the disease may run its course without any cutaneous manifestations (Zeissler and Reidel, Worster-Drought and Kennedy). In exceptional instances malignant endocarditis is due to infection with the meningococcus (Warfield and Walker, Cecil and Soper, Worster-Drought and Kennedy).

- (b) In another group septicaemia follows the subsidence of meningococcic meningitis. Brulé records a case with septicaemia of two months' duration with purpura and positive blood cultures on five occasions. Lancelin's patient had meningococcic meningitis, and after an afebrile period of four days had fever imitating malaria for seven days and then yielded to serum; meningococci were not obtained from the blood, but the presence of purpura rendered septicaemia highly probable. Among 126 cases Landry and Hamley detected two cases of post-meningitic septicaemia.

- (c) During the course of intermittent meningococcic fever there may be transient meningitic symptoms; thus, Maxcy describes a case with transient rigidity of the neck, which appeared a week after the onset and rapidly passed off.

- (d) In an allied group of cases the septicaemia is prolonged, but is eventually followed by meningeal infection; in Aigné and Chéné's case the pseudo-malarial stage with splenic enlargement lasted for four weeks before the onset of meningitis; and in Serr and Brette's two cases lumbar puncture was first performed after four and two months' fever, and cures rapidly followed the intravenous injection of serum.

A correct diagnosis is seldom made in the absence of meningitic symptoms. Blood cultures should be taken during the febrile paroxysm.

The Milroy Lectures

ON

HALF A CENTURY OF SMALL-POX AND VACCINATION.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

BY

JOHN C. McVAIL, M.D., LL.D.

CONTROL OF SMALL-POX IN THE PRESENT DAY (continued).

VII. LOCAL CO-OPERATION AND CENTRAL CO-ORDINATION.

A duty that should not be neglected is to notify local authorities in the neighbourhood, especially if any contacts are supposed to have travelled into their area. The date of exposure to infection of such contacts should always be stated to the medical officer so as to guide his action. If in any case there has been an exodus of navvies from constructional works or of vagrants from a lodging-house, the police of surrounding areas, as well as the medical officers of health, should be informed and a search instituted for contacts. Often the name of the navy in such circumstances is of no avail. Some of them for various reasons seem to use a new name for every new job.

Dr. Boobbyer of Nottingham adopted a very systematic scheme of notification to various parties within his own area who might utilize information sent to them. The name and address of every fresh patient was furnished daily to general and special hospitals, to the post-office surgeon, the Charity Organization Society, the guardians, the Education Committee, the city librarian, the health visitor, the owners or rent collectors of infected houses, the vaccination officer and public vaccinator, and various municipal officers.

Under orders by the Local Government Boards of England and Scotland every small-pox case individually is to be reported as it occurs. The army, navy, and air force authorities are notified at once if concerned, an inspector is usually sent, and necessary inquiries are carried back to other districts or other countries. Small-pox abroad is followed to the extent that information

allows, and port medical officers are told of any known special risk. Last year at Newcastle a shipload of refugees from Mumsensk in Russia was medically examined, and four or five cases of ambulant small-pox were found which would otherwise have got to destinations within the country. The resumed traffic with the North Sea and Baltic ports is being closely watched.

These, then, are the essentials of the modern method of small-pox control: (1) A large supply of glycerinated calf lymph constantly available, capable of immediate increase, and freely used for all who will take advantage of it; (2) compulsory notification; (3) a sufficient public health staff; (4) search for, vaccination of, and surveillance of contacts; (5) isolation; (6) disinfection; and (7) local and central administrative co-operation and co-ordination.

Excepting for two features, these preventive measures, as such, are not new. They are not even modern. In a review of the public health administration of Glasgow⁶ the late Dr. Hugh A. McLean showed that so early as 1648 the precautions set forth for the prevention of plague were, when translated into modern speech, briefly as follows:

- "1. Compulsory notification.
- "2. House-to-house visitation; districts mapped out and certain quartermasters or sanitary inspectors appointed to each.
- "3. Compulsory removal, rich and poor alike, to the isolation camp on the Town's Moor, with corollary of treatment and upkeep at the town's expense.
- "4. Appointment of a superintendent to manage the camp with visitation by a councillor twice or thrice weekly.
- "5. Cleaning of infected houses and clothes and removal in special closed carts of infected filth."

The two new items in the modern scheme of prevention as applied to small-pox are (1) vaccination, or immunizing of the individual, and (2) observation of contacts, based on present day knowledge of incubation periods during which infectious disease can be dealt with before the stage of infection is reached. These embrace the essential advances in principle which have been made within the past three hundred years. The rest is improvement in practice.

A Navvies' Small-pox Outbreak.—In illustration of the experiences and problems—difficult, but stimulating and interesting—which small-pox may bring to the health administration of a rural area unprovided with the preventive equipment of a town, I may give a brief account of an outbreak amongst navvies in the winter of 1892-93. A new railway—the West Highland—was being constructed in Dunbartonshire, along the shores of the Gareloch, Loch Long, and Loch Lomond, and hundreds of navvies were employed at a time when small-pox prevailed extensively in the industrial parts of Scotland. On December 26th, 1892, a message came to me from the Glasgow Health Office that a tramp suffering from small-pox had been found in a lodging-house, and that he had just come from Ardlui, a small scattered hamlet at the head of Loch Lomond, where he had been staying for several days. I wired to the nearest doctor on Loch Lomondside—at Tarbet, about ten miles away—to visit immediately, and set about collecting vaccine lymph preparatory to visiting on the following morning. There was a steamer service on the Loch only three days a week.

The tramp had stayed for several days in a navvies' hut used as a lodging-house. There were 19 inmates and the incubation period had not quite elapsed. Note was taken of the vaccinal condition of the 19, and I arranged that the Tarbet doctor, who was also doctor to the railway constructional works, would visit daily and watch for appearance of the disease. The railway contractors were asked, and agreed, to refrain from dismissing any of the navvies in the hut, and to employ them in a gang by themselves. Two, however, had already gone away, and were searched for by means of the police in half a dozen adjoining counties and burghs. Both were found. One had previously had small-pox, and neither developed the disease.

Meantime the hut was disinfected and the infected bedding burned, but the problem which troubled me most was what to do with any small-pox which might develop. The nearest available hospital was at Knightswood, close

to Glasgow, and forty miles by road from Ardlui. Conveyance of small-pox cases by the steamer service was not to be thought of, and the onset of a heavy snowstorm answered in the negative the question whether Knightswood Hospital could be approached by road. I resolved therefore—and there was no time for deliberation—to start a hospital and observation house on Loch Lomondside. The navvies' lodging-house was secured for the former purpose, and another hut not far away was obtained as a reception house, the ordinary navvy inmates being sent elsewhere. Staffing and equipment were the next problem, though all questions were really being tackled at the same time, with the help of Mr. Dunbar, the county sanitary inspector, who gave invaluable assistance. The observation hut was put in charge of a navvy who had been in the army, and maintained discipline. No nurses could be obtained in Glasgow, but the ex-matron of a small local hospital was found in the Vale of Leven, at the south end of Loch Lomond, and undertook the job with such help as was obtainable. A retired sanitary inspector, not in his first youth, was also enlisted in the service, and, under the name of "Sanitas," which somehow was at once given to him in the locality, he did excellent work, though on one occasion his supervision of the funeral of a patient who had succumbed to small-pox had results which would have required some explanation had an intelligent press got hold of the facts. It required the aid of three men and three bottles of whisky to accomplish the obsequies of that navvy. One of the mourners was so overcome that he fell into the grave on the top of the coffin, and subsequently conveyed small-pox to a neighbour who had no other kind of contact with the outbreak. Such a funeral introduced what is now called "a certain liveliness" into the proceedings, and some restraint had to be put on local enthusiasm. The thrice-a-week steamer service was quite insufficient for communication purposes, and a night drive in an open trap along the frozen roads from Glen Falloch to Balloch was the coldest experience I ever had. A motor launch with its engineer was hired for the period of the outbreak, and served for conveyance of bedding, furniture, food, and other supplies, and also of the staff.

These arrangements were not wholly made in advance, but matured contemporaneously with the occurrence of cases of small-pox. On January 2nd and 3rd three of the navvies developed the eruption. A man who had been twice vaccinated and had had a day or two's feverishness without eruption was retained as attendant, and the wife of the hut-keeper was also pressed into the service.

The Tarbet doctor took medical charge of both huts. A son of the keeper of the original (by that time the hospital) hut was one of the inmates of the observation hut, but refused revaccination and disobeyed strict injunctions not to visit the hospital hut. He duly developed small-pox and was transferred to the hospital hut. Two or three persons had been indirectly exposed to infection from the case of the tramp and two developed the disease.

Another centre of infection was meanwhile discovered at a navvies' hut at Ardencaple on the Gareloch. On January 10th the hut-keeper developed the disease and was removed to Knightswood Hospital, the distance being about twenty miles. Infection had been by a tramp on his way north to Crianlarich in Perthshire. I wrote to the Perthshire medical officer warning him to be on the outlook for small-pox at Crianlarich, but received the same day a letter from him warning me about Ardencaple. On the side of Loch Long, midway between Ardencaple and Ardlui, was another navvies' hut which also became involved by tramp infection, and as it was only nine or ten miles from Ardlui, the hospital hut there served for a case which occurred. Whilst visiting the Loch Long hut I found an inmate engrossed in reading the *Fortnightly Review*. Many a navvy, like this man, has a life story which he will not reveal.

The public health authority sanctioned the use of revaccination to the utmost in control of the disease, and, employing the doctor at Tarbet, the operation was, I believe, performed on every one of 600 navvies working on the railway track in Dunbartonshire, with the exception of such as were already immune through small-pox or revaccination.

The total cases in the outbreak amounted only to 12, with 2 deaths.

Regarding vaccination, I reported as follows:

Of the nineteen inmates of the hut at Ardlui, three had already had small-pox and none of these were attacked; four had been either revaccinated or their primary vaccination had been performed subsequently to the age of 12 years, thus making it equivalent to a revaccination, and none of these were attacked by small-pox, though they included the man referred to who had a slight febrile illness. Of the remaining twelve, one had four marks of vaccination, two had two marks, six had one mark, and two had no traces of ever having been vaccinated. None of those who had more than one mark were attacked. Of the six who had one mark two were attacked, and of the two who had no marks, both were attacked and one died.

The facts as to the vaccination or non-vaccination of these nineteen persons were taken down by Mr. Dunbar to my dictation on my first visit on 27th December, previous to any of them having developed small-pox.

Such an outbreak involves much hard work to those responsible for its control, and calls out all the initiative a man possesses, but the results far more than repay the labour. The scene was set in the wilds, beside lochs and frozen streams and snow-clad mountains. The whole experience made an unforgettable impression, and was an unequivocal demonstration of the value of vaccination, supplemented by emergency measures of isolation and observation of contacts.

Leicester and Small-pox.

It is impossible to complete a survey of the present-day control of small-pox without reference in some detail to what has come to be known as the Leicester Method of dealing with the disease.

The usual antivaccination history of Leicester is that prior to 1872 it was a well vaccinated town, and that after having suffered from the epidemic it abandoned vaccination. The facts, however, are very different. Before 1872 Leicester had been notorious for its neglect of vaccination, as appears, indeed, from statements made by exponents of Leicester's methods. In 1842 the guardians decided not to carry out the Vaccination Act of 1840, and in 1851 not half of the inhabitants were vaccinated. Lord Lyttleton, in introducing the Vaccination Act of 1853, cited Leicester as an example of neglected vaccination. A table of statistics of vaccination submitted to the Royal Commission by Mr. J. T. Biggs on behalf of Leicester showed a large average default excepting for the years 1868-71, and as regards the period subsequent to 1872, at a census of the vaccinal condition of a typical population of over a thousand people, taken in 1903, it was found that about 62 per cent. had been vaccinated, though no doubt many of the vaccinations would be of old date.

It happens that from time to time in recent years⁶ Dr. Killick Millard, the medical officer of health, has quoted as follows from my book, *Vaccination Vindicated*, published so long ago, alas! as 1887:

In Leicester, when its time arrives, we shall not fail to see a repetition of last century experiences, and certainly there will afterwards be fewer children left to die of diarrhoea. It is to be hoped that when the catastrophe does come the Government will see that its teachings are duly studied and recorded.

As I am by way of summing up my views on the whole subject, the opportunity may be taken of commenting on the prophecy, and generally on the doings of Leicester in respect of small-pox and vaccination.

I have learned, I hope, many things in thirty years, and feel no need to maintain now all I believed then, but the prophecy above quoted was conditional. In the same paragraph I wrote:

Throughout the country there has been nothing approaching an epidemic since 1870-73, and Leicester has had little chance of getting its "immunity" tested. When another great outbreak occurs among the susceptible population of England it will be time enough then to see how Leicester comports itself under the ordeal.

In 1893 (in Stevenson and Murphy's *Hygiene*) I repeated the reservation that "since the Leicester experiment was begun it has not been subject to the test of any general epidemic like that of 1870-73." That reservation remains. Nothing comparable to the great epidemic of 1870-73 has since occurred, and Leicester's immunity has not been subjected to the stipulated test. But Dr. Millard does not give the full quotation, and in *The Vaccination Question* he definitely excises my reference to the 1870-73 epidemic. Yet in proportion to the prevalence of small-pox in Britain, or in London, Leicester stood worse in 1892-93 and in 1903-4 than it did in 1870-73. But I attach little importance

to these comparisons. The essential facts are (1) that small-pox is not now, in respect of fatality or infectivity or prevalence, the same virulent disease as it had been when I wrote *Vaccination Vindicated*; (2) that glycerinated calf lymph was not then available as it is now for emergency vaccination to any required extent in Leicester or anywhere else, and (3) that the Leicester Method as expounded by its protagonists a quarter of a century ago differs in important respects from the method now followed in that town. Taking as its expositor Mr. J. T. Biggs, to whom Dr. Millard specially refers, the method as it existed, or rather as it professed to exist then, is very different from that followed now.

Several points may be noted:

- The Method was "without recourse to vaccination." (The italics are by Mr. Biggs.)
- The Method was entirely voluntary; there was no compulsion.
- The same hospital was used for small-pox and all other infectious diseases at the same time.*
- The same hospital was also used for the (voluntary) quarantining of contacts.
- Compensation for loss of time (of contacts) was not offered.

The best feature has been that from the beginning contacts seem to have been searched for carefully and kept under surveillance. That is an important fact, creditable to the medical officers concerned. Houses and their contents were, of course, disinfected.

Every one of the items (a) to (e) has been given up.

(a) "Without recourse to vaccination." In saying that this item has been given up a reservation is necessary. I do not believe, and never have believed, that the Method ever was without recourse to vaccination, and that which never existed cannot be given up. But Mr. Biggs says so with the emphasis of italics. He repeats the statement, and before the Royal Commission he says, "We have dealt with small-pox without vaccination" (Q. 15374), and he speaks of "the abandonment of vaccination." Dr. Millard uses the same phrase, "abandonment of vaccination." He writes that "Leicester, indeed, by abandoning vaccination, has performed a 'control' experiment of some value,"⁷ and refers to the epidemics which have occurred "since vaccination was abandoned" (*Public Health*, 1904, p. 627). But there is an important difference. As he observes, "It is well to define our terms." When he says "vaccination was abandoned," he means "infantile vaccination as established by law in this country." It is in this way, by this special meaning for the word vaccination in this special connexion, that Dr. Millard is able to say that Leicester has abandoned vaccination. He states the position rather differently again when he says that the method "professes to suffice for the control of small-pox without resort to universal vaccination." In his report for 1902 he wrote that "all three medical officers of health who have carried out the 'system' have been firm believers in vaccination and have not hesitated to make as full use of it as possible, short of compulsion, when the occasion for it has occurred." Therefore, when Dr. Millard speaks of abandonment of vaccination he does not really mean abandonment of vaccination. But if the chairman of the Sanitary Committee of Leicester (Alderman Windley, who has filled that office for forty years) was within even measurable distance of being correct in saying in 1887⁸ that "only in a very rare instance was it (vaccination) done with consent of individuals by the ex-officer of health, Dr. Johnson, and that is so long since that he does not remember it," then there has been a vastly increased resort to vaccination, and the Leicester Method is not now in respect of vaccination what it was thirty years ago. In 1903 there were 1,084 contacts, and Dr. Millard induced nearly 800 of them living in infected houses to submit to vaccination.

The Leicester Method, in short, is not "without recourse to vaccination."

(b) Mr. Biggs declared before the epidemic of 1892-93:

We find small-pox very easy to deal with, and the same hospital and staff of officials deal with small-pox as with other infectious diseases. There is no compulsion. If people choose, they may go into quarantine, or they may stay out. No one's liberty is infringed.⁹

* Also, Mr. Biggs wrote, "We have one horse and one ambulance van which is kept for other diseases, whether there is any small-pox or not" (*Vaccination Inquirer*, July 1st, 1891).

There is nothing to show that removal to hospital is now any more optional in Leicester than in any other large town which possesses sufficient accommodation. That "no one's liberty is infringed" is only true if every case that is removed goes willingly—and it is unbelievable that Dr. Millard lets any patient fit for removal remain at home if the public is thereby endangered.

(c) The use of the same hospital for small-pox and all other infectious diseases was abandoned so early as before the end of 1892—that is, whenever small-pox became epidemic in the town, and less than two years after such use had been described as part of the Leicester Method. Not only was a separate small-pox hospital of sixty beds subsequently provided, but the whole of the ordinary hospital for infectious diseases was most prudently emptied of all other diseases and set apart for small-pox in the epidemic of 1903-4—the second since 1871-2—and Dr. Millard being now medical officer of health. It was a wise precaution, but it was not the Leicester Method.

(d) The quarantining of contacts at the hospital was abandoned in 1893, again when the town had to deal, not with a theory, but with a reality.¹⁰ Dr. Sidney Coupland says, in reporting to the Royal Commission (Appendix VI, p. 3): "It is not, therefore, to be wondered at that the sanitary authority was led to abandon this essential feature of the plan known as the 'Leicester System' and to substitute for it the generally adopted practice of maintaining infected families under supervision in their houses during the 'quarantine period' of sixteen days."

(e) With regard to compensation for loss of time not being offered to contacts, when such compensation was recommended by the Royal Commission on Vaccination, Dr. Millard declared that "it marks the approval of the Royal Commission of one of the special features of the 'Leicester Method.'" I would not myself have regarded (e) as of first class importance, but as Dr. Millard holds it to be a "special feature" it is only fair to include it in the list. Mr. Biggs said to the Royal Commission:

I think there is sufficient evidence to prove that no compensation has been made in the shape of wages, and that all that has been done in carrying out our system has been to reimburse those whose articles of furniture have been destroyed.

The Leicester Method has in this respect, therefore, been reversed, and the reversed practice is now boldly claimed by Dr. Millard as distinctive of the Method.

Indeed, it is not vaccination but the Leicester Method in most of its features which has been abandoned in Leicester. At the same time, small-pox has in the present day become in this country a less fatal, a less infectious, and a less prevalent disease than when the Method was propounded. Under these circumstances Leicester had only 355 cases of small-pox in the epidemic of 1892-93 and 715 in 1903-4, and thus furnishes useful illustrations of the fact that, with the mild type of small-pox which prevailed in the provinces in these two epidemics, the modern method, which had taken the place of the Leicester Method, can achieve some measure of success even in a town where there is a large unvaccinated population, and where pressure towards recent vaccination is applied only to contacts.

Leicester's "Luck."—In 1904¹¹ Dr. Millard appreciated how much Leicester owed to the attenuated strain of virus with which it had been infected. "I fully realize," he says, "that the results of the experiment in the future may be very different from those achieved in the past. Moreover, it may have been merely a lucky coincidence that the two epidemics which have occurred since vaccination has been abandoned* have been of such an exceptionally mild type. The epidemic at Gloucester was far more fatal." But Leicester has shared in the unparalleled freedom from small-pox which this country has enjoyed since 1904, and now Dr. Millard derides the "luck" theory on which he would have been able to fall back had a severe type of small-pox with high infectivity been experienced in Leicester. In 1914 he writes:¹² "Many people appear to think that, owing to some extraordinary good luck, small-pox has never come to Leicester in a fatal or epidemic form since vaccination was abandoned." Again: "Hitherto it had often been alleged that the 'Leicester Method' had never been adequately tested, and that Leicester had been lucky."¹³ Thus in 1914 Dr. Millard

ignores the reservation which he had made ten years earlier as to luck. He did not know, and none of us knew, otherwise we would have been prophesying smooth things, that the mild small-pox which first unequivocally showed itself in the epidemic of 1892-95 was the beginning of an experience which was to last and develop up till the present time. But he need not now jeer at himself, under the pseudonym of "Many people," for having prudently provided, lest the position should prove untenable, the bridge of retreat which he had builded under the name of Luck.

In one important respect, however, Leicester has been lucky. It is impossible to read the reports of Dr. Priestley on the epidemic of 1892-93 and Dr. Millard on that of 1903-4, without being impressed by the admirable skill and activity and vigilance which distinguished their management and control of the outbreaks. A public official has no easy task in carrying out measures which are contrary to the prejudices or opinions of the authority which he serves, and it requires both tact and courage to deal successfully with so difficult a position. There is abundant evidence that in Leicester the officers have been well endowed in both respects. This has constituted Leicester's Luck.

WHAT OF THE FUTURE?

More than a quarter of a century ago I wrote that "it will not do to assume that throughout the world, from now till the end of time, small-pox will continue to rage epidemically unless prevented by universal vaccination. Just as leprosy has died out from this country and is even now dying out from Norway and Sweden and Iceland, so may small-pox or scarlatina, or measles, or any and every zymotic disease, die out in the future from this and every other land. And, quite conceivably, small-pox, rather than either scarlatina or measles, might be the next in order of the maladies to disappear from the civilized world."¹⁴ But, I went on to argue, epidemics had been too recent and too severe to justify any assumption of such disappearance. During the quarter of a century since these words were penned, the position has vastly improved, but even yet one dare not assume that danger has disappeared or become negligible.

The European war has passed and the armies are returning to their own countries. It was under these circumstances that the small-pox pandemic of the early Seventies developed. Up till now no such sequel has arisen. But in considering the after-war possibilities of reintroducing small-pox into this country, there is a substantial risk of importation by persons arriving during the incubation period, especially from countries like Russia or Poland when communication with them is again opened up. As before noted, ordinary traffic carrying passengers and cargo from the North Sea and the Baltic has already begun.

It has, however, to be borne in mind that the belligerent armies have very extensively received the protection of revaccination. What the details are for each army we do not know, and we have not yet the particulars even for the British Forces, but I would venture to hope that the amount of vaccination against small-pox in the British army must have greatly increased the total anti-variola protection of the United Kingdom as a whole and especially of the adult male part of the population. Always in the past since the vaccination laws were enacted the child population has most benefited by legislation, and the transference of small-pox prevalence and mortality from earlier to later periods of life has been one of the phenomena most characteristic of the Jennerian prophylaxis. Now, however, infantile vaccination is largely fallen into disuse, whilst the male adult population is probably better protected than ever before. For though revaccination was always obligatory in the army, yet until this war began the army was so small as to count for comparatively little in the country as a whole. As years pass it will be interesting to watch the course of small-pox prevalence under these conditions, that is, if small-pox does resume its prevalence. Still better will it be if the disease in its old form finally succumbs to the mild strain which is now so common.

Wars have been followed by various pestilences amongst the civil population. As recorded by Dr. Prinzing,¹⁵ bubonic plague, typhus fever, dysentery, typhoid fever, and small-pox have been concomitants of great world

* Dr. Millard does not mean that vaccination was abandoned. His special definition of the term vaccination has to be borne in mind.

struggles. The virulent pandemic of influenza has so far been the only outstanding accompaniment of the greatest of all wars, though in Germany, as already noted, the enormous number of Russian prisoners introduced the infection of small-pox, which obtained more hold than that country has ever experienced since it adopted its great system of vaccinal protection. It is too soon yet to prophesy that we have seen the last consequences of the European war in respect of epidemic disease. If, however, small-pox were to invade this country, the measures at our disposal and our preventive equipment generally should enable us to deal with it, despite the fact that, on the whole, we are going back on, rather than developing, our position in regard to general protection obtained beforehand. If the disease is of the mild or American type with low infectivity, it is all the less to be feared. If, on the other hand, the old European type of the Seventies should begin to develop, the means for meeting it are at hand. If vaccination of contacts, supplemented by isolation, disinfection, and the other measures for controlling epidemics were to prove insufficient, then I have no doubt that the spread of infection would result in the general adoption of the one solitary measure capable of controlling an extensive epidemic. That measure is vaccination, but it will be all the greater triumph of vaccination if even a limited resort to it under the modern method suffices to prevent any outbreak from assuming epidemic or pandemic proportions. Just as Lister's antiseptic system finds its greatest triumph in the aseptic system which evolved from it, in the same way success of the modern method of small-pox control will be the greatest triumph of the Jennerian prophylaxis.

In concluding these lectures, let me express my thanks to medical officers of health in various parts of the country who have kindly replied to many inquiries; to Dr. John Brownlee, of the Medical Research Committee, I am greatly indebted for aid in abstracting particulars from published reports; and I have again to thank the Royal College of Physicians for honouring me with the Milroy Lectureship for 1919.

REFERENCES.

⁶Glasgow Medical Journal, July, 1911. ⁶Public Health, July, 1904, p. 609; *The Vaccination Question*, 1914, p. 101; *Public Health*, March, 1917, p. 115. ⁷Public Health, July, 1904; *The Vaccination Question*, 1914, p. 44. ⁸Vaccination Inquirer, November, 1892, p. 128. ⁹Vaccination Inquirer, May, 1891. ¹⁰Dr. Priestley's Report, p. 97, and Royal Commission's Final Report, par. 483. ¹¹Public Health, p. 627. ¹²The Vaccination Question, p. 102. ¹³Ibid., p. 137. ¹⁴Stevenson and Murphy's Hygiene, vol. ii, 1893. ¹⁵Epidemics Resulting from Wars, Clarendon Press, 1916.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INFANT FEEDING.

IN Dr. Laing's article in the BRITISH MEDICAL JOURNAL of February 8th he refers to the system of long intervals and limited feeds advocated at many infant welfare centres, and expresses the fear that it will bring discredit on them, "for the mothers will find that babies fed in this manner do not do so well as others." As an infant welfare medical officer having some 1,000 babies under my supervision, I should like to express my entire agreement with Dr. Hickling in her reply to Dr. Laing. Fourteen years ago I saw such splendid results from the "three-hourly day and no night feeding method" adopted as the routine at some of the largest maternity hospitals on the Continent that I have recommended it ever since, with excellent results.

At present I have a dozen pairs of twins attending my clinics some of whom weighed only from 4½ to 6 lb. at birth, and all of whom have made good progress with three-hourly feeds during the early months. I found several of these poor mothers fed their infants only three-hourly from the first week because the process of feeding two, in addition to the necessary toilet, took so long that more frequent feeds were impracticable. I had a set of triplets attending one of my clinics brought up on what Dr. Laing calls "this system of starvation." At the age of 10 months none of the three weighed less than 20 lb., and they are still "going strong." To-day I examined a perfectly healthy baby weighing 19 lb. 10 oz. at 8 months old who, the mother assures me, has only been fed three times in the twenty-four hours—that is, at 7 a.m., 1 p.m., and 7 p.m.—ever since the age of 3 months, though I usually advise five or six feeds in the twenty-four hours at 3 months.

I have never been able to detect symptoms of starvation apparently due to three-hourly feeding. The infants suffering from the worst malnutrition I have seen recently were being fed two-hourly, some of them quite regularly, the mother said, and one of them every hour and a half. Scores of infants have been brought to me at hospital or clinic suffering from dyspepsia and loss of weight on two-hourly feeds, who have begun to gain weight the first week after the interval between feeds was changed to three or four hours.

While not wishing to be dogmatic, I am firmly convinced by experience (including residence at a hospital where my bedroom was next the mothers' and infants' wards) that nearly all normal babies make the best progress when kept eight hours at night without a feed from the first, though one or two teaspoonfuls of boiled water may be given if the infant wakes during the first few nights. The habit of sleeping for eight consecutive hours at night is invaluable to mother and baby, and leads to an improvement in the quality of the milk.

I fully agree with Dr. Laing that in infant feeding no hard and fast rule as to quantity is practicable. When consulted as to the quantity to be first given to a baby previously on the breast, I always take the size, weight, and appetite into account. I tell the mother she may need to increase the quantity, if possible keeping to the proportions suggested, till the baby is seen again in a few days.

Space prevents me from giving statistics, but from 100 unselected cards, taking all cases seen by me under a month old, when the interval between feeds was lengthened from two to three hours, I find the average gain in weight for the following months is from 1 lb. to 2 lb. 6 oz. in a month.

S. B. JACKSON, M.D., D.P.H.

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PROFLAVINE OLEATE IN THE TREATMENT OF OPEN WOUNDS.

I HAVE read with interest the paper by Drs. Berkeley and Bonney in your issue of February 8th on the subject of proflavine oleate in the treatment of open wounds. During my work in France for the past two years I have treated all cases of open wounds with modified bipp. The formula for this is: Iodoform 2 parts, bismuth subnitrate 1 part, vaseline 12 parts, and enough hard paraffin to give the preparation the consistency of butter. This is spread thickly on a double layer of gauze and placed over the whole raw surface of the wound, whether flat as a guillotine amputation stump or irregular as a deep ragged wound of the trunk or limbs. This dressing need only be changed every second to fifth day, according to the amount of discharge from the wound. Like the proflavine oleate, it peels off the wound without causing any pain. Occasionally it may cause the granulations to become flabby if used for very prolonged periods, and then it should be replaced by some stimulating preparation, such as Mercière's fluid, which consists of iodoform, guaiacol, eucalyptol, balsam of Peru, of each 10 grams, alcohol 100 grams, ether 1,000 grams.

But at the present time surely no large open wound should be left to close by a gradual and lengthy process of granulation without an attempt being made to close it or at least diminish its size by secondary suture. As a preliminary to this operation, I have found this ointment excellent. It also has the advantages of being moderately cheap, easily made, and non-poisonous, even when used in large quantities and over lengthened periods. The painlessness of the dressings under this method of application is truly remarkable and is enormously appreciated by the worn-out patient.

Dublin.

R. ATKINSON STONEY.

As a result of the ordinance recently issued by the Civil Government of Madrid making vaccination compulsory more than 400,000 persons in the city and province have been vaccinated.

SURGEON-GENERAL MERRITTE IRELAND, Chief of the Medical Corps of the United States Army, and Colonel Walter E. Bradley have been presented by General Pershing with the Distinguished Service Cross in recognition of their services during the war.

Reviews.

WAR PENSIONS

THE time is ripe for the appearance of an authoritative and comprehensive work on pensions written from the medical point of view, and we congratulate Drs. JONES LLEWELLYN and BASSETT JONES on the accomplishment of this in their volume on *Pensions and the Principles of their Evaluation*.¹ The previous experiences of the authors, the results of which were given to the medical world in their book on malingering, has doubtless stood them in good stead in the study of the serious and complicated questions connected with the assessment of war pensions. The war-disabled men in the British forces—we are not sure whether the overseas contingents are included or not—are said to number a quarter of a million, and as in all these cases medical opinion must decide upon the degree of disability and the consequent amount of the pension or gratuity, the value to the profession of a thorough study of the subject must be obvious.

For it is not only the present condition of the patient which must be correctly gauged, but his probable condition years hence must also be estimated. When it is noted that in civil life, according to the German Imperial Assurance Office, twenty-one years may elapse before adaptation to a mutilation is complete, some idea may be formed of the difficulties besetting the medical assessor of pensions. In their historical review of the subject, and elsewhere in the book, the authors draw attention to the unfortunate experience the United States have had of the bad effects of ill-conceived pension legislation, especially when it can be turned to purposes of political corruption. A year after the cessation of the War of Secession there were 126,722 pensioners on the roll, entailing an expenditure of nearly 15½ million dollars, but forty-four years later the number of pensioners had increased to 946,914, and the amount of their pensions to nearly 162 million dollars. There are opportunities and temptations afforded by our own pension regulations that should make us take warning from the United States.

What may be called the lay, or administrative, side of the question is fully dealt with, the different kinds of disability, such as ankyloses, fractures, cicatrices, nerve injuries, injuries of muscles, of joints, and of the anal apparatus, as well as amputations, are adequately considered. A special section on eye injuries, to which we hope to refer later, is contributed by Mr. W. M. BEAUMONT.

In our latest pension regulations the need of discipline seems to have been forgotten in altruistic enthusiasm for the "wounded hero." But it should be remembered that even in voluntary forces there are many unheroic persons and some dishonest schemers. How many more may be looked for under a compulsory system of enlistment! Malingering, denounced in the Warrant of 1829, which the authors rightly describe as "virile," is not mentioned in its emasculated successors of 1917 and 1918, in which it is tacitly assumed that all claims are bona fide, and nearly all pensioners honest. Honesty is a comparative word, and when the terms of a Warrant suggest the reflection that dishonesty is the best policy, human nature is not often likely to resist. A pension once made permanent may only be revised in the direction of increase, and not of decrease. The authors' contention that all pensions should be periodically revised with a view to either increase or decrease seems very sound, as also is their opinion in favour of a much wider use of gratuities in place of pensions. Experience in the administration of the Employers' Liability Acts has established beyond cavil the curative effect of the lump sum in compensation of injuries. A curious anomaly in the regulations is concerned with refusal of treatment. A pensioner who refuses medical or manipulative treatment may suffer reduction of his pension, but he may decline operation with impunity, although it may be practically certain that he would be cured thereby. This appears to be merely a pandering to an ignorant popular fear of "the knife." It is to be hoped that many men who now decline training in

new occupations will later on be persuaded to undergo it, but at present in all the countries concerned a reluctance to be taught and a tendency to try and live on the pension is noteworthy. The authors advise that unreasonable refusal of training should be penalized by diminution of pension.

The chapter on functional adaptation in relation to disabilities is valuable, and we make no apology for transcribing the gist of some of the authors' conclusions:

(1-2) That this biological phenomenon is Nature's own method of compensation.

(3) That its beneficent effects are seen in disease equally with injuries.

(4) That the determination of the degree of its realization shall form an integral part of the process of evaluation, both in cases of compensation and of pensions.

(5) That monetary allowances should continue as long as functional adaptation is incomplete.

(6) Until which time the residual incapacity cannot be estimated; and

(7) That pensions should not be made permanent until that time.

In France a ready-reckoner guide (*guide barème*) to the assessment of disability has been drawn up, which is far more complete and scientific than our own crude schedule, from some of the anomalies of which it is free. The present percentage method of estimating disabilities leads in cases of multiple injuries to glaring absurdities; a remedy for this is proposed by our authors in the shape of a simple mathematical formula to be found upon page 274. We agree with them that instead of the crude method of adding together the percentages of each of several injuries—as, for instance, one Syme's amputation = 50 per cent., therefore two Syme's amputations = 100 per cent., thus arriving at the incorrect result of estimating the disability as total—the disability should be estimated by the functional result. The authorities, however, appear to hold the view that the evaluation of any disability must not be reduced for fear of popular clamour, and therefore the subject of a Syme's amputation will continue to be pensioned at 50 per cent., while the man far worse off, with an amputation a few inches below the knee, will receive no more. The chapters on nerve injuries are full of valuable information and advice; those on amputations are also full and up to date. Few will, we think, be found to approve of the official estimate that loss of the left arm at the shoulder-joint is only equivalent to loss of one lower limb at the hip-joint. In many occupations the subject of the latter mutilation is capable of earning full wages, while the occupations must be few, if any, in which the subject of the shoulder exarticulation can hope to find his earning capacity approaching the normal.

We have touched on a few of the many points of interest in this book, and have said enough to show its interest and value. It is an extraordinarily thorough and painstaking work, and a credit to British medicine. It will probably long remain the standard work on pensions in the language. There are only two midges in the ointment—the index leaves a good deal to be desired in fullness of detail, and no references are given in the text or elsewhere to the various publications quoted.

"WAR SHOCK."

M. A. LÉRY has written an interesting and readable little book, the result of his personal observations on the varied class of war "shock" cases from the aid post to the base. He adopts a very simple classification, and divides shock cases into three classes, the "commotionné," the "confusionné," and the "émotionné," and he has called his book *Commotions et Emotions de Guerre*.² The first two classes include the effects of explosions on the central nervous system. The "commotionné" is the concussion case, which clears up quickly and rarely leaves after-effects. The "confusionné" is a less common case, and on it the prognosis, as the author rightly insists, is much more serious. Symptoms frequently supervene after some hours or even days, and the damage to the central nervous system is considerable. The third class, the "émotionné," is the class to which the term "shell shock" is popularly applied in this country. The author holds that such cases can, with certain necessary exceptions, be dealt with very effectively at the front.

¹ *Pensions and the Principles of their Evaluation*. By Llewellyn J. Llewellyn, M.B.Lond., and A. Bassett Jones, M.B.Lond. With a section on Pensions in Relation to the Psycho, by W. M. Beaumont. London: William Heinemann (Medical Books), Ltd. 1919. (Roy. 8vo, pp. xxvii + 702. 30s. net.)

² *Commotions et Emotions de Guerre*. By André Léry. Collection Horizon. Paris: Masson et Cie. 1918. (Cr. 8vo, pp. v + 196. Fr. 4.)

M. Léri follows these cases from the field to the base, describing their symptoms and treatment in the various centres reached. Without going into detail certain features may be noticed. In the first place, the author very rightly observes that hysterical symptoms may supervene on any one of these classes, and points out forcibly the necessity for those in charge of such cases to search carefully the history of the original shock, in order to appreciate the nature of the trauma and to distinguish it from its hysterical additions. Secondly, M. Léri insists that a careful diagnosis must be made. It is only too true that a proportion of cases in which there is some organic trouble get labelled hysteria or neurasthenia. A complete and thorough examination should be made by all possible means. Lastly, it is refreshing to find that the author considers that the "emotional" case can be stopped on the spot to a great extent. In any case, this type of patient should not get beyond the ambulance area or the special army neurological centre. Only a small minority should be allowed to pass the "barrage" and drift to the lines of communication and base, there to become hospitalized and hopeless.

There is a chapter on the pathology of commotional cases and another on mental diseases associated with war. The book closes with a summary of treatment and of medico-military decisions.

The author gives us a clear and straightforward work, which is well prefaced by Professor Pierre Marie. We would suggest that the book would be enhanced in value by a greater number of illustrations and more detail concerning the French methods of treatment, especially in the emotional class of patient.

THE LIFE AND LETTERS OF JOSEPH BLACK.

It is a fundamental biological doctrine that no organic product can be fully understood until its history is known. Indeed, this statement is but an epitome of that view of evolution which has formed the basis of biological teaching for the last sixty years. Yet until recently few teachers of science have regarded knowledge itself in this light. It is now, however, gradually coming to be recognized that scientific teaching can only attain a philosophic basis by including the history of science. Among the earliest to adopt this attitude was the late Sir WILLIAM RAMSAY, and none who attended his course on the history of chemistry, a subject on which he lectured regularly for many years, will forget the stimulus of his learning, humour, and sympathy.

As a historian of science Ramsay belonged rather to the school of those who seek to trace the development of ideas and principles than of those who love to dwell on the personalities of the heroes of science. In his *Life and Letters of Joseph Black*,¹ which Ramsay has left as a scholarly memento of his historical course, he nevertheless appears in the light of a literary biographer and antiquarian. It is peculiarly appropriate that the modern explorer of the gases of the atmosphere should deal with the work of his distinguished predecessor and countryman. In many respects the men were alike. Both were of Scottish extraction and spent much of their lives as teachers at Glasgow. Both devoted themselves especially to physical chemistry and above all to the chemistry of gases. Both were unusually skilled experimenters and singularly cautious reasoners. The great discoveries of both were led up to by their accurate quantitative repetition of known experimental facts.

Joseph Black (1728-1799) was born in Bordeaux and passed most of his life as a professor of chemistry, first in Glasgow and later in Edinburgh. His most important work was his demonstration of the real nature of carbonic acid gas; he anticipated Lavoisier and laid firm the basis of modern chemistry by his appeal to the balance. His relation with James Watt (1736-1819) and other captains of industry was prophetic of the future of chemical science, and his life may be regarded as the prototype of those who have introduced scientific methods into commerce. In spite of his inspiration as a teacher, Black was an odd, lonely, and somewhat eccentric character, who thought much, wrote little, and left his

papers in a state of great disorder. They were arranged and published by his successor in the chair at Edinburgh, John Robison (1739-1805), but Sir William Ramsay has found much new and instructive material among the traditions, records, and family papers of the great Scots chemist. The book has a number of pleasing illustrations, and among them several entertaining cartoons from *Kay's Portraits*. This posthumous work of Ramsay is a worthy memorial of both author and subject.

NOTES ON BOOKS.

THE *Year Book of Pharmacy*⁴ for 1918 consists mainly of a valuable series of abstracts of current scientific and practical work in pharmacy and the allied subjects, together with an account of the transactions of the British Pharmaceutical Conference in July, and other matters of importance to chemists and druggists. It is a publication indispensable to those interested in pharmacy.

The *Year Book of the Carnegie Endowment for International Peace*⁵ for 1918 dates only from March of that year, a month when the prospects of civilization in Europe were at their blackest. The volume records the steady effort of the Endowment in a cause appearing almost hopeless at that time. This year's volume will no doubt appear under happier auspices. From the same Endowment we have received a volume recording the controversy over neutral rights between the United States and France in the closing years of the eighteenth century.⁶ The volume is of great interest to historians. Read to-day, it illustrates the little service rendered by precedent in the solution of the most recent acute problems of political economies. We have also received a copy of *The American Declaration of Independence, and the Articles of Confederation and the Constitution of the United States*,⁷ another volume that should be in the hands of historians.

The *Yearbook of Scientific and Learned Societies*,⁸ of which the thirty-fifth issue has now appeared, gives a brief record of work done in science, literature, and art during the preceding twelve months, together with information regarding those branches of the civil service which carry out or supervise scientific research. The *Yearbook* is compiled from official sources, and forms a very useful work of reference. The present volume is as complete as any of its predecessors, though the preface records that the difficulty of collating the information has been greater than ever before, especially for the medical section, as so many responsible officers have been absent on war work. A number of societies not previously appearing are included in this edition, and the publications of the Medical Research Committee during 1917-18 are recorded. The entry referring to the British Medical Association gives the officers of the Association and the members of Council.

To those in search of a good and practical account of the best methods of canning and bottling fruit and vegetables we recommend a pamphlet by GOODRICH and KEEBLE.⁹ Here the reader finds not only the practice but also the theory of the art of preserving set out, a great advantage to those who like to understand what they are doing. The experience of the last few years must have made plain to all of us the importance of being able to preserve perishable fruit and vegetables when, as their habit is, they ripen *en masse*, glut the market, and are wasted wholesale. Optimists like to think that preserving will in the near future be an important village industry; in this little book, which may be cordially commended to a wide circle of readers, they may learn the technique of the art.

⁴ *Year Book of Pharmacy*. Edited by J. O. Braithwaite. London: J. and A. Churchill. 1918. (Demy 8vo, pp. 516.)

⁵ *Year Book of the Carnegie Endowment for International Peace*. Founded 1910. No. 7, 1918. Washington, U.S.A.: Head Quarters of the Endowment. (Sup. roy. 8vo, pp. xiv + 272.)

⁶ *The Controversy over Neutral Rights between the United States and France, 1797-1800*. Edited by James Brown Scott, Director, Carnegie Endowment for International Peace, Division of International Law. New York: Oxford University Press. London: H. Milford. (Sup. roy. 8vo, pp. vii + 510. 15s. net.)

⁷ *The Declaration of Independence, the Articles of Confederation, and the Constitution of the United States*. Edited with an introductory note by James Brown Scott. New York: Oxford University Press. London: H. Milford. (Sup. roy. 8vo, pp. xix + 94. 4s. 6d. net.)

⁸ *Yearbook of the Scientific and Learned Societies of Great Britain and Ireland*. Thirty-fifth annual issue. London: C. Griffin and Co., Ltd. 1918. (Post 8vo, pp. 333. 9s. net.)

⁹ *Canning and Bottling*. Simple Methods of Preserving Fruit and Vegetables. By Helen P. Goodrich. With an introduction by F. Keeble, C.B.E., F.R.S., D.Sc. London: Longmans, Green and Co. 1918. (Post 8vo, pp. vi + 70. 2s. net.)

¹ *The Life and Letters of Joseph Black, M.D.* By Sir William Ramsay, K.C.B., F.R.S. With an introduction dealing with the life and work of Sir William Ramsay by F. G. Donnan, F.R.S. London: Constable and Co., Ltd. 1918. (Med. 8vo, pp. xix + 148; 7 plates. 6s. 6d. net.)

British Medical Journal.

SATURDAY, APRIL 5TH, 1919.

THE CLINICAL MEETING NEXT WEEK.

It was in the hope that many overseas medical officers would be able to attend the special clinical meeting of the British Medical Association in London next week that its date was fixed so early as the beginning of April. The invitation is addressed to all overseas medical officers, whether they are members of the Association or not. We understand that notification has been made by the medical directors of these forces that special consideration is to be given to applications by medical officers for leave to attend the meeting. The invitation is addressed equally to all medical officers of the Medical Service R.N., of the Army Medical Service, of the Royal Army Medical Corps, and of the Royal Air Force, whether or not they have yet joined the Association. We understand that the D.G., A.M.S., has notified the Home Commands that special consideration is to be given to applications for leave by medical officers desiring to attend the meeting. Officers of the Medical Corps of the United States Army are also cordially invited to attend. All these officers, as well as all civilian members of the Association who wish to attend the meeting, are requested to fill up the form which will be found in the centre of this week's issue of the JOURNAL, unless they have already filled up and sent in a similar form inserted in previous issues of the JOURNAL. The receipt of this information will greatly facilitate the work of the committees which are making the arrangements for the entertainments and sectional meetings. A registration office will be open in the entrance hall of the Imperial College of Science, South Kensington, from 2.30 to 5.30 p.m. on Tuesday, April 8th, and at 9 a.m. on subsequent days. A card admitting to all meetings of the sections will there be issued, but it is asked in particular that those who wish to attend the reception to be given at the Guildhall by the Metropolitan Counties Branch on Tuesday evening, and that by the Royal Society of Medicine on Wednesday evening, will indicate their preference on the form, and at the same time state whether they wish to attend the Popular Lecture on a "Casualty Clearing Station at Work," by Mr. Cuthbert Wallace, on Wednesday afternoon at 5 p.m., so that seats may be allotted to them. Mr. Wallace, who has recently retired with the rank of Major-General after serving for several years as consulting surgeon with the First Army in France, was the author, with Major-General Sir Anthony Bowlby, of the article on the development of British surgery at the front, published in the JOURNAL in June, 1917, and afterwards republished in the volume, *British Medicine in the War*. The lecture will be illustrated by lantern slides of photographs taken in the forward areas of the British armies in France. The number of invitations that can be issued to the entertainments at the Guildhall and the Royal Society of Medicine is limited, as is also the number of seats available at the dinner at the Connaught Rooms on Thursday evening. The Imperial College of Science, which has been lent to the Association for the

meeting by the Rector, Sir Alfred Keogh, G.C.B., faces the Imperial Institute; the nearest stations are the South Kensington stations of the Underground Railways and of the Piccadilly Tube. There are several lines of omnibuses which run from Charing Cross and Piccadilly to the southern, and others to the northern end of Exhibition Road; the distance on foot from the stopping places is in both cases about five minutes, from the stations a little longer.

In instituting this special clinical meeting the Association has had the cordial approval of the senior medical officers of all the overseas contingents, and of Colonel Whaley, the liaison officer in this country of the Medical Corps U.S.A., as well as of the Director-General of the Medical Service, R.N., and of the Director-General A.M.S. in this country, the Director-General Medical Services in France, and the Air Force. The General Committee of the meeting and the various subcommittees have had the assistance of officers of the overseas contingents. Colonel J. G. Adami, F.R.S., Canadian Medical Head Quarters, London, is indeed chairman of the Programme Subcommittee, and the comprehensive character of the work of the sections is largely due to his wise guidance in the chair. One of the secretaries of the Section of Medicine is Colonel Millard, C.M.G., D.D.M.S., Australian A.M.C., who succeeded Colonel C. T. C. de Crespigny, D.S.O., who has recently returned to Australia; Major A. M. W. Ellis, C.A.M.C., is associated with Dr. Arkwright of the Lister Institute as secretary of the Section of Preventive Medicine and Pathology. At the discussion on influenza, for which the Sections of Medicine and of Preventive Medicine and Pathology will meet together on the morning of Thursday, April 10th, Colonel Haven Emerson, of the Medical Corps U.S.A., will be in the chair, and after Major-General Sir Wilmot Herringham, A.M.S., has dealt with the clinical aspect of the disease, and Captain M. Greenwood, R.A.M.C., with its epidemiology, Major F. B. Bowman, Canadian Army Medical Corps, will discuss its etiology, with special reference to filter-passing virus. A further contribution to this subject, which is at present exciting so much interest both among pathologists and clinical physicians, will be made on Friday, April 11th, in the Section of Preventive Medicine and Pathology, when Major-General Sir John Rose Bradford, K.C.M.G., F.R.S., Captain E. F. Bashford and Captain J. A. Wilson will make a communication on a filter-passing virus in certain diseases, with special reference to polyneuritis, encephalitis, trench fever, influenza, and nephritis; on the afternoon of the same day they will give a demonstration at the Lister Institute, Chelsea Gardens.

Opinions differ as to the probability of the re-establishment of malaria in this country, but there can be no two opinions as to the possibility, since the disease was once prevalent in certain districts, and anopheline mosquitos are known to exist to-day in a good many parts of England and Wales. The difficulty of completely eradicating the infection is well recognized, and the return to civil life of many soldiers who have suffered from malaria in the Balkans or Mesopotamia may conceivably lead to infection of our native anophelines. The fact that there is a possibility of the reappearance of malaria in this country will lend particular interest to the discussion on the subject to be opened in the Section of Preventive Medicine and Pathology on Friday, April 11th, by Lieut.-Colonel S. P. James, I.M.S., who had immense opportunities of studying the subject in India, was sanitary A.D.M.S. of the Indian Expeditionary Force, and is now medical inspector to the Local Government

Board. Sir Ronald Ross, F.R.S., who will take the chair at this meeting, intends afterwards to give a demonstration on the subject with an exhibition of specimens; a demonstration on malaria will be given also at the London School of Tropical Medicine on Wednesday afternoon.

A very special effort has been made to render the work of the meeting as practical as possible, and, as will be seen from the detailed programme inserted in the middle of this and recent issues, a large number of demonstrations will be given in the afternoons, many of them in direct relation to the subjects discussed in the sections. Thus Colonel L. W. Harrison, D.S.O., will open a discussion on venereal diseases in the Section of Medicine on Friday, and will give a demonstration each afternoon at the Military Hospital, Rochester Row; each demonstration will be in three parts—on syphilis, on the prevention of gonorrhoea, and on laboratory methods; each part will last half an hour. Again, the discussion on Friday on prognosis in cardio-vascular affections, to be opened by Dr. Thomas Lewis, F.R.S., in the same section, with Sir James Mackenzie, F.R.S., in the chair, will be illustrated by demonstrations of the newer methods in cardiodiagnosis at the National Heart Hospital, Marylebone, and of cases and specimens illustrating cardio-vascular disease, by Dr. Lewis at University College Hospital. The discussion on war neuroses—with which the Section of Medicine will open its proceedings, when Sir David Ferrier will be in the chair and Lieut.-Colonel F. W. Mott, F.R.S., will open, the discussion—will be followed on a later day by a special demonstration at the Maudsley Clearing Hospital, Denmark Hill. Again, in the Section of Surgery the consideration of reconstructive surgery at the meeting on Friday—when Sir Robert Jones will be in the chair and the subject will be introduced by Majors R. C. Elmslie and W. R. Bristow, R.A.M.C.—will be illustrated by a demonstration of orthopaedic methods at the Special Surgical Hospital, Shepherd's Bush, on that day and on Wednesday. A series of demonstrations will be given at the Royal College of Surgeons, as indicated in the Programme, and on Thursday afternoon the Royal College of Physicians of London will receive those who would like to see the portraits and books at the College, and to hear the President, Dr. Norman Moore, describe some of them.

That the discussions in the sections are all of very present interest is indeed proved by the large number who have signified their wish to take part. In order that all who are desirous may participate and that the material may be presented in the form best calculated to arrest and maintain the attention of the audience, the Programme Committee requests that all communications shall be spoken, not read, and that those taking part in any discussion will keep to the point, confining themselves strictly to the subject matter of the opening address or addresses. These addresses have been forwarded to the secretaries and have been printed and distributed in advance to the participants. It has further been determined that no opening address shall exceed twenty minutes in delivery; that the openers be asked not to read their addresses *in toto*, but to take them as read, and to confine their remarks to such section or sections of the printed address as they consider to need elaboration or emphasis; and that those taking part in the discussions be each granted a maximum of seven minutes for their speeches. The opening addresses in all the sections are being published in a volume—the *Handbook of the Meeting*—which will be on sale in the Registration Room.

TRAINING IN OPHTHALMOLOGY.

"It is notorious," wrote the Ophthalmological Society of the United Kingdom in a memorial it presented to the General Medical Council in 1891, "that the general body of the profession does not possess a competent knowledge of the diseases of the eye." In the report presented in 1917 by the Departmental Committee of the Local Government Board on the Welfare of the Blind this statement was endorsed as still applicable. That this unsatisfactory state of affairs should still exist is not the fault of that branch of the profession which has brought ophthalmology in this country to the distinguished place it holds. Eye surgeons, through their special societies, and through the British Medical Association, have memorialized the General Medical Council on many occasions without attaining any really effective reform. The endeavour of the ophthalmic surgeon has been to secure that within the medical curriculum the student shall have a minimum course of instruction in the diagnosis and treatment of the diseases of the eye, and that the importance of this teaching should be impressed upon him by the setting of questions upon eye diseases at the final pass examinations. In 1879 twenty-four prominent ophthalmic surgeons petitioned the General Medical Council; the Council, upon the advice of the examining bodies, refused to grant the request of the petitioners. In 1906 the lack of knowledge of ophthalmology by the candidates was a subject of comment by the Council's own Examination Committee, and in 1910 the Council had so far awakened to a sense of the situation that it agreed to the somewhat equivocal resolution of its Committee to the effect that while it "did not think it necessary to insist that every student should be examined in ophthalmology," it was yet "of opinion that all students should be liable to be examined in some branch of the subject." In 1911 the British Medical Association urged that ophthalmology should be made compulsory in the curriculum, but, in reply, the General Medical Council merely referred the Association to its report of the previous year.

The serious effects which flow from this deficiency in the training of medical men has recently again been the subject of investigation—this time by the Council of British Ophthalmologists, which is composed of representatives of the Ophthalmological Society, of the Section of Ophthalmology of the Royal Society of Medicine, and of the Oxford Ophthalmological Congress. Its report has just been issued, and it appears from it that the Council judiciously took the course of first investigating the procedure of the many examining boards and universities in this and other countries. This course was the more judicious because it is averred by many that if special provision were made for teaching the student ophthalmology and examining him in that subject the already overloaded curriculum would become unbearably heavy. If this plea were true in fact, we ought to find ophthalmology generally absent as a subject of instruction and examination throughout the world. But it is not. An analysis of regulations of a wide range of universities shows that Great Britain stands almost alone in granting diplomas to practise medicine without evidence of adequate knowledge of eye diseases—there are still three examining bodies which do not even require a certificate of attendance at a three months' course of clinical instruction. In Ireland and in the great majority of foreign universities special courses in ophthalmology, including set lectures and clinical instruction, are prescribed, and it is one of the

subjects of the qualifying examination, the examiners being invariably ophthalmic surgeons.

So much for the practicability of the proposal. The eye surgeons of this country have urged for many years that the regular practice of other countries disproves the assertion as to the student's back being broken by the addition of ophthalmology to his curriculum. It might even be argued that he gained something in method by the thoroughness with which the subject is dealt with by some foreign universities. The Council of British Ophthalmologists is modest in its estimate of what is required. All it asks for is attendance at an ophthalmic clinic for not less than six hours a week during a period of three months, that this period of clinical training shall be supplemented by a course of systematic lectures or clinical classes, and that a stimulus should be given to satisfactory attendance on this course of instruction by the institution of an examination in ophthalmology as an integral part of the qualifying examination by all those licensing bodies which have not hitherto included it in their schedule.

The Council has not been exacting in planning its request, and it is to be hoped that the General Medical Council will reconsider its last decision, that of 1910. There can be no doubt that a knowledge of eye work is indispensable to the medical man. The ability to use the ophthalmoscope, if that were made the sole subject of training, would alone repay all the time that would be expended in this three months' course. Can it be pretended that a medical practitioner is a competent physician who cannot determine whether a fundus is or is not normal? No matter what work the medical man may eventually take up, the ability to see with his own eyes under a high magnification a field of nerve tissue, a great nerve, and a spread of arteries, veins, and capillaries, must always be to his advantage. By no other means can he so nearly investigate the secrets of the body of his patient. Apart from the power given by this means of clinical investigation there is the increasing industrial importance of the eye to be considered. Medical work in modern factories demands a competent knowledge of the minor surgery of the eye, the best means of protecting the eye from injury, and the approved modes of discovering the visual capacity of workpeople. Finally, there is the ever extending field of eye work in the schools. All these circumstances justify the demand for a satisfactory training of the practitioner in eye work; this can best be attained if the work is begun during his student days, and (so long as human nature remains as it is) by impressing upon the student's mind the importance of the subject through his qualifying examination.

While admitting the urgency of the claim for ophthalmology, and the force of the argument drawn from the action of other countries, it must be obvious that the admission of the claim raises a matter of principle which has never yet been adequately discussed. There are other special departments of medicine and surgery in which it is important that the practitioner should have had instruction as a student; and though it may be established that ophthalmology can be taught without overburdening the curriculum, it is clear that the curriculum may be easily overburdened by the addition of other subjects unless it can be lightened in some other direction. The original intention with which the General Medical Council added a fifth year to the previous curriculum of four years was, that this extra year should be devoted to practical experience in the wards, outpatient rooms, and special departments. The claim so well set out by the ophthalmologists renders still

more urgent the consideration of the manner in which the five years in theory and six in practice of the medical curriculum can best be distributed.

INFLUENZA IN INDIA.

THE preliminary report¹ on the influenza epidemic by Major Norman White, I.M.S., Sanitary Commissioner with the Government of India, carries the story down to November 30th, 1918, and it appears that the epidemiological sequence ran parallel with that observed in this country. Sporadic cases of influenza began to be noticed in June (it is noteworthy that some of the earliest cases diagnosed in Bombay occurred on board a transport which reached that port at the end of May) and a widespread non-fatal disease developed throughout India in July and August. In the middle of September the Bombay death-rate began to rise, and the second wave of influenza, which reached its crest in October, caused a havoc to which the Black Death of 1348-49 alone affords a parallel. To obtain a numerical appreciation, Major White has calculated the excess mortality over that of the corresponding period in the previous year, a method which does not overstate the case, because the plague mortality was unusually small in the autumn of 1918. This estimate leads to the conclusion that not fewer than 4,899,725 persons (about 2 per cent. of the whole population) died of influenza or its complications in British India, the vast majority within the space of two months. Making allowance for the native states, not less than six million persons perished in India. The disease, which, at any time within the last ten years, most of us would have regarded as lightly as Sydenham spoke of scarlet fever, in a few weeks destroyed more than half as many human beings as the dreaded bubonic plague killed in twenty-two years.

The explanation suggested for this enormous death roll is that Indians have a low resisting power to pneumonic infection. It is, in fact, not clear that the relative case mortalities from influenzal pneumonia were more unfavourable to the Indians than the ratio normally obtaining; on the contrary, it seems possible that the difference was not so great as usual. Still, it would appear from the military data that the fatality rate for Indian troops was at least three times that found amongst British troops in India, and, in view of the wide dissemination of the materies morbi, this goes a long way to account for the deaths. Another factor was a scarcity of food grains, and especially of fodder, which was responsible for a dearth of milk, both being results of the failure of the monsoon. The extent to which this factor contributed to the mortality is naturally difficult to determine, and the same difficulty exists in interpreting the relation between the European food shortage and our own experience of influenza. No epidemiologist supposes that the origin of the epidemic series was lack of food, but that the world shortage has had something to do with the fatality is not a proposition lightly to be denied.

Major White's observations on the bacteriology of the disease are in accord with European experience, and it remains a moot point whether the earlier failures to isolate Pfeiffer's bacillus and its frequent detection subsequently were due to the use of inappropriate media in the earlier days or really marked a change of type. Work in the Central Research Institute at Kasauli, in which Majors Harvey, Cunningham, and Brown participated, showed that

¹ *The Pioneer Mail*, March 6th.

Pfeiffer's bacillus grew best symbiotically, while Major Greig and Captain Maitra in Karachi found that Pfeiffer's bacillus and the pneumococcus were the only pathogenic organisms constantly met with in fatal cases, an observation also made by Lieut.-Colonel Liston in Bombay. Streptococci, so commonly found in England, were rarely found in India. A mixed vaccine was prepared and issued from the Assam Pasteur Institute, but Major White justly observes, "it must be realized, however, that in the event of a recrudescence of the epidemic, in a form in any way comparable to the last, inoculation would be little likely to confer any appreciable benefit on India as a whole. Epidemics of influenza are as brief as they are severe; they give no timely warning of their coming, and even if we had innumerable doctors ready to start inoculation at the first warning, the epidemic would run its course before we should be able to reach a tithe of the population." This remark has some measure of applicability to home conditions. The evolution of the late secondary wave at home was much more rapid than that of the secondary in the early nineties, perhaps nearly as rapid as in India. The third wave which we have just experienced passed through its phases speedily, and did not attain the height of its forerunner. Major White remarks that the Indian experience afforded evidence of some immunity conferred by a previous attack, and there are English data which point in the same direction, so far at least as the first two waves are concerned. Whether we can count upon this natural immunization to put a period to the disease, or whether a further succession of waves is to be apprehended, are questions we cannot answer.

The history of the last nine months would have given food for thought to the exponent of Hellenic philosophy. We congratulated ourselves, not without cause, upon the relative insignificance of disease on the battle-field and noted the superior destructiveness of human contrivances. We have not had long to wait for the proof that human warfare is but a secondary agent of destruction, and that those who set out to conquer disease have mightier opponents than Ludendorff or Hindenburg, and must face a longer campaign than that of 1914-18.

THE MEDICAL PROFESSION AND NATIONAL SERVICE.

We announced last week that the functions of the Ministry of National Service in the selection and nomination of medical officers for release from the services would cease as from April 1st. On March 28th the Minister issued the following statement: "As the work of the Ministry of National Service will shortly come to an end, Sir Auckland Geddes desires to express his high appreciation of the services which the medical profession have rendered in connexion with the work of the Ministry during the past two years. Letters of thanks have been sent to the chairmen of the Central Professional Committees in Great Britain, expressing his acknowledgement of the work done by these committees, and by the Local Medical War Committees throughout the country. Without the hearty co-operation of the members of these committees, it would have been a much more difficult task to supply the military forces with the numbers of medical officers necessary, while still maintaining any adequate service for the civilian population. These committees have also given valuable assistance in helping to solve the difficult problems involved in the demobilization of medical officers. Sir Auckland Geddes also wishes to thank very heartily those practitioners who have enabled the work of the National Service Medical Boards to be done so well. The very

small proportion of complaints and of sustained appeals which followed the establishment of these boards is an index of the efficient professional work rendered by these medical men. The work has been done in so accurate a fashion as to provide data of the physical condition of the population which will be of the highest value both from the scientific and from the national point of view. The work of the medical profession, both in connexion with the Professional Committees and with the National Service Medical Boards, has been often arduous, and in expressing his thanks on behalf of H.M. Government, Sir Auckland Geddes wishes to assure the members of the medical profession engaged in this work that by their services they have contributed in no small degree to the successful issue of the war." In view of the winding up of the Ministry of National Service, Sir James Galloway has relinquished the duties he has so ably performed as Chief Commissioner of Medical Services; his return to civil practice will advantage Charing Cross Hospital, to which he is senior physician. As already mentioned, it has been positively but not officially stated that Sir Auckland Geddes will accept the offer to become Principal of McGill University, Montreal, in succession to Sir William Peterson, who is laid aside by illness from which his recovery is not to be expected.

THE FOOD PROBLEM.

We recently alluded to the expression of opinion by the Food (War) Committee of the Royal Society that the present state of knowledge respecting the fundamental problems of human nutrition was altogether unsatisfactory. How unsatisfactory it is can be made plain by a simple example. It is common knowledge that in large classes of the community the purchase of food absorbs at least 50 per cent. of the total outgoings. It is equally well known that the energy needs of persons doing different kinds of work are various. Thus, the Royal Society Committee inferred from the experiments of Becker and Hämmäläinen that the needs of a man working as a woodcutter would be precisely double the requirements of the same man working as a tailor. Now it plainly follows that if the man under the two conditions received the same wage and spent the same proportion of it upon food, he would, if adequately nourished as a woodcutter, be transforming energy wastefully as a tailor; or if the diet in his tailoring phase were just adequate, then as a woodcutter he would be living on body capital. But, in the present state of knowledge, these are idle speculations, because, although both incomes and budgets of tailors and woodcutters could be ascertained, we have no right whatever to generalize as to energy needs from the meagre data provided by Becker and Hämmäläinen; yet, with the exception of a very small number of older German, and a still smaller number of French observations, they are the only fairly accurate measurements of metabolism during industrial work which have been published. It is obvious, however, that information of this kind is of fundamental importance in all discussions of the conditions requisite for securing an adequate minimum standard of life in this country. We have tried to ascertain what progress has been made in this country during the past year to remedy this deficit of data respecting the energy needs of industrial work. We cannot learn that outside the army and the munitions factories any progress at all has been made. In the army, we understand, a large number of measurements have been made, and these will ultimately be available. In the munitions factories two sets of investigators have been at work, but neither the time nor means at their disposal have sufficed for more than a few hundred experiments upon about seventy persons. It is further to be expected that neither the army nor the munitions factories will much longer employ so large a proportion of the inhabitants of this country as to make results obtained

in them of general interest. Consequently, unless steps are taken to place the comprehensive study of animal nutrition upon a permanent footing, a future crisis will find the scientific men of the period still endeavouring to make calculations upon the data of a handful of experiments carried out under special conditions. We are under no illusions as to the difficulties to be surmounted in making a permanent provision. The bulk of the work which has to be done is not very attractive, and offers little opportunity for striking personal successes. It must cost a great deal of money, and the man in the street will not be dazzled by spectacular achievements which persuade him that he is really getting value for his money. At the present time, and perhaps for, at most, a few months longer, the memory of past privations, and the description of privations still being endured in other countries, may be sufficient to convince the public that the food problem is an important problem; but the public memory in affairs of this kind is extremely short, and "calories" cannot be much more than a nine days' wonder. We do not know whether depressing reflections such as these have influenced those who were understood to be maturing a scheme of State organization. But it is at least clear that if the matter rests where it is much longer, what little public interest in the subject still exists will have evaporated and the difficulty of getting anything effective done will have become an impossibility. We are glad to find, therefore, that Professor Starling, in a public address last week on food in relation to health, insisted on the need for a Board of Human and Animal Nutrition.

THE SURVIVAL OF TRANSFUSED CORPUSCLES IN THE CIRCULATION.

THE beneficial results of blood transfusion are beyond dispute, but whether they are due merely to the increase of blood volume, to the stimulation of the blood-forming organs by the disintegration of introduced corpuscles, or to some other factor, is still a matter for debate and inquiry. One great difficulty that confronts us is the want of a trustworthy method of estimating the duration of life of corpuscles, native and introduced, in the circulation. The older attempts at partial solution of the problem by the injection of nucleated corpuscles into mammals did not give much information, for, being foreign proteins, they were soon removed. Later experiments by the production of plethora, by intraperitoneal injection of corpuscles, or by the transfusion of blood into previously bled animals, showed that a normal blood count was obtained in from two to four weeks; but such results are not to be relied on, because they take no account of the total blood volume or the probable disturbances produced in the blood-controlling and blood-forming apparatus. Nor is there much to be looked for from the study of stained corpuscles used in injection. An ingenious and simple method of determining the duration of transfused corpuscles has been devised by Winifred Ashby.¹ It depends upon the blood agglutination by group serums. All bloods are capable of being classified in one or other of four groups. In Group I the patient's red cells are agglutinated by the serums of any of the other three groups, but his serum does not agglutinate the cells of any other group; the serum of Group II agglutinates the cells of Group III and vice versa; in Group IV the cells are not agglutinated by any other group serums, whilst the serum of this group agglutinates the cells of all the other groups. Hence blood from a Group IV donor may be given to any recipient, no matter what the classification of his blood may be, because the introduced corpuscles will not be agglutinated, whereas the recipient's corpuscles will be protected from agglutination owing to the very small amount of donor's serum introduced. Now, in the ordinary

method of agglutinating by group serums, we can obtain practically complete agglutination by a suitable adjustment of the corpuscles and serum. There will be a very small percentage of corpuscles remaining unagglutinated between clumps, but this can be determined with sufficient accuracy in each case. If known quantities of an agglutinable and non-agglutinable blood be mixed in a test tube, we can separate them into their respective proportions by using an appropriate agglutinating serum: one will be represented by the number of agglutinated corpuscles *plus* the previously ascertained percentage of unclumped corpuscles, and the other will be represented by the remainder. Applying this to the case of transfusion, we have a means of separating the donor's and the recipient's own corpuscles in the circulation, and of estimating their respective proportions from time to time, provided, of course, that they belong to different blood groups. Thus, before transfusion of a patient belonging to an agglutinable group an initial count was made, using the appropriate agglutinating serum as diluting fluid in the pipette, and the number of unagglutinated cells was determined. Then at intervals after the transfusion of inagglutinable blood (Group IV) similar counts were made, and the very large increase of unagglutinated corpuscles was observed. The number of these present is an index of the amount of transfused blood in the recipient's circulation. If the patient was transfused with blood from his own group no increase nor decrease in the number of unagglutinated corpuscles was found, so that the idea of a non-specific reaction to foreign blood can be eliminated. It was found by such experiments that the corpuscles of transfused blood remained in the circulation for more than thirty days, and all the while they appeared to be in good condition—a point which does not favour the theory that it is the breaking down of these that stimulates the bone marrow; it rather supports the conclusion that the effect on the bone marrow cells is due to the improved metabolic conditions brought about by the larger number of corpuscles in the blood.

FIRST AID FOR TROPICAL RESIDENTS.

PRINCESS CHRISTIAN presided at a meeting on March 27th to inaugurate a course of lectures for the public on tropical ailments and their prevention, including first aid, which has been arranged at the College of Ambulance, Vere Street, London, by the principal, Sir James Cantlie. The course is especially intended for those about to reside in the tropics, and the support of city bankers and firms which have connexions in tropical countries has been enlisted. Sir James Cantlie, at the opening of the proceedings, said that Princess Christian was the mother of ambulance in this country. Her Royal Highness said that she was proud to have held for many years the position of honorary president of the Liverpool School of Tropical Medicine, in the work of which she took the deepest interest. The College of Ambulance was founded four and a half years ago as a technical school of instruction in all branches of ambulance work, and to the date of the armistice, the attendance had been 45,000. In order to establish a memorial to the work done during the great war by members of the St. John Ambulance Association, the council was appealing for a sum of money with which to secure a suitable site and building for the college. She trusted the college would continue to flourish in all its departments of usefulness, especially in the branch of work now about to begin. Sir Patrick Manson, G.C.M.G., followed with a brief address, in which he said that the proposal to found a special system of education in this subject for the non-medical public was a somewhat bold adventure, but a little knowledge used with wisdom could be made very valuable. The climate of the tropics was said to be dangerous, but climate itself did not cause disease; it could be no more than a favouring factor when disease germs and their carriers were present. Sir Patrick went

¹ *Journ. of Exp. Med.*, March, 1919.

on to state, in familiar terms, the elements of hygienic precaution and the methods of the spread of disease, with a word on intermediate hosts. Sir John Goodwin, K.C.B., D.G., A.M.S., said that the scheme was important for those about to live in the tropics, where the sound elementary knowledge which was to be given at the college would prove most practically helpful. He quoted the vastly improved figures as to mortality from enteric and other campaign diseases in the war as instancing the progress which had been made in research and its application. Colonel Badeley, Colonel Andrew Balfour, C.B., and representatives of city firms with Indian and eastern branches also briefly addressed the meeting; and Sir Rickman Godlee, after outlining the object and scope of the lectures, expressed the thanks of the college authorities to Her Royal Highness.

NURSES' REGISTRATION BILLS.

On March 28th, as will be seen from our Parliamentary Notes this week, the House of Commons gave a very favourable reception to the Nurses' Registration Bill introduced by Major Barnett; it was read a second time and referred to a Standing Committee. The bill has been drawn up by the Central Committee for the State Registration of Nurses, representing a number of nursing organizations, together with the British Medical Association. Briefly stated, it proposes the establishment of a General Nursing Council for the training and registration of nurses; its provisions are summarized by our parliamentary correspondent. After many expressions of goodwill on the part of private members of various political parties, including Sir Watson Cheyne and Sir Robert Woods, the Parliamentary Secretary to the Local Government Board, Major Astor, announced that the Government was generally in favour of the principles embodied in the bill. He reminded the House, however, that another bill, which had not been so fortunate in the private members' ballot, was in existence. His reference was to the bill promoted by the College of Nursing, Ltd. That body has lately issued a leaflet criticizing in principle and in detail the bill of the Central Committee, and seeking support for its own measure. "The scope of the Central Committee's bill," it says, "is limited to securing for the nurse the right to call herself a registered nurse, and to have her name on a state register. The College also aims at state registration, with uniformity of standard and the one portal system, but only as an instalment of its wider programme for the betterment of nursing conditions, social, professional, and economic, included in its memorandum of association." The College of Nursing claims that its own bill deals with essentials only and leaves details to be settled by the Privy Council, and that the representation it proposes for a general nursing council is more satisfactory; the financial basis of the Central Committee's bill is also deemed to be inadequate. It is to be hoped that means will be found to reconcile the differences between the rival parties in the nursing world. The difficulty, we have heard, is as much due to conflict of personality as to conflict of principle. Major Astor indicated that the points in the College of Nursing bill would no doubt be considered when the Central Committee's bill came before the Standing Committee, and he added that the shape in which the measure returned to the House would determine the Government's attitude towards it. This must, we think, be taken as a plain hint as to the need for a working compromise.

COURSES FOR MEDICAL GRADUATES AT BRISTOL.

The University of Bristol has arranged a course of clinical demonstrations for medical practitioners. The demonstrations will be given from 2.30 to 3.30 p.m. at the Royal Infirmary and General Hospital, Bristol, alternately, on Thursdays during May, June, July, October, November, and December, 1919. Each will be given by a team composed of a physician, a surgeon, a pathologist or specialist,

and any others who have co-operated in the diagnosis and treatment of the case. Attendants on the course will have the further advantage of admission for medical instruction for one month to any or all departments of the clinical institutions included in the university. The fee for the course and clinical work is three guineas. The first demonstration will be given at the Bristol Royal Infirmary on May 1st, on encephalitis lethargica, and the second on May 8th at the General Hospital, on dermatoses of the face. The other demonstrations in May will be on the diagnosis and treatment of vague abdominal pain, on chronic constipation, and on locomotor ataxia. For the benefit of those able to devote several hours each day to hospital practice the appointment of clinical assistant for a period of one or more months will be open; the same person may act in more than one department and will be entitled to the use of the clinical laboratories and the medical library, and to attend all departments, including operations, post-graduate and ordinary clinical demonstrations, and *post-mortem* examinations. The fee is three guineas a month. All inquiries should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol.

A RESEARCH SCHOLARSHIP FOR MEDICAL WOMEN.

MISS MAUD MARGARET GIBSON has placed in the hands of the Royal Society of Medicine a sum of money sufficient to provide a scholarship of the yearly value of about £250, in memory of her father, the late Mr. William Gibson of Melbourne, Australia. The Scholarship will be awarded from time to time to qualified medical women who are subjects of the British Empire; it is tenable for a period of two years, but may in special circumstances be extended to a third year. In choosing a Scholar, the society will be guided in its choice "either by research work already done by her, or by research work which she contemplates. The Scholar shall be free to travel at her own will for the purpose of the research she has undertaken." There is no competitive examination, nor need a thesis or other work for publication or otherwise be submitted. The society has power at any time to terminate the grant if it has reason to be dissatisfied with the work or the conduct of the Scholar. Applications, with a schedule of the proposed research and accompanied by a statement of professional training and appointments, and by testimonials, one as to academical or professional status and one as to general character, should reach Mr. J. Y. W. MacAlister, Secretary, Royal Society of Medicine, 1, Wimpole Street, W.1, not later than May 3rd, 1919.

STREATFIELD RESEARCH SCHOLARSHIP.

In accordance with the trust founded by Mrs. Eliza Streatfield for the promotion of research in medicine and surgery, a committee of the Royal College of Physicians of London and of the Royal College of Surgeons of England is proceeding to appoint a Streatfield research scholar. The emolument will probably be £250 per annum, and the tenure of the scholarship three years at the discretion of the committee. Applications, which should state the nature of the proposed research, the place where it will be carried out, and the status of the applicant, should be addressed to the Registrar, Royal College of Physicians, Pall Mall East, S.W.1, and marked "Streatfield Scholarship."

News has been received from South Australia of the death of Sir Edward Charles Stirling, C.M.G., M.D., F.R.S., Professor of Physiology in the University of Adelaide, and Director of the South Australian Museum, whose contributions to the anthropology and zoology of Australia are well known to all interested in those sciences. He was President of the South Australian Branch of the British Medical Association in 1889.

We regret to learn of the death, on April 2nd, of Sir James Mackenzie Davidson, M.B., C.M., who did so much to place the use of the x rays on a sound basis.

We regret to record the death, at the age of 68, of Dr. William Allen Sturge. After his retirement from practice he gave himself to the study of prehistoric man, and formed a fine collection of stone and bronze weapons. We hope to publish an account of his life in an early issue.

MEDICAL officers and members of the Association attending the Special Clinical Meeting in London are informed that the room for registration at the Imperial College of Science, South Kensington, where any information required will be obtainable, will be open from 2.30 to 5.30 p.m. on Tuesday, April 8th, and again at 9 a.m. on Wednesday, April 9th. It is hoped that as many as possible will take the opportunity of registering on Tuesday afternoon, as this will facilitate all the arrangements. Cards of invitation to the reception arranged by the Metropolitan Counties Branch, to be given on Tuesday evening (8 p.m.) at the Guildhall of the City of London, lent by the Lord Mayor, will be available in the registration room for those who have not previously received an invitation.

Medical Notes in Parliament.

Ministry of Health Bill.

APPLICATION TO IRELAND.

THE consideration of the Ministry of Health Bill was concluded in Standing Committee on March 27th, when Sir Archibald Williamson presided. The Attorney-General for Ireland (Mr. Arthur Samuel) submitted, in substitution for one previously on the Order Paper, the following new clause to apply the bill to Ireland:

1. For the purpose of promoting the health of the people in Ireland and exercising the powers conferred on him by this Act the Chief Secretary shall be the Minister of Health for Ireland, and it shall be his duty as such Minister to take all such steps as may be desirable to secure the effective carrying out and co-ordination of measures conducive to health, including measures for the prevention and cure of diseases, the treatment of physical and mental defects, the initiation and direction of research, the collection, preparation, and publication of information and statistics relating thereto, and the training of persons for health services.

2. The provisions of this Act with respect to consultative councils shall apply to Ireland with the substitution therein of the Lord Lieutenant for His Majesty, and with the addition of the following provision:

For the purpose of giving advice and assistance and making proposals to the Chief Secretary in connexion with his powers and duties under this Act a council shall be established (which shall be called the Irish Public Health Council) consisting of the following persons:

- (a) The Vice-President and the two other Commissioners of the Local Government Board for Ireland;
- (b) The chairman and such two others of the Irish Insurance Commissioners as may be nominated by the Chief Secretary;
- (c) The Registrar-General of Births, Deaths, and Marriages in Ireland;
- (d) A registered medical practitioner, who shall act as chairman of the Council under the direction of the Chief Secretary, and three other registered medical practitioners, one of whom shall be a woman, and one of whom shall be a medical practitioner who is registered on the *Medical Register* in respect of a diploma in sanitary science, public health, or State medicine;
- (e) Six other persons having practical experience of matters relating or incidental to or affecting the health of the people.

3. The Chief Secretary shall from time to time nominate the persons who are to be members of the Irish Public Health Council.

4. The expenses of the Chief Secretary and of the Irish Public Health Council under this Act, including such reasonable compensation to members of that Council for loss of remunerative time, shall be paid in like manner as the expenses of the Ministry.

5. Save as aforesaid, or as otherwise expressly provided in this Act, the foregoing provisions of this Act shall not apply to Ireland.

Mr. Samuel said that the intention was to have as chairman of the council under the direction of the Chief Secretary a registered practitioner who would devote himself exclusively to the work, and be convener of the council. It was intended that he should be paid a salary, or remunerated in some adequate way. There would be six representatives in addition to the four medical members, so that there would be ten non-official members. It would be open for women to be members. The desire was to make this Health Council thoroughly effective in bringing about a real reform in public health in Ireland.

Captain Craig said it had been suggested at the conference of Unionist members that while the Chief

Secretary should be Health Minister for Ireland, some other individual should be appointed to give his whole time to the subject, and that he should be called the Irish Health Commissioner, and be the real health authority for Ireland, with advice from the Council. It should be stated plainly that there should be an official to do all the health work to be done in the name of the Chief Secretary.

Sir Robert Woods said that what the Irish members had been most anxious for, and what they had succeeded in obtaining, was to ensure that the health service for Ireland, instead of being relegated to an already over-worked department, should be placed under one central authority. The proposal would serve as a beginning a peg on which to hang proper and efficient administration of health matters in Ireland.

Sir William Whitla reminded the Committee that in the English bill had been inserted the provision that amongst the other duties of the Ministry should be the initiation and direction of research work. He hoped that the same definite statement would be made in the Irish clause.

Mr. Devlin said he would have preferred that a Health bill for Ireland should have been drafted in consultation with Irish medical opinion, and in consultation, too, with the formed opinion of all sorts in that country, but he understood that the present clause was the result of the joint wisdom of the council of ten Unionist members, and he noted that it included practically all the amendments that he had proposed.

THE INTENTIONS OF THE MINISTRY.

Mr. Locker-Lampson then submitted the first of several proposed new clauses as to matters to be taken up by the Ministry. The first proposed that the Minister should have power to set up a standard for different grades of milk and to make regulations for its delivery in sealed bottles. Dr. Addison asked leave to make a general statement as to the intentions of the Ministry. It was thought desirable that legislative matters relating to the alteration of existing local health services or local administrative bodies should be kept apart from the bill because it was proposed as the next stage in the development of health policy to submit to Parliament proposals of a very far-reaching character relating to these matters. If, for example, the question of tuberculosis was to be dealt with, the proposal should deal with tuberculosis as a whole as far as possible. For that reason he submitted that the new clause in regard to the distribution of milk was not appropriate to the bill. It was clear that other departments, such as the Ministry of Food and the Board of Agriculture, were concerned. It was necessary to disentangle the medley of powers in respect of milk. His remarks were designed to apply to all the proposed new clauses, as, for example, those relating to the Poor Law and voluntary hospitals.

Sir Ryland Adkins said that the County Councils Association was of opinion that these matters should not be dealt with in connexion with this bill.

Lieut.-Colonel Raw said the country would be disappointed if Parliament did not deal with such questions as the milk supply, the separation of the Poor Law from voluntary hospitals, the subsidizing of voluntary hospitals, and the placing of the whole hospital system on a uniform and more democratic basis, but he would willingly withdraw the amendments with which he was concerned if the Ministry gave an assurance that these urgent questions would be dealt with at the very earliest possible moment.

Mr. Locker-Lampson then withdrew his amendment.

DISTRIBUTION OF GRANTS TO LOCAL AUTHORITIES.

Mr. Locker-Lampson then moved the following new clause:

If any local authorities do not within a reasonable time avail themselves of moneys or means, or any portion of them placed at their disposal by or through the Minister, the Minister may distribute or utilize such moneys or means, or any portion of them, as he may think fit.

He said that in the Housing Bill Dr. Addison was taking power, if the local authority did not carry out a scheme, to take the scheme out of its hands and charge it with the expense of completing it. The present proposal was on the same lines. The Local Government Board, in its recent annual report, admitted that there were several local authorities which had not made arrangements for nursing assistance in severe cases of measles, although that disease had been compulsorily notifiable since January 1st, 1916. It was also shown in connexion with the outbreak of small-pox in London in March, 1918, that the Local Government Board had to write to certain sanitary authorities requesting them to exercise their powers under the regulations. Again, on the subject of maternity and child welfare, the report showed that

Camberwell and Gateshead, where there was a heavy infantile mortality, were for a long time uninterested, while Hampstead and Peterborough had made no provision whatever. The clause simply said that if the local authorities refused to make use of grants within a reasonable time, the Minister should have power to carry out the scheme himself, and charge the local authorities with them.

Dr. Addison sympathized with the proposal, but said that the proper way of dealing with the matter would be in the way in which it was dealt with in the Housing Bill. He could not, however, venture to suggest that he should have quite such freedom of action as the new clause would confer upon him. The clause would practically give the Minister power to do what he liked with the money the local authorities did not spend. He was not sanguine enough to think that either Parliament or the Treasury would sanction that course, but he would, if the amendment were not pressed, see what could be done.

After further discussion the amendment was formally negatived.

NATIONAL HOSPITALS.

Mr. T. Griffiths (Labour, Pontypool) moved the following new clause, for which he said the Labour party was responsible:

It shall be the duty of the Minister to establish a system of national hospitals and other institutions for the treatment of the sick and disabled, including the nationalization of such existing institutions dependent upon voluntary contributions for their maintenance.

He said that the Committee would appreciate the splendid work performed by institutions and hospitals through the aid of voluntary subscriptions and the services rendered by the medical profession. He considered it very unsatisfactory that the injured and stricken should be dependent on voluntary aid for their restoration to health.

The Chairman said that the proposal would involve a charge on public funds and the clause therefore was out of order.

SCHEDULE 1.

On the motion of Sir Philip Magnus, the first schedule to the bill, which enumerated certain out-of-the-way matters as transferable from the Ministry to other departments, was left out.

End of Proceedings in Committee.

At the close of the proceedings Major Astor, in the absence of Dr. Addison owing to indisposition, thanked the Committee, on behalf of the Minister and himself, for getting this measure through in record time.

Nurses' Registration Bill.

Major Barnett, on March 28th, by good fortune of private members' ballot, moved the second reading of the Nurses' Registration Bill. He recalled that in 1905 a Select Committee of the House of Commons reported in favour of the State registration of nurses, that in 1908 a bill similar to that now presented was passed through the House of Lords without division, and that in 1914 the House of Commons gave a similar bill a first reading by a majority of 228. The intervention of the war prevented private members from getting facilities to carry the measure further. At present there was State registration in South Africa, in four provinces of Canada, in Queensland, and in the Bombay Presidency. The principle was in force in forty-six of the United States of America. It had also been adopted in Belgium. The central committee of various bodies which was responsible for drawing up the present bill came into existence in 1910. It represented by delegation the British Medical Association, the Royal Nurses' Association (under royal charter), the Matrons' Council of Great Britain and Ireland, the Society for the State Registration of Trained Nurses, the National Union of Trained Nurses, the Fever Nurses' Association, the Scottish Nurses' Association, and the Irish Nursing Board.

The bill proposed to establish a general Nurses' Council, to consist of: (1) Crown representatives, appointed by the Privy Council; (2) a certain number of medical practitioners nominated by the Local Government Board (hereafter by the Minister of Health); (3) certain medical practitioners nominated by the British Medical Association; (4) persons elected by registered trained nurses, and consisting partly of matrons and partly of trained nurses; (5) representatives of the nurses' training schools; and (6) of the lay element, which should not be dominant. The General Council could not be created at once because it depended on the electorate, which could only be created through the Register. Hence it was intended to have a provisional council, to hold office for two years, and in that time to draw up rules and regulations which would not have effect until approved by the Privy Council. There was provision for setting up divisional boards for England, Scotland, Wales, and

Ireland. These boards would hold examinations under the curriculum established by the General Nursing Council, and would inquire into the character and status of all applicants for registration. For those already in the occupation there would be a period of grace of three years during which they could claim registration. Persons holding certificates from the Admiralty or from the Army Council would be entitled to registration. The bill contained provisions for the registration of persons holding certificates from the Local Government Boards of Scotland and Ireland, and to ease the admission of those who had followed for at least three years the bona fide practice of a nurse. Registration would not be compulsory, but no man or woman would be able to describe himself or herself as a registered nurse unless registered. The effect of the scheme would be that the qualification would be somewhat stiffened up after the three years. There would be supplementary registers of male nurses and of mental nurses, classes which had a different training. It was estimated that there were at the present time in the United Kingdom 80,000 practising nurses, and that 50,000 would register in the first year at a fee which it was suggested should be two guineas. The sum of 100,000 guineas invested would give 5,000 guineas of income with safety. This, with the new fees coming in and with the examination fees, which it was suggested should be from one to three guineas, would be sufficient to carry out all the purposes of the Act.

Mr. Briant, in seconding, said that from his experience in London work he was more and more convinced that the step proposed was right. The Ministry of Health would never carry out its functions as efficiently as it desired to do unless it had a far larger supply of nurses in the future, and these nurses needed to have a definite status.

Sir Donald MacLean supported the measure as an almost necessary complement to the Ministry of Health Bill. He thought it should be taken up by the Government.

Major Molson, as a medical man, supported the bill, holding that it should be passed even more in the interests of the public than in the interests of the nurses. He had served in the war in the East, and found that one of the greatest difficulties in the hospitals in India was that there were so few nurses. The whole of the medical profession was in favour of securing a good nursing standard.

Mr. Lyle also supported the bill, though holding that certain matters, as for instance the proportionate representation on the Council, would need to be carefully considered in Committee.

Lieut.-Colonel Raw gave similar support to the measure, and Mr. F. Roberts joined on behalf of the Labour party in the note of approval.

Mr. Gardiner, speaking of the subject as it affected the sparse population of Scotland, said that in one particular part of his own constituency the nearest doctor was forty-two miles away, and there was no nurse resident within any part of that area at present. Therefore the question was urgent, as it was not desirable that any one who only happened to wear a nurse's uniform should be admitted to the homes of the people.

Sir Robert Woods, as one of the Irish medical members of the House, was glad to give expression to the feeling of relief felt by nurses and medical men in Ireland that this bill was being proceeded with.

Sir Watson Cheyne urged that the Government should adopt the bill. Such success as he had had was, he said, largely due to the little band of splendid and loyal nurses he had gathered around him. Nothing relieved a surgeon's anxiety more and enabled him to concentrate on the important parts of his work than to know that he had at hand skilled nurses. The nursing profession must be made more attractive by giving it a better status and better remuneration. Recently in connexion with one of the military services he learned from one of the best theatre sisters he had ever met that she was getting £15 a year and that for messing and clothing she had to pay £39, so that all she had in the way of pocket money and for provision for old age was £5 a year. Objection had been taken that a registration would not necessarily imply good nursing qualifications. But the same objection might be made as regards the registration of doctors or any other body of people who were registered as fit for a profession. The register would show that the nurses had had such and such training, had passed an examination, and had been considered of good character. They could not say any more of a doctor than that he had passed the minimum number of examinations required to register, and that did not imply that he was a first class doctor or of any high character, but nevertheless it was an extremely important thing, and the register would show that for a period to be fixed the nurse had been training and exhibited a certain knowledge of her profession. It was said that years afterwards there would be no guarantee that the nurse had the same knowledge. He thought it probable that she would have a great deal more. It was assumed that with age and experience a doctor improved, and the same arguments would hold good as regards nurses.

Mr. W. Graham, as a member of the Labour party, also supported the bill, and, speaking as a Scottish member, referred to the remuneration given by some of the public health authorities in Scotland. The rate could not be defended, and he would like to see a minimum established and enforced. That would be in keeping with the policy of the British Medical Association in its own sphere. Local authorities could not engage medical men unless they were prepared to pay up to a certain standard.

Mr. Rawlinson said he would not oppose the second reading of the bill, though he was not certain that the object could not

be secured by methods other than those indicated. He submitted that the real question was whether a central body should make a person eligible or not, or whether the hospitals would license persons to wear the uniform of that particular hospital.

Major Astor (Parliamentary Secretary of the Local Government Board) said the Government was generally in favour of the principles contained in the bill. Members were aware that there was another bill, the backers of which had not been so successful in respect of the ballot. Points in that other measure would doubtless be considered when this bill went before the Standing Committee. The Government's attitude towards it must depend upon the shape in which the measure returned to the House.

The bill was then read a second time and referred to Standing Committee.

Venereal Disease.

In the House of Lords, on April 2nd, Lord Willoughby de Broke initiated a debate on the spread of venereal disease and the possibilities indicated by recently acquired knowledge in regard to disinfection. Many, he said, were in favour of a renewal of State regulation, but he quoted authorities to show that, even if recourse were had once more to that system, all the difficulties would not have been surmounted; medical examination, for instance, must, in the circumstances, be far from perfect. The time might not be far distant when engaged couples might be expected to exchange certificates of good health. The situation must, however, be dealt with as it was. The opinion of the Royal Commission was against compulsory notification, which was therefore omitted from the Ministry of Health Bill, though he understood representations would be made to that Ministry requesting further consideration of this point when the bill came on report before the House of Commons. Both the preventive and curative methods of treatment would thus come under notice. Rapid strides had been made in the diagnosis and cure of syphilis, and the prospects for sufferers enormously improved. On the other hand gonorrhoea was recognized as one of the most intractable diseases. As to both conditions the greatest emphasis was placed on the value of disinfection, previous and subsequent to risk. The question might be raised whether the medical profession were ethically justified in providing beforehand against risks to be subsequently incurred. For his part he was unable to draw a distinction in this respect between treatment before and after, especially when it was remembered that many innocent persons might be involved. The suggestion had been made that, now a Ministry of Health was being established, it might be the duty of the medical officers to furnish such information as should be at the disposal of the individual to prevent the spread of this disease. He commended the subject to the serious consideration of the Government, and formally moved to that effect.

Lord Sydenham, in a speech of marked moderation, indicated agreement with what had been said as to the value of disinfection, but quoted authorities to show that scrupulous care would have to be exercised in the employment of the methods suggested. He reminded the House of the difficulties in this connexion, aggravated in so many cases by the intoxicated condition of the victims. Only partial security could be looked for, and the facilities would, in his view, tend to increase recklessness, so that there would be no better result than hitherto. American opinion, he said, was dead against the use of prophylactics, the United States Government being unwilling to sanction it, even if urged to do so by the medical profession. British public opinion would, he believed, take the same attitude.

The Archbishop of Canterbury expressed his appreciation of the excellent motives prompting Lord Willoughby de Broke to raise the question, but he adhered to the view that the medical and moral aspects of the problem could not be separated, and that there were moral objections to the course suggested. He held, too, that the proposed methods were out of harmony with modern legislation, because they would tend to the encouragement of self-treatment on the one hand, and resort to the quack on the other—the least desirable of health legislation.

Lord Burnham said the information given by Lord Sydenham as to the American army was misleading. He had lately spent some time with the American armies in France, and learned that there was a prophylactic station in every little village in which was a detachment or platoon of American soldiers, with the result that venereal disease in the American forces had been reduced to 0.1 per cent. These measures had been carried out without the smallest objection by any ministers of religion. Lord Downham (formerly President of the Local Government Board) said it was impossible for the Government to adopt any other policy than that now being carried out. During the last year 55,000 cases had been treated at 120 centres.

Lord Sandhurst, for the Government, promised to draw the attention of the Local Government Board to what had been said; but he reminded Lord Willoughby de Broke that the authorities differed greatly as to the wisdom of applying the principles he had recommended in the way suggested. The methods now being adopted by the Local Government Board were (1) educational campaign—medical, social, moral; (2) effective co-operation with the military authorities; and (3) free facilities for prompt diagnosis provided at the venereal centres.

Lord Willoughby de Broke accepted the assurance of Lord Sandhurst that what he had said would be considered, and withdrew his motion.

Tuberculosis: Interdepartmental Committee.—Major Astor, on April 1st, after stating in reply to Colonel Ashley that the number of ex-service men suffering from tuberculosis awaiting sanatorium treatment on February 28th was approximately 410, announced that the Interdepartmental Committee appointed to report on the subject would consist of representatives of the several departments concerned and of some members of the House of Commons. He had been asked to be chairman. In answer to Mr. J. H. Thomas, Major Astor acknowledged that there was a far longer waiting list of civilian tuberculous people. He claimed, however, that the Local Government Board was taking every step to encourage the provision of institutional treatment.

Army Officers under Treatment for Tuberculosis.—In reply to Sir Watson-Cheyne, on April 1st, Captain Guest said that the number of officers discharged on account of pulmonary tuberculosis since August 4th, 1914, of which the Ministry of Pensions had record, was 615. All but twenty, who had not accepted, had been given treatment. The number of ex-officers at present under treatment was 449, made up as follows: In sanatoriums, 152; convalescing at the coast or in the country, 41; under treatment at home, 256.

Artificial Limbs for Officers.—In reply to Major Cohen, Sir L. Worthington-Evans said, on March 27th, that the regulations as to the supply, repair, and renewal of artificial limbs for discharged sailors and soldiers would be extended to all retired officers, with the result that every retired officer would be supplied with the artificial limb he required, and also with an additional limb as soon as the stump was ready to receive it, and the supply was available, without charge. The Ministry would also undertake all repairs and renewals of limbs.

The Medical Re-examination of Wounded Soldiers.—Major Newman asked, on March 31st, whether it was with the authority of the Pensions Minister that wounded men, on re-examination by medical boards for adjustment of pensions, were asked whether they were working, whether they were following their own trade, how long they had worked, and whether their disability affected their earning capacity. He suggested that in many cases the pensions of men giving truthful answers were reduced, while those of men who gave misleading answers were maintained. Sir James Craig replied that some of the questions referred to were put by medical boards, but they were instructed to inform each man that if he preferred not to answer he need not. The insinuation made by Major Newman could not be accepted. The assessment of the pension was based solely on the degree of physical disablement. No doubt it was often the case that a man found his pension cut down when he next went before a board. But that was due to the improvement in his physical condition. It often assisted the Board to have the right to ask the men what their work was at the present time.

The Training of Blind Soldiers.—Sir James Craig, in reply to Mr. Aneurin Williams, on March 31st, said that under the Royal Warrant charges in respect of the training of a disabled man might only be paid for by the Ministry of Pensions if they were not otherwise provided for. As it would be hardly possible to improve upon the training given at St. Dunstan's Hostel, and at Newington House, Edinburgh, no occasion arose for making other provision. The present arrangement was to the advantage of the men, as it enabled their allowances to be paid to them in full, without deduction for the cost of maintenance.

Disablement Pensions and Tuberculous Soldiers.—Sir Arthur Shirley Benn asked, on March 28th, whether when a soldier, who had previously been a clerk, was given a pension on account of tuberculosis a sufficiently high pension was given that he should not have to return to clerical work. Sir L. Worthington-Evans said that disablement pensions were granted only to the degree of physical disablement, without regard to occupation. But if it were dangerous for a man to resume his pre-war occupation he might be trained for a new one. During training he would receive allowances equal to the highest rate of pension, or if more favourable to him, allowances based on his pre-war earnings. If when trained he found his pre-war earnings lessened so as not to provide adequate compensation he might be eligible for an alternative pension.

Sanatorium Benefit Expenditure.—Major Astor, in a written answer, on March 31st, confirmed Sir Kingsley Wood's statement that the London Insurance Committee in their estimates for 1919 showed a prospective deficiency of £33,480 in the funds for sanatorium benefit.

Vivisection.—It was mentioned last week that the Dogs Protection Bill, intended to prevent experiments for medical research on dogs, introduced by Sir F. Banbury, was read a second time on March 21st, and sent to a Standing Committee. On March 27th "a bill to prohibit the vivisection of the higher animals" was introduced by Mr. J. Cathcart Wason (Orkney and Shetland), supported by Colonel Burn (Torquay) and Sir Henry Cowan (Aberdeen, E.). The bill seeks to prevent any experiment, inoculation or demonstration upon any dog, cat, horse, mule, ass, monkey, ape, or baboon.

The United States Senate has passed a resolution appropriating £20,000 to provide Government aid in combating influenza.

GRADUATE MEDICAL EDUCATION IN LONDON.

THE scheme for the establishment of a Post-Graduation Association in London, which has been under consideration for some time, was recently approved at a meeting of representatives of post-graduate schools and special hospitals. The draft was sent to the individual bodies for their approval. A financial subcommittee and an organizing subcommittee have been appointed to prepare plans and estimates. A public meeting will probably be held at the Royal Society of Medicine on the afternoon of April 29th, at which the President of the Board of Education, Mr. H. A. L. Fisher, will, it is hoped, take the chair.

A SCHEME FOR POST-GRADUATE MEDICAL EDUCATION APPROVED BY THE LONDON MEDICAL SCHOOLS.

I. INTRODUCTION.

A. A Post-Graduate Association is required in order to meet the large demand for teaching from the following classes of medical graduates:

1. General practitioners in Great Britain who would like to spend a portion of their holidays in getting up to date in all branches of their work, or who wish to spend a few months in learning all that they can about some particular subject in which they desire to specialize, either completely or in conjunction with general practice.

2. Medical officers of the Royal Navy, the Royal Army Medical Corps, the Royal Air Force, and the Indian and Colonial Medical Services, who have to attend post-graduate courses at stated intervals.

3. Graduates from British colonies, India, and Egypt, including those who have recently qualified and wish to complete their medical education in England, and some senior men who fall into the same category as the men in Class 1, but who are prepared to devote a longer time to the purpose than English practitioners.

4. Graduates of allied countries, especially Americans, large numbers of whom have in the past studied in Germany and Austria, in many instances simply because they were unable to obtain equal facilities in England, as well as the French, who have hitherto rarely studied abroad, and the Japanese.

B. Hitherto post-graduate teaching in Great Britain has not been encouraged in the medical schools, because the majority have considered that their first duty was to teach their own undergraduate students, and have therefore given very limited facilities to graduates.

C. It should now be recognized that, although the teaching of undergraduate students must not be allowed to suffer, the claims of graduates should also be considered, in order to promote the efficiency of the medical profession throughout the British Empire.

D. The co-operation of America and France should be secured. This could best be done through the recently organized American Post-Graduate Union and the Committee of the Société Médicale des Hôpitaux de Paris on "Medical Education in the Hospitals for Foreigners."

II. SCHEME FOR GENERAL AND SPECIAL POST-GRADUATE COURSES.

(a) In the Existing London Undergraduate Medical Schools.

All of these schools have agreed to provide the following post-graduate instruction:

1. *General Courses.*—Each medical school will provide annually two courses of post-graduate teaching each of a fortnight's duration or one course of a month's duration at the discretion of the individual schools, a succession of periods being arranged so that such teaching is obtainable throughout the year. The dates of the courses at each school will vary from year to year, so that more or less convenient periods will fall to different schools in different years. The rota should be drawn up in such a way that each school may know the dates for its courses for the next three years.

Each school, after inquiring from its teachers what instruction or courses they are prepared to give, will be asked three months in advance to draw up a programme which will give opportunities for study throughout the working day in the subjects included in the courses, and will decide how many students can be admitted to each course.

2. *Special Courses.*—Special courses will be arranged in the schools where a graduate may have the opportunity of deeper study in any particular subject. Such courses will usually last for not less than three months, and it may

be advisable that different parts of the courses should be carried on at different institutions. The special courses should be as comprehensive as possible. For example, a course in "disorders of digestion" might include:

- (1) Lectures by an anatomist, a physiologist, pathologist, radiographer, physician and surgeon.
- (2) Clinical teaching on cases in the wards and out-patient departments and on other cases collected by the teacher from his wards or out-patient departments during the previous six months.
- (3) Practical instruction in the x-ray investigation of disorders of digestion by the radiographer.
- (4) Practical instruction in chemical analysis of gastric contents and faeces by the clinical chemist.
- (5) Practical instruction in bacteriological and microscopical examinations of faeces by the pathologist.
- (6) Demonstrations on museum and post-mortem specimens by a demonstrator of morbid anatomy or any other physician interested in the subject.
- (7) Demonstrations on the use of the sigmoidoscope.
- (8) Opportunities for seeing operations on cases already investigated by the students.

3. *Research Work and Clinical Assistantships.*—After having attended such a special course, a graduate may apply to the teacher responsible for the courses for permission to do research work under him or to act as his clinical assistant for a further period. For example, a graduate interested in children's diseases or orthopaedics, after attending a course on one of these subjects could then, if he is regarded as sufficiently qualified, stay on at the hospital as clinical assistant and do research work under the physician for children's diseases or orthopaedic surgeon respectively. At the same time he could spend an hour or two each day in following the courses given on these subjects during successive fortnights at the different schools and special hospitals. He would thus get quite exceptional opportunities for study.

4. *General Hospital Practice.*—Facilities will be afforded for students to attend the ordinary hospital practice of the medical schools.

(b) In the Existing London Post-Graduate Schools and Special Hospitals.

Those which have given post-graduate instruction in the past will continue to do so in co-operation with the other teaching institutions working with the association. There will be no limit placed on the duration of their courses of instruction, which may continue throughout the year.

(c) Provincial, Scottish, and Irish Schools.

The medical schools of the United Kingdom will be invited to co-operate with the London Association in providing periodic courses of instruction for graduates, which would run concurrently with those of the former, especially at times, such as the summer months, when the number of graduates would probably exceed the number who could be adequately dealt with in London.

(d) The British Association of Radiology and Physiotherapy has agreed to co-operate.

(e) It is hoped that arrangements may be made to utilize for teaching purposes the unique collections of the Royal College of Surgeons and the clinical facilities of metropolitan asylums, fever hospitals, and Poor Law infirmaries, and opportunities should be given for the study of public health and forensic medicine.

III. THE CENTRAL ORGANIZATION.

1. The Council of the association will consist of representatives of all participating teaching institutions, and representatives of the Board of Education, the National Health Insurance (Medical Research Committee), the Dominions, and United States of America. The number of representatives of the twelve London schools serving on the Council shall not be less than the total number of representatives of the other bodies. Care should be taken to arrange for representation of subjects taught as well as of institutions.

2. Steps will be taken to frame such a constitution for the association as will render it competent to hold property and to receive a grant from the Board of Education.

3. The Council of the association will have power to appoint an executive committee and such other administrative committees as may be necessary. The permanent whole-time officers and secretarial staff of the association will be appointed by the executive committee.

4. The home of the association will be a building in central London. It will contain the offices of the permanent (secretarial) staff, together with a library, recreation room, and luncheon and tea rooms. A suitable and well equipped building would become the meeting place for the medical graduates of the empire and allied nations.

5. The permanent secretarial staff of the association will co-operate with the teaching institutions in organizing the courses of instruction, and will issue the necessary advertisements, receive the fees, and arrange for the admission of students to the different courses in conformity with the number of students for which each is open.

IV. FINANCE.

1. The participating schools will be under no financial liability in connexion with the scheme.

2. It is hoped that sufficient money will be forthcoming from private donations to provide for the erection and equipment of the building and some endowment towards its annual maintenance.

3. Each student on admission will be required to pay a registration fee, which will go towards the support of the association, apart from the fees payable for the courses of instruction. It is proposed to apply to the Board of Education for a grant sufficient to make the association self-supporting.

4. As any grant from the Board of Education will be paid to the association, the medical schools will not receive any direct Government grant for post-graduate education, and will therefore only be responsible to the association for the instruction they undertake to give.

5. The fees payable for the various courses will be decided by the Executive Committee in consultation with the individual schools, the object being to maintain as nearly as possible a uniform standard.

6. Each participating school will undertake to give no organized post-graduate courses independently of the central organization, with the exception of classes for special examinations.

7. The income of the association would thus be derived from:

- (i) Interest for endowment fund,
- (ii) Registration fees paid by students,
- (iii) Fees for courses, and
- (iv) Government grants;

and the expenditure would be for:

- (i) Maintenance of the association's buildings,
- (ii) Salaries of permanent secretarial staff,
- (iii) Advertising, printing prospectuses of courses, etc., and
- (iv) Payment of participating schools.

V. THE POSITION OF THE UNDERGRADUATE STUDENTS IN RELATION TO THE POST-GRADUATE ASSOCIATION.

In arranging the courses of instruction care will be taken to interfere as little as possible with the work of the undergraduate students. In the case of lectures no difficulty would arise from the presence of undergraduate students in seats not reserved for the post-graduates, but admission to all other forms of instruction will be restricted to those for whom the course has been arranged.

THE WAR.

THE VICTORIA CROSS.

A SPECIAL Supplement to the *London Gazette*, March 31st, gives an alphabetical list of recipients of the Victoria Cross, together with the theatre of war in which the distinction was gained in each case, and the date of the deed. The following medical officers (whose names have all previously appeared in the JOURNAL) are included in the list, which appears to be confined to awards made during the last three years of the war:

Temporary Captain H. Ackroyd, M.C., late R.A.M.C., attached 6th Battalion Royal Berkshire Regiment (Ypres, France, July 31st to August 1st, 1917); V.C. gazetted September 6th, 1917.

Captain W. B. Allen, M.C., R.A.M.C.(T.F.) (near Meoni, France, September 3rd, 1916); V.C. gazetted October 26th, 1916.

Captain N. G. Chavasse, M.C., late R.A.M.C.(T.F.) (Guilleumont, France, August 9th, 1916); V.C. gazetted October 26th, 1916. *Bar*: (Willie, Flanders, between July 31st and August 2nd, 1917); *Bar* gazetted September 14th, 1917.

Captain J. J. Green, late R.A.M.C.(T.F.) (Fonquevilliers, France, July 1st, 1916); V.C. gazetted August 5th, 1916.

Captain J. F. Russell, M.C., late R.A.M.C.(T.F.), attached 16th Battalion Royal Welsh Fusiliers, T.F. (Tel-el-Khuweifeh, Palestine, November 6th, 1917); V.C. gazetted January 11th, 1918.

Captain J. A. Sinton, J.N.S. (Oral, Ruins, Mesopotamia, January 21st, 1916; V.C. gazetted June 21st, 1916.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON LIEUTENANT W. E. LLOYD, R.N.

Surgeon Lieutenant Walter Everard Lloyd, R.N., died on March 20th, aged 34. He was the youngest son of the late Dr. W. H. Lloyd of Llandilo, Carmarthen, and was educated at the London Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1908. He entered the navy on November 5th, 1909, and at the beginning of the war was serving at Wei-hai-wei, but had recently been invalided.

ARMY.

Died on Service.

MAJOR H. H. GRIFFITH, A.A.M.C.

Major Henry Hunter Griffith, Australian Army Medical Corps, died of pneumonia after influenza in the 3rd London General Hospital on March 23rd. He was the son of Mr. Charles L. Griffith of Toorak, Melbourne, and of Tyrie, New South Wales.

CAPTAIN W. R. ALLEN, R.A.M.C.

Captain Wellesley Roe Allen, R.A.M.C., died of typhus at Cairo on March 11th. He was educated at Trinity College, Dublin, where he graduated B.A., M.B., B.Ch., and B.A.O. in 1909. After filling the posts of house-surgeon at Monkstown Hospital, Dublin, and of second assistant medical officer at Nottingham City Asylum, he became junior assistant medical officer at Broadmoor Criminal Lunatic Asylum, Berkshire. He took a temporary commission as lieutenant in the R.A.M.C. on July 5th, 1915, and was promoted to captain after a year's service.

CAPTAIN J. W. BINGHAM, R.A.M.C.

Captain John Warnock Bingham, R.A.M.C., was reported as having died on service, in the casualty list published on March 21st. He was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1907. Before the war he was in practice at Blyth, Northumberland. He took a temporary commission as lieutenant in the R.A.M.C. on February 1st, 1915, and was promoted to captain after a year's service.

CAPTAIN G. C. METCALFE, R.A.M.C.

Captain George Christopher Metcalfe, R.A.M.C., died from the effects of an accident at Lucknow on March 16th. He was the only son of the late John H. Metcalfe of Pateley Bridge, Yorkshire, and was educated at Cambridge, where he graduated B.A., and at University College Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1914. He took a temporary commission as lieutenant in the R.A.M.C. on August 7th, 1914—three days after war was declared—and was promoted to captain on completion of a year's service.

DEATHS OF SONS OF MEDICAL MEN.

Begg, Thomas Mylne, only surviving son of Dr. Charles Begg of Bath, died at San Diego, California, on March 26th, of tuberculosis, contracted during service in the Motor Control, Royal Navy, in 1916-17.

Buckmaster, Charles O. B., Lieutenant 3rd Duke of Cornwall's Light Infantry, only son of Professor G. A. Buckmaster, M.D., died at Holywood Officers' Hospital, Belfast, of influenza, on March 10th.

Bywater-Ward, Commander, R.N., only surviving son of the late Dr. J. Bywater-Ward of Oxford, died at Shanklin, Isle of Wight, March 14th, aged 37.

Hayes, Marshall, Lieutenant Cheshire Regiment, youngest son of the late Surgeon-Major W. H. Hayes, I.M.S., died of malaria and pneumonia at Manning Heath, Horsham, on March 23rd, aged 35.

Stovin, Frederick Cecil, Lieutenant Royal Air Force, late Royal Naval Air Service, youngest son of Dr. Stovin of West-cliff-on-Sea, Essex, reported missing on April 24th, 1918, now reported by German Red Cross as killed on that date in an aerial fight over the German lines, aged 19.

Strugnell, Harold Frederick Harrison, Major Royal Marine Light Infantry, eldest son of Dr. Strugnell of Highgate Road, London, N.W., died suddenly at Sherwell, Isle of Wight, on March 21st. He was educated at Highgate School, and got his commission in the R.M.L.I. in 1900. He took part in the first raid on Zeebrugge, in H.M.S. *Exmouth*, and served later at Salonica, Malta, and Otranto.

NOTES.

The Sultan of Egypt has conferred the Order of the Nile, Fourth Class, upon Major C. W. W. Sandes, R.A.M.C., Captain S. McK. Saunders, R.A.M.C., and Captain B. H. H. Spence, R.A.M.C., in recognition of valuable services rendered in connexion with the war.

Captain R. F. D. MacGregor, M.C., I.M.S., and Captain J. Scott, D.S.O., I.M.S., have been promoted Brevet Majors in recognition of distinguished service in connexion with military operations in the field.

Captain C. W. Wirgman, R.A.M.C.(T.F.), has been promoted Brevet Major in recognition of valuable services rendered in connexion with the war.

Lieutenant C. S. Dixon, 78th Battalion Winnipeg Grenadiers, son of Dr. D. S. Dixon of Tofino, B.C., has been awarded the Military Cross for operations near Valenciennes.

The military hospital maintained throughout the war by the Federated Malay States at Blackmore End, Kimpton, Herts, was closed on March 31st. The total number of patients treated at the hospital since its establishment was 2,507.

Scotland.

NEW CHAIRS AT EDINBURGH.

At the meeting of Edinburgh University Court on March 17th a letter was read from Professor Alexis Thomson, offering on behalf of a benefactor who desired to remain anonymous a gift of £10,000, to endow a lectureship in orthopaedics. The gift was gratefully accepted. It was also announced that certain commercial institutions had offered £15,000 as an endowment for a chair in accounting and business methods. The next business of the court was to receive draft ordinances for the foundation of this chair, that of psychiatry, and for new chairs in forestry and zoology. An Order in Council, dated March 12th, was received, approving the proposal to grant to the four Scottish universities powers to modify or suspend certain regulations in their application to persons who have been engaged in naval, military, or other public service connected with the war. A proposal from the Senate was accepted that supplementary courses of lectures and practical work in chemistry for the first professional examination in medicine should be given during the summer session by the professor of chemistry in relation to medicine, for the benefit primarily of students whose courses had been interrupted by war service.

EXPANSION OF THE UNIVERSITY OF EDINBURGH.

At the spring graduation ceremony on March 27th the Principal said that the university was fast recovering from the depletion and starvation of the long years of war. The number of students who had entered from the beginning of the session was more than a thousand greater than at the corresponding period of the previous year, and was within something like 250 of the pre-war standard. The university welcomed some 55 men from Canada and 160 men of all ranks, from privates to majors, of the United States army coming, not directly, but from the army of occupation in France and Germany. Sir Alfred Ewing went on to mention the new chairs founded in the university, and said that the new chair of psychiatry established through the co-operation of the managers of the Edinburgh Royal Asylum for the Insane, would be occupied by the medical superintendent of that asylum—a happy arrangement on both sides. A new professorship of zoology to deal more particularly with the invertebrates had been established, and with the help of a grant from the Development Commissioners a professorship in forestry. Turning then to the need for new laboratories, Sir Alfred Ewing said that the university buildings were surrounded by land entirely occupied by residents it would be very difficult to dislodge; there was every reason to believe that an excellent site in the outskirts of the city, only about a quarter of an hour distant from the present university buildings, would be secured. It was, indeed, so large that some of it could for the present be used as an athletic ground.

This new site, it is stated, is immediately south of West Mains Road, the recently constructed approach from Mayfield Road to the Blackford Hill. It extends to fully a hundred acres.

MINISTRY OF HEALTH.

The bill for the establishment of a Scottish Board of Health, the counterpart of the Ministry of Health Bill for England and Wales, is printed in the SUPPLEMENT this week. The bill was read a second time in the House of Commons on Tuesday, April 1st, and was referred to a Standing Committee. In the debate were raised for further consideration in Committee most of the points which were brought before the Lord Advocate in Edinburgh on March 22nd, as noted below.

Dr. McKenzie Johnston, President of the Royal College of Surgeons of Edinburgh and of the Edinburgh Branch of the British Medical Association, submitted representations presented by a deputation consisting of Drs. Keppie Pater-son and F. Porter, and Mr. W. Guy, F.R.C.S., L.D.S., appointed at a meeting of the medical profession in Edinburgh and Leith. It was urged that before the bill was enacted it should be submitted to the profession for consideration, that there should be a separate Ministry of Health for Scotland with direct access to Parliament, that the membership of the Scottish Board of Health should consist as to not less than one-third of registered medical practitioners not holding any other appointment under the Ministry, that there should be a medical advisory council elected by the profession itself to which all matters directly or indirectly affecting public health should be referred, and that the Council should be able to submit matters on its own initiative to the Board. It was also asked that the dental profession should be represented on the advisory council. In submitting these representations Dr. McKenzie Johnston said that the profession desired to have more say in the bill for it felt that there was an opening for great work, and desired very strongly that it should be in a position to use its expert knowledge to forward the aims of the bill. Dr. Porter expressed the hope that the institution of a medical advisory council would give every medical practitioner a personal interest in public health. In reply to some other observations by Dr. Porter, the Lord Advocate said that the advisory council should be a channel by which the result of experience the doctor got clinically could be collected and put at the service of the Board. Mr. Guy, speaking as a dentist, supported the demand that the dental profession should be represented on the Board. The Lord Advocate, in replying to the deputation, said that he felt sure the Secretary for Scotland would appreciate the spirit in which the question had been approached.

A deputation from the North British Branch of the Pharmaceutical Society of Great Britain urged that the Board of Health for Scotland should be independent of the Scottish Office, and should include one qualified pharmacist, and that in any consultative council pharmacists should be included.

A deputation from the Scottish Conference of Friendly Approved Societies was also received; it asked that there should be a Minister of Health for Scotland who would not necessarily be the Secretary for Scotland, expressed the opinion that representation on the Board should be open to both sexes, and deprecated the proposal to have an advocate of seven years' standing. Representations were also made to the effect that the power of the Local Government Board in respect of Poor Law administration should not be included in the new bill.

A deputation from the Sanitary Inspectors' Association urged that the Board should include a member of that association.

A deputation from the Parish Councils Association expressed a wish for the appointment of a commission of inquiry to report on the co-ordination of all forms of public assistance under one head. The transfer of the Local Government Board would bring parish councils under the new administration, and before any new Poor Law regulations were introduced there should be an inquiry.

England and Wales.

THE LONDON COUNTY COUNCIL AND THE MINISTRY OF HEALTH.

At the meeting of the London County Council on April 1st the Education Committee placed on record its strong opinion that only those powers and duties obviously included in the terms "medical inspection and treatment" should be transferred from the Board of Education to the new Ministry of Health. Many questions of school administration, such as physical education, the lighting and ventilation of school buildings, and the nature of the work suited to normal and abnormal children, although they had

a health aspect, were essentially matters of an educational character, and such matters should remain under the direction of the Board of Education. The Committee also expressed the opinion that important proposals in connexion with the Ministry of Health should not be introduced by means of Orders in Council; and, further, that there was some risk of the consultative councils intervening between the central and local authority. Two other committees also made representations criticizing the tendency to rely upon Orders in Council, and urging that steps should be taken to safeguard the County Council's interest in respect to possible interpositions of the consultative bodies, which it was felt should be purely advisory in their operation, and should not have statutory powers. Resolutions embodying all these views were passed by the Council.

CENTRAL MIDWIVES BOARD.

At a penal session of the Central Midwives Board held on March 20th, Sir Francis Champneys presiding, a resolution was passed that:

In all cases in which sentence is postponed for reports from the local supervising authority, the substance of any unfavourable report be communicated to the accused, and that she be given an opportunity of replying before her name is removed from the roll.

Two midwives were struck off the roll, one for neglect of a case of ophthalmia neonatorum resulting in the total loss of sight in one eye and partial loss of sight in the other. At the ordinary meeting held the same day an announcement was received from the Society of Apothecaries that Mr. Charles Sangster had been re-elected as its representative on the board for the ensuing year. The Lords of the Council have approved the following scale of expenses to be paid to members of the board under the provision of Section 4 of the Midwives Act, 1918:

First class travelling expenses and subsistence allowance at the rate of 20s. a night (to cover twenty-four hours' absence) and 6s. 8d. for absence from home during the day exceeding five hours.

Correspondence.

THE SUPPORTS OF THE UTERUS.

SIR,—In the BRITISH MEDICAL JOURNAL of March 29th, p. 378, is a report of a discussion at a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, at which the supports of the uterus were considered. I desire to refer to two points raised by speakers which call for discussion.

Professor Dixon's idea that some support to the uterus (suspensory in nature) is necessary to prevent the uterus being thrust downwards or telescoped into the vagina by the intra-abdominal pressure would of course be tenable if the uterus and vagina were isolated organs, so placed in the pelvis that the uterus was superimposed on the vagina like a bust on a (collapsible and hollow) pedestal, and so affected by the intra-abdominal pressure that the uterus (and its fundal extremity) alone were subjected to that force. But when we recognize that the pelvis is full of viscera, all of which are exposed to the intra-abdominal pressure, and in consequence that surrounding viscera and visceral parts are always being pressed against the uterus and vagina, Professor Dixon's idea, I submit, becomes untenable. In the normal adult, with bladder and rectum empty, and the individual erect, there obviously is no tendency for the uterus to be telescoped into the vagina, for whilst the long axis of the vagina passes upwards and backwards (and much more backwards than upwards), the long axis of the uterus passes upwards and forwards (and much more forwards than upwards, the organ often being horizontal, or even depressed anteriorly). And when the bladder is distended and the uterus raised in the pelvis so that the long axes of these two viscera come much more into line, the force which presses the uterus backwards also presses it upwards. If in this case the intra-abdominal pressure acted only on the fundus of the uterus, we could imagine the organ being depressed into the vagina, and that lateral suspensory bands were necessary to prevent such depression. But the intra-abdominal pressure acts on the distended bladder

as well; and the pressure of the bladder downwards, and the pressure it must thus exert backwards (because of the resistance of the bony walls of the pelvis antero-laterally and of the pelvic floor below) not only prevents any tendency for the cervix to be depressed, but is even the cause of the cervix being more posterior and higher in the pelvis. Such considerations show that ligamentous attachments of the cervix and vagina to the pelvic walls are not necessary to explain either the uterine position or its change in position with the change in volume of surrounding viscera. What is necessary is to consider what keeps surrounding viscera in place. When we realize that the pelvic outlet is occluded by a mechanism comparable in every way with the thoracic diaphragm and abdominal wall (which occlude the abdomino-pelvic cavity above, in front and at the sides), and that the whole abdomino-pelvic cavity is full of viscera, incompressible except for gaseous contents, the mechanism of the uterine support, and indeed of the support of adjacent viscera, becomes easy to understand.

The other point I wish to raise is in respect of a remark made by Sir William Smyly. This speaker expressed the opinion that anyone who has performed hysterectomy can scarcely doubt that the cardinal ligaments are mainly responsible for holding the uterus in place. I wish to ask Sir William Smyly whether this refers to the pregnant as well as to the non-pregnant uterus. It was once stated (I believe by a well known surgeon who had removed many pregnant uteri) that the pregnant uterus was most easily removed. If this be true, I submit that the ease with which the pregnant uterus is removed is due to the change which occurs in the pelvic visceral connective tissue during pregnancy—to its succulency and looseness—in which change presumably the cardinal ligaments participate. Will Sir William Smyly tell us what is the state of the cardinal ligaments in pregnancy? If the cardinal ligaments disappear in pregnancy, or show any tendency to such change, the whole conception of the visceral connective tissue hypothesis falls to the ground.

The fact that these ligaments exist in the non-pregnant, and offer an obstacle to hysterectomy in that state, does not show that they support the uterus in the living active subject, when all the other viscera are in place, pressing on the uterus. The existence of these structures in the non-pregnant is explained by the excursions of the intra-abdominal pressure, which diminish in pregnancy. As to their significance, that is shown by the behaviour of connective tissue condensations elsewhere, notably in that about the blood vessels, under different conditions. All this I have considered at length elsewhere, and it is not necessary to dwell further on it here.—I am, etc.,

Rugby, March 31st.

R. H. PARAMORE.

THE NAVAL MEDICAL SERVICE.

SIR,—I am glad that the "case for medical reform" has been so ably expressed in the BRITISH MEDICAL JOURNAL of March 1st, and it is to be hoped that some improvement in the conditions offered will be the result of the experience during the war of contrasting civilian with service conditions.

Criticism—especially destructive criticism—is easy, but is of little practical advantage, unless constructive measures are suggested to remedy the evil. This your article attempts with some success to do from the service point of view; but regarding it from the civilian side, it does not appear to me that the main point has been emphasized as to why the Royal Naval Medical Service is unpopular.

As far as my experience during the war goes, and from conversations with many surgeons, R.N., Temp. R.N., and R.N.V.R., it is the scientific and educational aspect which requires the most remodelling. During the whole of the war I have never been called upon to join in a discussion on a single medical topic of general or particular interest. Neither in barracks nor in the Grand Fleet has there been any attempt to my knowledge to collect meetings of medical men to discuss matters of scientific interest. Nor have there been any facilities organized for the studying of important measures, relative, for example, to the prevention and treatment of influenza, prophylaxis and treatment of venereal disease, or the first treatment of wounds in action; to say nothing of the innumerable

pitfalls in service routine which temporary officers might have avoided by frank general discussion instituted by seniors in the service.

If I may say so without offence, I believe the senior members of the service are mostly to blame for the unpopularity of the Royal Naval Medical Service. Courteous and kindly men as they are, they are lacking in the initiative in scientific matters which we find and value so highly in civil life. Medical men are apt to "starve" without the keen incentive of meeting with colleagues, and learning from each other.

I should like to suggest that naval hospitals should have a specially appointed teaching staff appointed in the special subjects your article alludes to. If these might be civilians attached as a visiting staff for this purpose it would probably be of greater advantage. There is no doubt that surgeons would attend demonstrations and lectures readily enough, especially if these were given in the afternoons, and facilities granted them of so doing from ships in the ports. Certainly men on shore and on leave would do so. There is a hunger among service men for up-to-date courses of instruction, and hospital courses should be made possible for all at short intervals.

There would be real advantage if instead of surgeons being attached to barracks while awaiting appointments they were attached to dépôt hospitals, and appointed therefrom. There are always a number of men at a loose end in barracks, and it is usual to find them some unimportant job to occupy their time. This partly fills their mornings and prevents them from going to hospital, but at present there appears to be no welcome in naval hospitals for casual visitors anxious to see the work. The staff are too busy getting their morning work done to stop to show or discuss cases with outside men. At the same time that surgeons are awaiting their appointments they might well help during the mornings with the routine work, and join the instructional courses during the afternoons. In a large naval base there are always a number of ships, and a regular supply of men could be made available for these courses.

Another point is of importance as showing the treatment of surgeons by their own chiefs, which must lead to grave dissatisfaction. The case is best illustrated by the following personal episode. During the influenza period an Admiralty weekly order arrived stating that an anti-influenza vaccine had been prepared and would be available shortly, and directing that medical officers of ships should ask for volunteers for this prophylactic treatment. No details were forwarded to principal medical officers of ships from the medical director-general's office, nor from the laboratory, as to the composition of this vaccine, nor of the anticipated after-effects. Owing to my refusal to employ a remedy of which I knew nothing I had a stormy scene with my captain who had evidently been criticized by the admiral for not obtaining volunteers for the vaccine treatment. This unscientific treatment of members of a scientific profession by its own departmental chiefs, and the interference of the executive in matters of purely professional importance, is quite enough to destroy all professional confidence and to keep men out of the Naval Medical Service. But this is only one instance of what is constantly being met with, and is talked about outside the service; and it is largely the reason why nearly every Royal Naval medical officer would gladly leave the service.

This by no means exhausts all that might be said on this subject, but it is enough to illustrate the point that much might be done by the senior medical officers in the service to render the Royal Naval medical officer more popular.—I am, etc.,

W. KENNETH WILLS, M.B.Cantab.

March 9th.

Acting Surgeon Commander R.N.V.R.

THE HANDICAP IN PRIVATE PRACTICE.

SIR,—Perhaps I can amplify the excellent letter of Lieut.-Colonel Henry Smith, I.M.S., while quite agreeing with him in the point that the inferior stamp of mind gets on best in Civil Services, as they are at present constituted. I write from the experience of thirteen years' official work, and also of twenty in general industrial practice, which is very different from a general practice where the bulk of the patients are more or less middle class.

I agree with Dr. C. Mercier's contention that repose, not light, is the greatest thing desired by the orthodox civil

servant. There are certain main maxims—You shall serve your departmental subchief alone; you shall regard your department as a watertight compartment; you shall never consider its rules and regulations as referring to the nation's welfare as a whole. It is accepted that it is wicked to initiate, or look for work; you are causing trouble to those more highly placed. Another is, You shall serve your fellow citizens, whose servant you are in theory, not one iota beyond departmental rules and regulations; the man who says they only indicate, but do not finally limit, your responsibility is a traitor to your chief and to your future.

This war has given an impulse of thought to the nation and intensified its needs, but the Ministry of Health is not an established service with old traditions. It will be closely criticized by the press and the House of Commons, and, as far as I can see, the greater part of the work will be done—in fact, nearly all of it—by doctors who are state paid and state controlled, but who will not be in the position of civil servants.

Even now, in these democratic days, the permanent civil servants find it needful to have self-protecting and helpful organizations, and how much more efficient such action would be in the hands of medical men sufficiently organized to set their views before the general public. The Indian Medical Service is hopelessly bureaucratic, a spirit that is cousin-german to Kaiserism in an intellectual form, and no democratic control can be exercised over it, certainly not for a long time to come.

But this democratic criticism is sure to be of great extent as regards a Ministry of Health, because nine out of ten of the voters will come directly under it: it is sincerely to be hoped that the clerical staff will not be taken over in block from existing established civil services, as was done under the National Insurance Act, we all know with what results.

We cannot become a scientific body under competitive practice. I am perfectly convinced that only those who have worked industrial practices know the evils and difficulties in them. (I am not writing to convince those medical men whose only object in life is to make money; to them nothing except that can appeal.)

1. We have not fair play as regards our health, nor as to old age; if we are ill our practice falls off.

2. Few of us are financially secure until 40; the amount of unpaid work a young man has to do, and anxiety, crush out the opportunity to develop increasing knowledge by study.

3. Financial obligations may side-track the promising and keen student; the third rate chronic may gain success, if he has private means, a good house, and a motor car.

4. The scientific mind is dwarfed; our patients do not come to be cured; they cannot afford it; nor can we usually afford to fight the great vested interests that hamper the health and soundness of the nation.

5. The heart is taken out of our work by the meanness and underhandedness of many of our patients.

The great point now is that many people are beginning to have the idea that the national veins of wealth may be founded on veins of health.—I am, etc.,

London, W., March 19th.

G. ROME HALL, M.D.

THE PLIGHT OF THE YOUNG MARRIED DOCTOR.

SIR,—Might I in these days of reconstruction call the attention of yourself and your readers to the very difficult plight of the young married medical officer? Every discouragement seems to be placed in his way, as witness the following results of inquiry as to possible jobs. In peace time it was difficult enough; now, shot out of the army after an absence abroad of, perhaps, three or four years, all pay ceasing without leave as he lands in England, a bonus only when the agents have finished haggling over the accounts (may be during the summer) such income as he has for the two of them taxed as if he had only himself to fend for, he is greeted thus:—

1. He thinks perhaps he could get a cheap holiday as a ship's surgeon, paying for his wife. "We never allow wives to accompany our surgeons."

2. He would like to rub up parts of his work. His London hospital offers him bachelor quarters, no salary, and one night off a week.

3. Infirmarys and fever hospitals refuse to look at married men.

4. The Government, saying he is fully qualified, refuse any aid, educational or otherwise, and wash their hands of him.

5. He applies to an agency for a stop-gap job as locum-tenent in private practice. "We have very few occasions on which we can recommend married men for these posts. Our fees are 15 per cent. of the weekly agreement?"

Apparently the only public service tolerating married men is the Prison Medical Service, consisting of thirty members.

A rather poor welcome home!

Surely now more than ever marriage should be encouraged, even amongst the despised professional classes.

As this is not a mere personal squeal, I prefer to subscribe only my initials,

March 17th.

W. B. S.

THE IDEAL OF THE PROFESSION.

SIR,—I, like "Colonel R.A.M.C.(T.F.)" (March 15th, p. 324), have had my ideals, fought for them, paid for them, and suffered for them in the past.

He asks why doctors say, "How shall we be defended from the Government?" He cannot be a panel doctor, and he has forgotten during his war service how the Government by an Act of Parliament turned a profession into a trade, with the accent on "trade."

I was faced with ruin or National Health club practice—no alternative, being in a middle and working class neighbourhood. I do not wonder that, despairing of the apathy and want of cohesion in our ranks, and the universal exploiting of our services by charities, municipalities, and the Government itself (for example, free vaccination and death certificates, and next door to free notification certificates becoming more elaborate and exacting every year), all in the public interest—I repeat, I do not wonder that, finding the powers cannot be led by fairness, but can be intimidated by threats, such suggestions are made and action proposed as "Colonel R.A.M.C.(T.F.)" deplores.—I am, etc.,

March 22nd.

MAJOR R.A.M.C.(T.).

A RURAL VIEW OF SCHEMES FOR NATIONAL MEDICAL SERVICES.

SIR,—In reply to Dr. Bristowe's letter (BRITISH MEDICAL JOURNAL, March 15th, p. 324), we think that a system of clinics and hospitals can be devised to meet the needs of the rural practitioner.

The term rural is a comparative term, and includes all gradations, from the extreme case of Dr. Bristowe's practice to the condition in which an urban clinic would apply. For the extreme case special arrangements will have to be made, and no basis of remuneration can be laid down until the amount of work required from the rural practitioner has been defined.

The scheme can be made to provide all the improvements in the practitioner's position required by Dr. Butler (BRITISH MEDICAL JOURNAL, March 22nd, 1919, p. 360), especially does it give scope for "ambition." It encourages the progress of the practitioner from general to special work.—We are, etc.,

W. J. HOWARTH,

B. A. RICHMOND,

April 1st.

Panel Committee for the County of London.

A METHOD OF OBTAINING ENDOWMENT FOR MEDICAL RESEARCH.

SIR,—I wish to endorse most emphatically the cogent arguments brought forward by "Pathologist" in favour of obtaining from Germany a sum which should be devoted to the endowment of medical research. If the daily press affords any indication of general as well as political opinion, there is a very strong feeling in favour of imposing upon Germany a penalty for the wanton cruelty of her methods in war. Such being the case, it is difficult to conceive of a scheme less open to objection than that of earmarking a sum of £20,000,000 for medical research; for no possible suspicion of self-seeking or desire for commercial advantage attaches to it. In any other connexion the sum would be almost contemptibly small, but if devoted to the purpose in view, it is difficult to assess the magnitude of the benefits which certainly will accrue to humanity. There may be diplomatic or political obstacles in the way of appropriating money obtained in this manner toward a specified purpose, but the memory of those who lost their

lives while tending the wounded at sea in torpedoed hospital ships and in hospitals which were bombed, demands a national memorial. What form of memorial could be more fitting than that which "Pathologist" suggests?—I am, etc.,

March 22nd.

ANOTHER PATHOLOGIST.

DISINFECTANT TESTING.

SIR,—Dr. Rideal's letter in your issue of March 22nd may give rise to a certain amount of misunderstanding, as it gives the impression, no doubt unintentionally, that the Rideal-Walker method of testing disinfectants has been adopted by the British Disinfectant Manufacturers Association as the standard method. This is far from being the case. All this association has agreed to do is, that where the Rideal-Walker test is called for, a standard technique will be adopted by all the members of the association.

The British Disinfectant Manufacturers Association has expressed no approval or otherwise of the Rideal-Walker test. The test to be made they rightly leave to the purchasers of disinfectants until such time as the Government shall take up the matter and lay down some official standard. Official control of disinfectants would be welcomed by manufacturers as affording much needed protection to purchaser and manufacturer.

British coal-tar disinfectants are at present superior to all others, chiefly because we control the bulk of the raw material, but the American control of labelling and testing is so much in advance of anything adopted in this country that it is bound to have the effect of raising the standard of American manufactured disinfectants and so become a danger to British trade.—I am, etc.,

W. NEWTON DREW,

Managing Director of Newton, Chambers, and Co., Ltd.

London, W.C., March 31st.

THE A.A.M.C. IN EGYPT.

SIR,—In the JOURNAL of January 4th, recently to hand, a statement occurs in the review of the book called "The A.A.M.C. in Egypt" by Barrett that, "as everybody knows, discipline is not the strong point of the gallant Australian fighting men." I desire to enter a protest against the publication of this statement in a journal of the standing and universality of the BRITISH MEDICAL JOURNAL. The statement is highly controversial, and in my opinion reflects an unsympathetic, narrow, and superficial judgement of the Australian soldier. Even if correct the circulation of such a criticism cannot be in the interests of the Greater Britain. What is the object of all military discipline? Is it not the training of the whole available male power of a country to a standard of fighting efficiency to enable it to successfully assert and defend itself against aggression? If this conception is correct it embraces everything in the soldier's training which makes for fighting efficiency. Fighting efficiency is the only real test of the presence or absence of discipline. Saluting is merely one of the outward and visible signs of the existence of discipline. It is emphatically not the thing itself. Can it be that your reviewer has mistaken the form for the spirit? It is not necessary for an outside observer who has lived with them in the field for over four years to certify as to the falseness of this charge of indiscipline. The dispatches of Sir Douglas Haig and Sir Edmund Allenby have put on record for all time their prowess in the field. Again and again they refer to their aggressive spirit in action, their unhesitating obedience of orders, their steadiness under fire, their capacity for enduring all forms of hardship cheerfully and doggedly—in short, they certify to the excellence of their discipline. Gallantry alone could never have placed them in their present position. Full of natural high spirits, with a sturdy independence of character and outlook which is characteristic, they may be slack in the external ritual of the British army system, but they are not indisciplined. This system, a product of a social system where class distinction is sharply defined, environment more or less cramped, and where the individual by tradition and habit is accustomed to its forms, is altogether foreign to the character of the average Australian soldier. He is drawn from a new country of great spaces where individual merit and resource largely determine his social status. He is naturally intolerant of all manner of formalism. In the

hard school of experience he has learnt the necessity for and the true meaning of discipline, but he remains as intolerant of what to him is an ostentatious symbolism utterly foreign to his nature. In expecting him to adopt the whole ritual of the British army system are we not making the old mistake of trying to put new wine into old bottles? An inherent independence of character cannot be confined to the narrow channels of an old system. Let us gladly recognize that by devious routes peculiar to their characters the soldiers of this great empire have attained to the spirit of true discipline, however different the external signs of its presence may be.—I am, etc.,

(CHARLES E. HERCOT, Major N.Z.M.C.)

Palestine, March 2nd.

*** The context should, we think, have made it plain that our reference was solely to discipline in camps and billets, and not to discipline in the firing line. Australian prowess in the field is the admiration of the world. Sir James Barrett in the section of his book headed Discipline, after speaking of the bravery and resourcefulness of Australians in battle and their splendid behaviour when desperately injured, says: "The convalescent Australian presents another problem, as also does the soldier waiting at the base. The lines in Dr. Watts's hymn come to mind. In these circumstances his very fine qualities cause him to give trouble. His ingenuity in breaking bounds is worthy of a better cause. . . . The hardest part of military work is waiting. . . . All thoughtful Australian officers we know tell the same story: 'Give us discipline, and again and again discipline.'"

Universities and Colleges.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on February 26th.

Surgeon Vice-Admiral Sir W. H. Norman, K.C.B., Director-General Medical Department, R.N., and Surgeon Rear-Admiral Sir G. L. Cheate, K.C.B., have been appointed Fellows of King's College.

A bequest of the late Dr. W. J. Mickle of £5,133 was accepted for the establishment in honour of his great-grandfather, William Julius Mickle, the poet, of an annual fellowship to be awarded to graduates of the university resident in London who have specially distinguished themselves in the advancement of medical art and science.

Three Beit Fellowships for Scientific Research, of the value of £175 a year each, are to be awarded. Applications must be received by the Rector, Imperial College, South Kensington, S.W.7, by May 31st.

Applications (1) for grants from the Dixon Fund for assisting scientific investigations must be received by the Academic Registrar between April 1st and May 15th; (2) for the Lindley Studentship for a student qualified to undertake research in physiology by April 30th; and (3) for the University Studentship in Physiology by May 31st.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

THIRD M.B. (*Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology*).—C. N. Armstrong, J. E. Basham, E. C. Dagger, I. Girgis, G. Hall, Norah H. Hamilton, G. J. D. Hammond, Margaret B. Herbst, T. H. Kirk, H. L. P. Peregrine, Alice M. Stenhouse.

UNIVERSITY OF ABERDEEN.

THE following medical degrees were conferred at a graduation ceremony on March 25th:

M.D.—Buriortji Sorabji Kanga, *A. G. Reid.

M.B., Ch.B.—†† Hilda L. Laidlaw, †B. Yule, Marjorie Calloden, A. R. Forbes, N. B. Gadsby, Helen M. Gray, *A. G. Morrison, Margaret A. Reid, Ellen J. Saunders, J. Skinner, T. A. H. Smith, †Violet M. G. Smith, H. G. Topping.

* Commended for thesis.

† Passed Final Professional Examination with distinction.

†† Second class honours.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—†H. E. Reburn, †C. de B. Thomson, †T. T. Tiplady. MEDICINE.—*H. P. Hodge, †M. Ibrahim, †H. E. Reburn, *C. de B. Thomson.

FORENSIC MEDICINE.—O. H. Brown, H. H. Selim.

MIDWIFERY.—C. de B. Thomson, J. B. Williamson.

* Section I.

† Section II.

The diploma of the society has been granted to Messrs. H. E. Reburn, C. de B. Thomson, and T. T. Tiplady.

Obituary.

JOHN GORDON, M.D.,

Aberdeen.

VERY many members of the British Medical Association far outside the city of Aberdeen, where he practised, will learn with great regret that Dr. John Gordon of Aberdeen has died unexpectedly. He had attended a luncheon on March 21st in connexion with the induction of the new incumbent of the West Parish Church and had proposed the health of the guests. Later that afternoon he was taken suddenly ill and died early on the morning of March 22nd.

John Gordon was the son of the late Mr. James Gordon of Keith and was born in 1849. He was for some years engaged in pharmacy, but always had in mind his intention to enter the medical profession. He entered Marischal College as a medical student and graduated M.B., C.M. Aberd. with honours in 1884 and M.D. in 1888. After graduating, Dr. Gordon was associated in practice with the late Dr. Henry Jackson of Aberdeen, and ultimately succeeded him in practice. He was assistant physician to the Aberdeen Royal Infirmary, and from 1908–11 was assistant professor and examiner in materia medica in the University of Aberdeen. His contributions to medical literature, all on therapeutical subjects, included a paper on the action of veratrum viride in puerperal eclampsia. He had served as physician to the Aberdeen General Dispensary and assistant surgeon to the Hospital for Sick Children in Aberdeen.

Dr. Gordon took a great interest in the British Medical Association, had been president of the Aberdeen Branch, was a member of the Central Council, had served on the Representative Body, and was a frequent attendant at the annual meetings, where his clear sincerity and genial manner won him many friends. He was an active member of the Aberdeen Medico-Chirurgical Society, and had been its president. He did much public work in Aberdeen; among other offices he was chairman of the governing body of the Aberdeen Asylum for the Blind. Dr. Gordon married Miss Maria Ogilvie, D.Sc., Ph.D., by whom and by one son and two daughters he is survived.

RALPH WINNINGTON LEFTWICH, M.D., C.M.

WE regret to record the death, on March 25th, after a short illness, of Dr. Ralph Winnington Leftwich. He studied at St. Bartholomew's Hospital and the University of Aberdeen, and afterwards visited Paris and Vienna. He graduated M.B. with honours, and C.M. at the University of Aberdeen in 1873, and took the degree of M.D. in 1875. He was house surgeon, and afterwards for a time assistant physician, to the Shadwell Children's Hospital. Later on he engaged in general practice in Ebury Street, London, and held various medical appointments in connexion with London tramway companies. Dr. Leftwich took a keen interest and showed high capabilities in the practice of medicine. In 1888 he published *An Index of Symptoms*, which reached a seventh edition this year. Of another book, *The Pocket-Book of Treatment*, a third edition appeared in 1917. In 1913 he published a volume entitled *Tabular Diagnosis*, and in 1918 another on *Rational Therapeutics*. Dr. Leftwich was a keen student of Shakespeare's life and time, and to his paper showing that St. Saviour's, Southwark, was the poet's parish church when he lived in London, and presumably his place of worship, was due the erection of the Shakespeare Memorial there. Dr. Leftwich wrote several papers on subjects relating to Shakespeare, including one on John Hall, the physician, who was Shakespeare's son-in-law. So recently as March 19th Dr. Leftwich read before the Historical Section of the Royal Society of Medicine a paper founded on a detailed study of the authentic signatures of Shakespeare, in which it was shown that in each case there were clear indications, increasing with age, of writer's cramp; it was suggested that to this cause might properly be assigned the fact that during his last years Shakespeare added little or nothing to his earlier plays and poems, a circumstance for which no satisfactory explanation had hitherto been found. Of this paper, which was illustrated by facsimiles, an account was given in our columns on May 11th, 1918.

THE many friends of Dr. WILLIAM GEORGE CRESWELL, formerly of Birmingham and of Kingston-on-Thames, will hear with regret of his death after a few days' illness, at his house in Cobo, Guernsey, on March 17th. He studied medicine at Queen's College, Birmingham, and qualified in 1876, taking the M.D. degree at Durham University in 1892. Failing health compelled him eight or nine years ago to give up practice. After a voyage or two he settled in Cobo, and his health being somewhat restored by the climate, he took up work again, and at the time of his death had become one of the most popular practitioners in the island. He was a man of character, quick in decision, prompt in action, decided in his likes and dislikes. Though leading an active life he was a reader, a writer, a stout opponent in controversy, and a delightful letter writer to his intimates. Fond of social intercourse his wide sympathies brought him an extensive acquaintanceship, and provided him with an inexhaustible store of anecdotes that made him a most entertaining companion.

Deputy Surgeon-General SAMUEL JARDINE WYNDOWE, Madras Medical Service (retired), one of the few remaining Mutiny veterans, died at Uley, Gloucestershire, on March 19th, aged 89. He was the son of the late Captain Wyndowe, born in 1830, was educated at St. George's Hospital, where he was dresser to Frank Buckland, and took the diploma of M.R.C.S. in 1854, and the degree of M.D., King's College, Aberdeen, in 1860. He entered the I.M.S. as assistant surgeon on March 24th, 1854, became surgeon on March 24th, 1866, surgeon-major on July 1st, 1873, and brigade-surgeon, when that rank was first instituted, on November 27th, 1879, retiring with an honorary step on June 15th, 1881. The year after he went to India he was appointed to a cavalry regiment of the Nagpur Irregular Force; in 1860 he was posted to civil employment in the Central Provinces, and soon after was appointed professor of chemistry in the Madras Medical College, and chemical examiner to the Government of Madras. In August, 1867, he was given the residency surgerony of Haidarabad, and held that post till his retirement. He served in the Indian Mutiny from 1857 to 1859, took part in the engagement at Sambulpur, and received the Mutiny medal.

Professor CHANTEMESE of Paris, whose death was announced in the BRITISH MEDICAL JOURNAL of March 1st, was born at Puy (Haute-Loire) in 1851. He was educated at the local lycée, where he had Emile Roux, late director of the Pasteur Institute, and Ch. Dupuy, who is a prominent figure in political life, among his school-fellows. His father, a lace maker, wished him to go into business, but the father's death left the son free to follow his vocation, and at the age of 25 he took up the study of medicine. After a brilliant career as a student he took his doctor's degree in 1884, being awarded a silver medal for his thesis on tuberculous meningitis in the adult. A year later he became physician to the Paris hospitals. A pupil of Cornil, he devoted himself to bacteriology, and his relations with Roux led to his being selected by Pasteur to assist Grancher in the study of treatment of rabies. His researches on typhoid fever won for him the Bréant Prize of the Académie des Sciences in 1888. In 1889 he was first among the candidates for the position of agrégé in medicine. Soon afterwards he received the decoration of the Legion of Honour. In 1897 he was appointed professor of experimental pathology in succession to Strauss. His scientific publications cover a very wide field of research, especially in hygiene. He was appointed auditor in the Comité consultatif d'hygiène de France in 1887, and in 1892 became a member of that body. In the following year he was appointed assistant inspector-general of sanitary services. He was charged with several scientific missions in France, Germany, Austria, and Turkey. In the last of these he won a great diplomatic triumph by persuading the Sultan to revive French teaching in the Constantinople school of medicine, in which it had been suppressed since 1870. He established a complete course of bacteriology in the Paris Faculty, which attracted many students, French and foreign. He was also much appreciated as a clinical teacher at the Hôtel-Dieu.

Medical News.

THE Wednesday social evenings of the Royal Society of Medicine will be suspended after this week for three weeks (April 9th, 16th, 23rd).

THE Research Defence Society has moved its office to the house of the Medical Society of London, 11, Chandos Street, Cavendish Square.

THE Minister of Pensions has decided that the regulations now in force as to the supply, repair, and renewal of artificial limbs for discharged sailors and soldiers shall be extended to retired officers.

NATHANIEL OSBORNE MCCONNELL, M.B., who was found guilty and sentenced to death, for the murder of Mary Reid, at Belfast Assizes on March 24th, has been reprieved, and the sentence has been commuted to one of penal servitude for life.

AT a meeting of the Medico-Legal Society on April 29th at 8.30 p.m. Lieut.-Colonel Nathan Raw, R.A.M.C., C.M.G., M.P., will read a paper on the position of medicine in the State. Visitors will be welcomed.

A THREE months' course of lectures and demonstrations on hospital administration will be given at the Western Hospital, Seagrave Road, Fulham, by the medical superintendent, Dr. R. M. Bruce, on Tuesdays and Fridays at 5 p.m., beginning on Tuesday, April 8th. The fee for the course is £3 3s. Further particulars can be obtained on application to the Clerk to the Metropolitan Asylums Board, Embankment, E.C.

A SPECIAL meeting of the North of England Tuberculosis Society was held on March 20th at Newcastle-upon-Tyne to discuss the formation of a tuberculosis service on the lines suggested at the special conference held by the Tuberculosis Society in London on February 15th. Resolutions were passed expressing the opinion (1) that the formation of a separate tuberculosis service is not advisable, and (2) that the whole question of the status and conditions of service of those members of the public health service who are at present engaged in tuberculosis work should be referred to the Society of Medical Officers of Health for early consideration and action.

A NEW monthly journal entitled *Tubercle*—to be devoted to all aspects of tuberculosis, and intended to give tuberculosis workers an opportunity of forming a fraternity for mutual help—will appear in October next. It will contain, together with original articles, a summary of current pathological, clinical, and of sociological work. In the first few numbers an attempt will be made to present a digest of the situation during the war. The literature of tuberculosis will be reviewed, societies dealing with tuberculosis reported, and letters will appear from special correspondents abroad. The correspondence columns will be open for discussion of the problems of tuberculosis. The journal is under the general editorial direction of S. Roodhouse Gloyne, Claude Lillingston, Egbert Morland, and Stanley Tinker; the publishers are Messrs. Bale, Sons, and Danielsson, and the price is provisionally fixed at 25s. per annum, post free.

FIVE years ago the question of pensions for hospital officers was taken up by King Edward's Hospital Fund for London, at the request of the Hospital Officers' Association, and a subcommittee of three was appointed to inquire and report as to the existing provision and to make recommendations. Their report has now been published, together with a dissentient memorandum by Sir William J. Collins. They find that for various reasons the total amount paid in pensions is abnormally small for the size and importance of the hospital service in London, and that the case submitted by the Hospital Officers' Association is generally made out. The full remedy for these defects they consider to be a general scheme embracing all the hospitals. The final recommendation of the majority is that a conference of hospital representatives should consider the whole question on the basis of providing the pensions by means of insurance policies paid for by joint contributions of employers and employees, with separate administration for disablement benefit. Sir William Collins in his memorandum demurs to the proposal for a scheme based upon recourse to insurance companies.

THE Royal Sanitary Institute will hold an annual congress at Newcastle-upon-Tyne from July 28th to August 2nd, under the presidency of the Duke of Northumberland, who will give an inaugural address. There will be five sections—sanitary science and preventive medicine, engineering and architecture, hygiene of maternity and child welfare, personal and domestic hygiene, and industrial

hygiene. There will be in addition six conferences, of representatives of sanitary and port sanitary authorities, of medical officers of health, of engineers and surveyors, of veterinary inspectors, and of sanitary inspectors and health visitors. An exhibition will be held illustrating hygiene of infants and child welfare, housing, including the laying out of estates and construction, ship sanitation, municipal sanitation, and domestic health.

At a recent meeting of the Society of Public Analysts Mr. A. W. Stokes, F.I.C., pointed out that though the food control authorities had limited the percentage of meat which might be contained in sausages to be sold at a given price, they did not limit the quantities of bread, water, and fat. The desirability of limiting the quantities of water, bread, and fat was shown by a particular sample which contained about equal parts of added water, bread, fat, and meat. Since meat contained 70 per cent. of water and bread 40 per cent., no added water, he thought, should be allowed. In the United States the use of bread in sausages was prohibited, and as the bread was often soaked in water before use, the percentage of water in the finished product was thereby increased.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the *British Medical Journal* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

CEYLON.

G. asks as to the best age to allow a boy to go to Ceylon. (1) Is the risk of enteric greater under 19? (2) How far does inoculation prevent this? (3) Should inoculation be repeated there after a year or so?

DIAGNOSIS OF TYPHUS FEVER.

Dr. J. C. McWALTER, writing from Egypt, states that, according to his observations, an early certain indication of typhus fever is the extremely dark, almost blackish, appearance of even a single drop of blood exuding from a needle-prick. He asks whether other observers have noticed this.

LETTERS, NOTES, ETC.

STEWARDS FOR THE RECEPTION BY THE METROPOLITAN COUNTIES BRANCH, TUESDAY, APRIL 8TH.

THE honorary organizer of the reception to be given by the Metropolitan Counties Branch of the British Medical Association at the Guildhall, London, on the evening of Tuesday, April 8th, asks for volunteers to act as Stewards. He has received some names, but needs sixty or seventy more. Offers should be addressed to Dr. Reginald Morton (66, Harley Street, W.1), who will hold a meeting of the Stewards at the Guildhall on April 7th, at 3.30 p.m., when he will show the rooms and explain what will be required of the Stewards. The guests will be received from 8.30 to 9 p.m. by Sir Clifford Allbutt, K.C.B., F.R.S., President of the British Medical Association, and Dr. M. G. Biggs, President of the Metropolitan Counties Branch. A lantern lecture on Old London will be given twice during the evening by Mr. G. Q. Roberts, C.B.E., Secretary of St. Thomas's Hospital; and Dr. A. C. Dove will take parties for tours of inspection of the Guildhall, including the museum, explaining points of historical and artistic interest. In the Great Hall there will be an exhibition of surgical instruments used by Lord Lister, John Hunter, and John Abernethy. There will be two concerts in the Council Chamber between 9 and 10.45, and dancing in the Art Gallery from 9 to 11. The band of the Royal Artillery will play in the Great Hall and afterwards for the dancing.

IODINE IN INFLUENZA.

Dr. ANDRÉS SOBRINO of Madrid is an enthusiastic advocate of the use of iodine in the prophylaxis and curative treatment of influenza. For both purposes he prefers the tincture, given by the mouth, in quantities increasing from 5 minims

every three hours to 10, 15, 20, or more every two hours. He administers it in milk. He states that he has frequently seen cases of simple influenza in adults cut short within twenty-four hours by 45 minims of the tincture, that being the dose at which iodine begins to produce good therapeutic effects. He disclaims any objection to combining this treatment with other therapeutic measures, and has employed it with good good results in association with local disinfection of the nasopharynx and the use of inhalations. We gather that in general he administers tincture of iodine as a preventive in doses of 15 minims three daily, or 5 minims every three hours; and to effect a cure he increases the dose to as much as 5 drachms daily. Dr. Sobrino upholds his case with fine ardour and a wealth of glowing phrases. Indeed, he regards the exhibition of iodine according to his plan as "the fundamental treatment of all infectious diseases."

SERVICE IN MALTA.

"MALTA" writes with reference to the correspondence under this head concerning service in Malta: Without doubt conditions in Cairo and Alexandria were the height (or depth) of luxury when compared with those in Malta. Nurses and V.A.D.'s, under canvas on the island, had a comparatively rough time, while their colleagues in Egypt were sipping the delights of Sheppard's and of the Grand Continental. Like many others who sailed for Malta in April, 1915, I did not escape until February, 1916, notwithstanding frantic attempts to achieve "active" service. "Volunteer 1914" asks "Is this strictly fair?" Well, it is not! But I cannot help thinking if indent were made in triplicate on the proper A.F., more of us might display that pretty ribbon.

"VOLUNTEER 1915" writes: I fully endorse the two letters appearing under this head. I volunteered for France in 1915, and was told by the authorities that my application was accepted. Afterwards I received a communication to the effect that medical officers were urgently required for Malta, and that I could not be sent to France. On my arrival at Malta I found it a hotbed of enteric and dysentery, as your correspondent states.

PITUITRIN IN MIDWIFERY.

Dr. E. ARTHUR DANDO (Dudley) writes: I have used pituitrin in 150 labours, and my experience may be of interest. The preparation I use is "infundin" (B. W. and Co.), the quantity 0.5 c.cm. I inject deeply into the buttock after the os is well dilated. Labour is shortened, the suffering of the patient lessened, and the general practitioner's time saved. I have never had any bad result.

A RATIONED WORLD.

J. W. S. writes: A little girl, aged 5, was brought to my surgery by her mother in order to have a slight injury attended to. The little girl had fallen downstairs and sustained a wound of the face which required a couple of stitches. Contrary, perhaps, to what one might expect in the circumstances, she was perfectly at ease in my surgery and not a bit afraid. While I was preparing to attend to the injury the following dialogue actually took place:

Patient: Are you the doctor that brought me to my mother when I was a little baby?

Doctor: Yes.

Patient: Have you got any more?

Doctor: I'm sorry, I haven't at present.

Patient: Can you get me one?

Doctor (taking piece of pencil and paper and pretending to write): Well, I will put your name down for one.

Patient: When will you have it?

Doctor: I don't know yet.

Patient: Where will you get it?

Doctor: I cannot say just yet.

Patient: Shall I need a coupon?

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British Medical Association.

SPECIAL CLINICAL AND SCIENTIFIC MEETING.

THE NEW BIRTH OF MEDICINE.

AN ADDRESS TO THE MEMBERS OF THE SPECIAL CLINICAL AND SCIENTIFIC MEETING OF THE BRITISH MEDICAL ASSOCIATION,
LONDON, APRIL, 1919.

BY SIR CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S.,

REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE; PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.

Though the plans of this special Clinical Meeting of the British Medical Association—held for the purpose of bringing to the minds of all of us by way of discussion and demonstration the lessons learnt in the war—do not include the delivery of addresses I think it becoming that I, who have the fortune to be the President of the Association and of the meeting, should present to those attending it some words of welcome and some thoughts that have long been dwelling in my mind.

That we meet together to-day at the greatest moment in the History of Medicine seems an audacious claim; how shall it be justified? Not merely because this is a gathering of the physicians of nations, commonwealths, dominions, colonies, and friendly nations, to consider the lessons of a great war, great as such an occasion is; not only because the medicine of modern peoples and empires has vindicated its ascendancy in the greatest war of all time, but chiefly because at this moment it is revealed to us that Medicine has come to a new birth, and in this regeneration has fought on no unequal terms with other arms in a glorious campaign. It might have been supposed that in war there would be no time to think, only to do; but we are surprised to receive enormous gifts to medical science from the great caravan of our returning pilgrims.

In former wars deaths by disease were many times more numerous than by battle; perhaps four or five times more. In South Africa the enteric fevers were more destructive than battle; in this European war this disease, owing to scientific prophylaxis, became almost a negligible factor. Indeed in the West the average health in camp was even higher than at home; and in bad quarters such as Salonica or Mesopotamia, principles of pathological biology were put in action—as they were in Panama—which brought infections down as low as time and occasion could permit.

THE NEW BIRTH OF MEDICINE.

What is then the new birth, this revolution in medicine? It is nothing less than its enlargement from an art of observation and empiricism to an applied science founded upon research; from a craft of tradition and sagacity to an applied science of analysis and law; from a descriptive code of surface phenomena to the discovery of deeper affinities; from a set of rules and axioms of quality to

measurements of quantity. When I turn back to the medical textbooks of my pupilage, to the wise and scholarly Watson, or the respectable Alison, and contrast them with the textbooks of to-day, I marvel that a change so vast, so profound, so revolutionary, should have come about in *one lifetime*! Many a generation had to pass before Harvey's researches established animal mechanics; many again before the half-lights on animal heat of Willis, Mayow and Boyle were brought to quantitative verifications. In Medicine observation cannot carry very far, not so far, let us say, as in astronomy; while skill and sagacity, if they do not die with the individual, keep in the axioms and exercises of the school but a transitory life. No observation of a thunderstorm could unravel its affinities to the action of a loadstone on a scrap of iron; no observation on diet could reveal the relation of food protein, by way of the amino-acids, to the tissues; no observation bestowed on scurvy or beri-beri could detect the occult and elusive but all-potent influence of the vitamins; no observation of secretory and muscular action could reveal the play of surface tension in muscular contraction, nor its relation to lactic acid and oxygen. By what sagacity could the shrewdest observer, let us say of heart disease, perceive the likeness of the formations of a soap bubble, or a raindrop, to the contraction of a muscle fibre in terms of its length; and that muscular contraction is not so much a chemical as a physical system with a negative temperature coefficient. Again the relation of sexual hormones to the development of men and women, and to the phases of their respective organs of reproduction, is an issue of the academic laboratory. The prodigious harvest Medicine has reaped in the present campaign from the original researches of a chemist into the occult causes and laws of fermentation by microbes, and from a field apparently so alien as of the silkworm disease, we now celebrate.

SCIENCE AND PRACTICE.

One of the main lessons of our history has been that, in neglect of research into truths below the surface, Medicine, for lack of a deeper anchorage, has always sunk back into empiricism and routine. Thus the great period of Ionian scientific insight, with its Hippocratic medicine and surgery, waned until the new birth of science and medicine

in Alexandria, as reflected for us in the pages of Celsus. Then, as research languished, the drift was downwards again to rule of thumb and recipe therapeutics; though once more by the physiological researches of Galen it was transiently lifted up until the obscuration of all science in the long Byzantine and medieval eclipse.

Yet, even during this period of secondhand knowledge down to Paré and Wiseman, medicine was at intervals stirred in its sleep by adventures of surgery which, then as now, carried a certain turbulent and provoking inquisitiveness into the complacent pomp of its medical tradition. And let us not forget how many of the greatest men in medical history, from the wars of cloud-topped Ilion, to those of Greece and Rome, and of modern times, had been on military service.

That every cell in the body is a microbe producing its own secretion, which we may call secretion, hormone, or toxin according to our regard of its values—some indeed such as trypsin being beneficent in certain relations, maloficent in others—is now apparent; and these several specific energies are gradually being reduced to experimental measurement; quantities upon which is being built that large and growing system of reinforcement and inhibition which, in its applications in this war, has saved more lives than the sword has slain. The skill, sagacity, and aphorisms of Hippocrates, the skill, sagacity, and aphorisms of Sydenham, did useful work for mankind in the twilight. In the great hospitals of England skill and sagacity, qualities in which the English physician is unrivalled, are eminent at the bedside and in the classroom. In no country has the pupil been so well taught to make use of traditional and empirical knowledge, to apply this handy knowledge, quickened eye, and clever resource to immediate necessities. But to-day physiological and pathological science is running too fast for this medicine of individual and empirical authority, medicine which formerly I have described as up to date but not beyond it; the medicine of the day but not of the morrow; the studentship of the diploma but not of the university. Now we have to stint even this moderate commendation; the advances and accomplishments of the ancillary sciences are becoming too swift, and too exacting both of time and training, for the clinical worker to keep pace with them, or from them to select fertile principles for application to his immediate work.

No man, be his faculties what they may, can be at once physicist, biochemist, pathologist, practitioner and sanitarian; yet he has to treat—let us say—dropsies on principles of osmosis, diabetes on those of biochemistry, anaemias on those of physiology, malarious, yellow and trench fevers on those of minute parasitology; and so on.

The working physician cannot be a biochemist, nor a biologist, in the academic sense of these studies; any more than an engineer can in this sense be a mathematician or a physicist. Without academic study the engineer had by rule of thumb built bridges, towers and aqueducts, if simply and rudely; but, as far more than this is now required of him, so far more is required of the physician. Without physics and biochemistry we cannot find nurture and growth; from the breasts of these nursing mothers we likewise draw our life. Disinterested academic students of biology and biochemistry, if not indifferent to practical needs yet unchallenged by them, have been and still are, working on larger and remoter issues; pregnant indeed with the future but in some isolation from the feats of the clever craftsman—surgeon or physician—dealing in a tentative and empirical way with conditions that will not wait. The scientist is in a balloon and his outlook spacious; the eye of the craftsman is quicker for contingencies but his survey narrower; the craftsman sees the trees, the academician the wood; neither has put into common stock all he should give to the other. But the academician, recognizing the fertility of practice in new and diverse problems, is keener to co-operate with the craftsman than he with the other.

NEED FOR MEDIATING MACHINERY.

Between these departments of research and practice there is needed a mediating system; a technical school continually to co-ordinate the growing principles of the laboratory with the accumulating contingencies of practice. As I have said, the busy practitioner cannot be a master

or even a disciple of these several departments of science, yet he must be so instructed in the broader principles of them that he shall be not only in a position to recognize their applications to practice but, if he is to be a teacher, to perceive moreover the emergencies of these principles in their several fields, so that he may apply them to his own industry and foresee wider and wider occasions for such applications.

To genius we can set no bounds, but I have asked myself sometimes if Lister would have worked out his great research if, instead of being in Edinburgh, he had been in London. Why should he not? Well because in Medicine London is but a factory; Edinburgh is also a technical school with its technical professoriate animated by an academic spirit. But when my pupils leave Cambridge for London, imbued I hope with some scientific ideas, and somewhat enlarged in scientific imagination, they begin there to lose much of this outlook, much of these ideas. Fascinated, as justly they are, by the practical wisdom, sagacity, ripe experience and clever resources of their medical and surgical teachers—for as practitioners. I repeat, these are the best in the world—the pupil loses vision of Medicine as a science. He returns to us for examination an excellent apprentice, but no longer of the company of the prophets. For a diploma, for the doctoring of the day, he is good; from an academic standpoint, from an outlook to the medicine of to-morrow, from a vision of the continual carrying and weaving of the yarn of biochemistry and biology into the web of his art, he has fallen away. For him the future lies undisturbed and unquestioned; the spirit of curious investigation has evaporated. As I have said on former occasions, Harley Street is the grave—shall I not say the cemetery?—of clinical research. How many a brilliant colleague who as a Professor of Medicine, Surgery, or Gynaecology would have shed light upon his profession and his school, yearning it may be for a sphere of research yet finding no other career or means of livelihood open to him, has been driven to throw up all this meditation between his art and its sciences, all effort to tear her secrets from nature, all hunger for things to come, to bury these talents in practice.

These reflections may seem unfit for a world audience, more appropriate for a domestic homily; but, from the home which I know best, I tell a tale which is of universal application. I return to the great occasion on which we are met. By this war, whether doctors or combatants, we have been thrust into new problems; we have been shaken out of mere readiness of resource, mere experience, mere sagacity, and compelled to that new curiosity, that passion to wrest new secrets from nature, which fortunately had made some way before the war; and was then turning Medicine from an observational and empirical craft into a scientific calling. The Committee for National Research, established in 1913, was one mark of this change, and in our crisis has shown itself as the spirit and the organ of advances which I have been tempted to call stupendous.

Sometimes it is said that to carry instruments of precision to the bedside blinds the student; that in fadding with instruments, even with the stethoscope, he forgets the use of his eyes. Is it true that instruments of precision, while opening the eyes of the observer to deeper and less obvious processes, closes them to the plainer features of disease? Surely the chief differential features of—let us say—tabes dorsalis were as manifest to plain observation before the advance of scientific research as they are to-day; indeed the chief work of my old master Duchenne was of a descriptive kind, well within the range of unassisted vision. Why was it left to Parry and Graves, not a hundred years ago, to describe Exophthalmic Goitre; or Myxoedema to Gull and Ord? The tests known respectively by the names of Babinski and Kernig, were within the reach of the physician before the pyramidal tracts were dissected, or the pathology of posterior basic meningitis laid bare. Why was it left to our own day to distinguish typhoid from typhus fever; or Hodgkin's disease from scrofula? The truth is, the spirit of research, far from dimming the eye, quickens it. In science there is no place for skipping. Look but aside and nature gives you a cuff on the cheek. If the hasty student prefers his stethoscope to his eyes he is soon pulled up by nature herself, if not by discipline.

Research is the salt of the most practical training; it

cannot begin too soon; it is the light of the wisdom of the man, of the mind of the boy, of the heart of the child. Education has lingered on Hellenistic and Scholastic ways, on the systems of abstract notions unweaved by verification, so long that the hard-shell practical man is still occupied by the notions of antiquated theory and the phrases of a dead or moribund nosology. The majority of medical men have to work upon the store of scientific ideas and facts with which they set out in practice; onwards they may gain in adaptiveness and technical facility, but can dig little deeper into the strata of knowledge; but for the modern academic spirit this would spell, as in our history it has spelled, stagnation. Therefore it is of the greater importance that every student should start on his career well equipped with scientific principles. If thus equipped he be not at first so handy a doctor as his seniors, with his larger mental grip he will soon pick up common devices and apply them with more freedom and economy.

On the other hand, it is right that the working doctor should refuse to be jumped too readily by the new lights. He has long been scouting his way in the bush and tangle, and has gained a certain pathfinding instinct; he is responsible for the safety of his patient, and has to see that he comes to no harm by overdriving of principles untempered by a sense of contingencies, a sense with which the English doctor is richly endowed. Notwithstanding, no man can deal well with a very complicated subject, such as medicine, without an enormous underlying framework of precise knowledge; and it is as knowledge becomes quantitative that solid progress is made. Happily this greater precision, far as it is from fulfilment, is manifest enough in the work of our own generation to give us encouragement.

PHYSICS AND MEDICINE.

Let us glance, however hastily, towards some of the paths on which we go to meet new knowledge. In the venerable study of anatomy in its static aspects the student has long been taught the value of precision; but the recent tide of anatomical study towards its dynamic aspects, as by the work of Sherrington and Head, is bringing in new currents not of theory only but also of practice. Of other casements opening upon new visions of medicine that from the chambers of Physics is perhaps the most arresting; at any rate at present. How fascinating, in their application to pathology, are the principles of osmosis with its curious reversals, of surface action and adsorption, of electrolytic differentials and electric methods of taking quantitative measurements, of mechanical pressures in the circulation of body fluids and, in the heart, as measured and graphically delineated by Hales, Ludwig, Gaskell, and Mackenzie, of the behaviour of fluid veins, and of the relative diameters, normal or variable, of the cardiac chambers and their main outlets. I need not do more than allude to the recent work on the CO_2 tension in the pulmonary alveoli, and to its immediately practical bearing on so-called acidosis, on the treatment of persons gassed in military or civil operations; and so forth. By physics again we are shown, especially in plants, how in life the less complex molecules are working not only in planes below those in which the higher functions are developed, but upwards by pacific penetration moderate where they do not command. How instantly such researches as these must govern the practice of medicine we perceive, for example, in the gum-saline treatment of surgical shock. It would seem indeed that some of the most mysterious phases of immunity and anaphylaxis, of phagocytosis, as also of narcotism, may depend, at any rate in great part, on surface action; and that the behaviour of lipoids released from disintegrating proteins may lower surface energy, as in the retention of water in renal dropsy; or again in a different field may determine the touch or the permeability of synaptic neurones. These, and such physical laws, as they are revealed to us, teach that the multiplication and co-ordination of surfaces, let alone their chemistry, are operations which do not arise in mere mixtures of the same ingredients. So far it seems as if all biological reactions are determined by physico-chemical laws—that is, by molecular structure. The laws of selective absorption, as revealed in incandescent vapours, might throw some light upon those of biology;

for in both fields we have to study vibration of molecular systems in unison, harmony or discord.

It is the business of an artist to create, but of the scientist to analyse and separate the elements of form, and to verify them by partial syntheses; and these physical and chemical categories—improperly called mechanical seeing that they are self-active and self-constructive—we have to exhaust before we search the skies for a "vital force." One chief direction of our work must be to find methods of serially reducing these planes of functions one by one, so as to suspend inhibitions stage after stage, and by taking it to pieces to reveal the construction of the organism.

BIOLOGY AND MEDICINE.

When we rise from physics into systems of biological activity two conceptions especially strike us as new and marvellous; namely, those of the colloids and of the cell. But throughout these systems we shall find the physical phases, if no longer constructively dominant, yet still active and effectual. We cannot even guess at the links of these chains where physics recedes and biochemistry takes the lead. The mere size of the molecules now concerned alters their relation to the spaces in or about which they move; not only so, but in organic compounds a mere change of position of a radical profoundly alters the properties of the compound and leads to manifold changes of function.

Often moreover these changes, as in the cases of Immunity and Susceptibility, do not vary gradually but by leaps and bounds, as musical flames respond to scales of vibration. Thus great diversities, contrasts, and strange conjunctions of morbid phenomena do not necessarily signify great divergence of nature in the morbid agents; so that again we cannot get very far by grouping phenomena by direct observation. Processes outwardly disparate may be alike at the core. A small and latent change of chemical constitution may turn a benignant into a virulent substance, and conversely; as we may see in such substances as cacodylic acid and the cyanides, or as saliva, serpent's poison, and trypsin; and so forth. On a small deviation in a secretion we may be destroyed by those of our own household.

How far are hormones a particular category, how far universals? Do they differ in nature from other secretions, enzymes, antisubstances, and so on? Do they by their interactions, compensations, and inhibitions cover the ground of concerted chemical action in kind, as the nervous system does in time; or are they few and peculiar to certain limited needs? Whether inhibitory or stimulatory may often depend rather upon the term of the series to which the hormone is applied than to a difference in quality. Merely to glance at such questions as these reveals to us how vast is the realm of knowledge yet unconquered; nay undiscovered.

. . . mazes intricate,
Eccentric, interwolved, yet regular
Then most when most irregular they seem.

A very interesting transition from physics to chemical biology is found in the phenomena of catalysis. By some elusive property certain inorganic substances—spongy platinum for example, or manganese dioxide—themselves unaltered, exercise an accelerating influence upon chemical change; properties which are utilized to-day on an enormous scale in industrial processes. Now by our increasing knowledge of biochemistry we perceive that the function of which the inorganic catalyst is a simple case, is manifested also in more complex orders by certain enzymes, or colloidal catalysts, upon which depends in great part the sweep of our health and of our diseases. In these enzymes which accelerate metabolism we may admire again, as in the simpler catalysts, the exquisite economy of energy in vital processes; how small the energy transactions may be, and these often reversible, which may compass great ends. A striking example of such economy is now being demonstrated to us in the calculated balances of voluntary muscular activity.

To illustrate the bearing of biochemical research upon practical work let us consider the value of what I may call for short "Ambard's constant," of which few practitioners seem to be aware; namely the standard of

non protein nitrogen in the blood. Yet here is an instance of laboratory work of immediate practical importance. Recently I had in hospital two elderly men suffering from prostatic retention and vesico-renal strain of degrees clinically inappreciable. Mr. Sidney Cole estimated for me the degrees of this non-protein nitrogen, and, taking the normal as about 50, in one of them the amount was 224, in the other 227. One of them had already undergone excision of the prostate, and as regards the operation successfully; but soon afterwards the man became uræmic and died. In the other case operation was of course declined; the man was sent home instructed in the use of the catheter, and for treatment for his renal condition.

The balance of hydrogen and hydroxyl ions in the blood, which, as in diabetes, may be a coefficient of many obscure and perilous symptom groups, and other conditions of ionization, such as modifications of secretion and enzymic action, of the heart-beat, of the constitution of the blood and so forth, belong to a subject now so well known as to need but an allusion; yet all this subject again is one not of direct observation but of profound physico-chemical research.

The economy of energy is nowhere more manifest than in the universal system of inhibitions; from the moment that a second field of energy is added to the first interferences occur, and inhibitions are established. Thus—to take a familiar example—thermotaxis is steadiest in man, though in him still tidal; is less steady in the child, as we see in the remittent type of its fevers, and so downwards to animals with no thermotaxy.

Thus we shall work on Aristotle's double track, the track of the one into the many and of the many into the one; and on the Heraclitean *pathos és áwa* and *és káto*. Permanent inhibitions are no doubt static and established in structure, but this need not be true, and probably is not true, of all inhibitions. Transitory inhibitions are probably occurring continually, both in health and under infections, and may be due to condensations on surfaces, temporary solutions, ionic conversions, hormones, and so on.

DIET AND NUTRITION.

Diet we shall say is surely a matter of observation and experience; on diet physicians have written, and written well, from and before the time of Hippocrates. Furthermore, during the last half-century the subject of dietetics has been strictly analysed on quantitative lines, and its energies calculated in caloric and other units. Yet even herein our attainment is far from complete. About this well worn, almost hackneyed subject a breeze of new and far-reaching ideas is gathering. Our balances, as in the children's milk, and in the analysis of the diseases of deficiency, are eluded by imponderables, by the infinitely little; our quantities are set at naught. For health and disease the new vitamins, like some other hormonal and enzymic imponderables, are as potent as they are intangible. Hormones work in infinitesimal ranks; and I believe no antibody has as yet been isolated. Once more we find that nature laughs at our formal categories, at our several compartments of protein as such, of carbohydrates as such; a straitlaced reckoning. No one class of foods, it appears, will build or burn without another; carbohydrate metabolism leans on the protein, the protein on carbohydrates, and all these on the fats, in mutual function; each of these is engaged in the totality of the chemical changes. For instance, deficient carbohydrate means deficient oxygenation of fats, and imperfect protein distribution.

Nor is this all; some of our great ancestors, likewise having penetrating ideas of the infinitely little, supposed that the sources of nutrition must contain a supply to every living tissue of the same form of minute identical elements; be it of bone, of muscle, of blood, of "nerve," and so forth; each being proper to its peculiar tissue to which it attaches itself (Homoeomerism). This crude notion, it is true, made no great way; still until lately we have all of us supposed some, if a more general, congruity of form between the nutritive elements and the qualities of their various destinations. But the study of the reduction of foods to amino-acids, and issues of like researches, are telling us to-day that there is no necessity even for the food proteins to be of similar constitution to the tissues which they subserve. To the almost magical part played

by certain elements, such as calcium, as stabilizers, or of the alkali-metals as labilizers of equilibrium I need but allude. The bearing of these dietetic researches upon practice, for example in the treatment of diabetes, are too obvious for reiteration.

If we turn now to the cell, as described to us by Virchow, we realize that our knowledge of this tiny microcosm is as yet only beginning. The infinity of extension is not strange to us, for some of it we can see; but the infinity of the universe of the little, which far escapes even our microscopes, does not strike the imagination. Still even of this inward universe and its intense activities, as by present research they emerge into the field of the mathematical physicist, of the spectroscopist, of the radiologist, of the physical chemist, we are beginning to conceive something. Man is no longer the microcosm, but the cell of which he is built. To our wonder we see that, even within such tiny spheres, some of them filtrable, are multiple systems moving in relative independence of each other. The cell membrane is formed chiefly perhaps by the physical processes we have considered. Yet puzzling and intricate as these reactions are, they are all-important to the physician; as for instance in the relations of the glomerular epithelium to sugars; its unerring discrimination between substances, even isomeric, in the blood, as between glucose and lactose; or again in the constant and subtle opposition of the normal intestinal epithelium to the entrance of poisonous elements, or foreign proteins, into the vessels and tissues.

SPECIFICITY IN BIOLOGY.

When Professor Nuttall demonstrated to me his first precipitin reactions I wondered at the prevalence, in the labile fields of biology, of a specificity like the static identities of the inorganic; a specificity moreover not in cell structures only but also in their products, and in the animal juices. How far this individuality extends to the cells and saps of plants I do not know; but in animals we see at once how the native juices resent the invasion of an alien, not only of enzymes and colloidal bacterial toxins, but of normal foreign serums. Even among lice and fleas each species has its specific host. But it seems inconceivable that the body should keep in store an armoury of antisubstances to meet every possible antigen; is there not some more general potential from which the specific response is more or less determined by the peculiarity of the invading material? Thus the use of tobacco, for us only three centuries old, after a while calls forth in the liver an antisubstance to resist it; a slowly gained immunity, it is true, but perhaps not unlike in kind. There is some evidence that antisubstances may adapt themselves to the chemical form of the antigen which calls them forth. It is said that, at any rate in anaphylaxis, there is a margin of mutability or lability—as distinguished from neutralization or digestion; something, as observed with approximate antigens, short of absolute specific stability. Some suppose a certain adaptability or elasticity, which, while bending to variable stresses, may be consistent with a fixity of specific structure. The almost startling success of a vaccine or serum now and then amid a series of disappointments, indicates however that some close specific correspondence is necessary for success, and must be exacted in our methods. At any rate the closer the correspondence the less the time and dose required. We must "run it fine." In the cells themselves, even in the lowest bacteria, molecular elasticities seem so far defined in direction that specificity is surprisingly stable; although, in such rudimentary forms of life, lability, and even mutation, might have been expected. Indeed in serology and agglutination we seem to be compelled to steer an exact course between strains of bacteria so akin as the several typhoids, meningococci, coliforms, diphtheroids, and even tetanoids. Yet probably some of these variations are not so individual but that they can have preferential affinities and antagonisms outside their main characters, and show a relative sensibility to various antigens. On the other side of the subject a curious comparison may be made with those species, more obviously of plants, in which, as in the poppy, the foxglove and the calabar bean, antagonistic substances abide together undisturbed.

Moreover there are contingent conditions to be reckoned

with, auxiliary or hostile; such as concentrations, ionic reactions, surface actions, and subsidiary co-operative substances. Indeed the effect of a vaccine in saving a patient from a virulent infection is hard to understand; it is hard to see how a man can be saved by instilling yet more of his disease. It may be that the vaccine calls forth a response from the deeps, antisubstances or co-operative agents, from some remoter regions of the system, which the primary infection had not awakened.¹ We are told that in typhoid fever the vaccine, especially if repeated, calls forth stronger antisubstances than does the primary infection.

Among the gravest of medical problems is this of chronic infections. How far are the conditions which shorten the full span of life implicit? How far due to the effects of poisons working insidiously over many years? Do we die by natural gravitation, or "driven from our orderly spheres"? In this abstruse inquiry laboratory research must go hand in hand with clinical observation. No less urgent is the wide and manifold question of carriers: what in them are the conditions of bacterial survival, and what the means of extirpation of their parasites?

IMMUNITY AND ANAPHYLAXIS.

From specificity we may go forward to the subject of Immunity and Anaphylaxis, one on which I hardly dare speak before this audience. In this sphere of science and practice throughout the war you have fought with the foremost. I am but a child in this matter. Like a child I was fascinated by the side-chain hypothesis of Ehrlich, which, whatever its ultimate truth, has been at least a scheme welcome to give some order to swarming facts and ideas. The term antigen may be enlarged to signify any protein, or unknown substance closely bound to protein, which is foreign to the species into which it is introduced. It is said that in the course of a disease anaphylaxis may so intervene as to appear as part of the original malady; that, for instance, certain features in syphilis called parasyphilitic are but anaphylactic. But even here, again, we may have to deal in considerable part with physical laws: the fixation of complement may be due to adsorption, and a colloidal precipitation at the surfaces of sensitive cells may modify their permeability. Bacterial toxins may all be colloidal; and protein may be inseparable from such antigens as animal extracts. The sudden, often instantaneous, onset of influenza, and likewise, after a long period of dejected convalescence a release as sudden, suggest that the toxin may not necessarily enter the cell and work its evil therein, but may adhere for a while to the tissue elements, and after a variable interval detach itself. So again the well known but very remarkable cases of insanity in which intervals of health prove the nervous structures to be unimpaired, suggest adsorption, or temporary alterations of a physical kind in cell permeability. Nevertheless the hereditary element in these cases indicates that in such patients there is a co-operating proclivity, which, however, as probably in the case of pulmonary tuberculosis, may depend upon a local warp of structure. To attribute it to a "soil" is mock knowledge, and perverse at that; soils do not attack but cherish the implanted germ. The no less remarkable alterations of sensitization and desensitization may in like manner depend on molecular physics.

With the large, various and recondite problems of psychology, accentuated and multiplied by the war, it would be impossible within these limits to deal even summarily. But two aspects of the subject I cannot leave unnoticed; the problem of fatigue, and the calculation of individual faculties for particular kinds of work; the proper distribution of the round and the square men. For the field of psychology adaptations are to be ascertained in a manner analogous to that of the selection of airmen. Here again laboratory research is laying the foundations for precise knowledge in a sphere which voices of the mist had proclaimed as their own; where they had ruled opinion, and even declared themselves irreducible to law. Reason, it is true, is our last and least organized faculty.

STATISTICS.

The study of Statistics, not long ago the prey of the scoffer, is, under academic methods, such as those of Brownlee and Greenwood, emerging as one of our most potent instruments of practical medicine, both on its prophylactic and on its interpretative side.

COMPARATIVE PATHOLOGY.

I have dwelt upon the isolation of the academic from the clinical worker; but I have to denounce an insularity even more blinding than this; the almost complete lack of any systematic provision for Comparative Pathology. As I urged upon this Association in my Address in Medicine at Glasgow in 1881, and persistently since, in Medicine we are still in the Ptolemaic stage of ideas; we are still anthropocentric. And Veterinary Medicine in its several compartments is still more narrowly confined. Even among mankind, research on the Ethnology and Geography of disease has been but fragmentary; incidental studies with no comprehensive view; and yet with the disturbance and redistribution of peoples the study of racial and regionary pathology is becoming less and less possible.

Do the children of the darker people in towns outlive the fair? and if so why? Are the darker people gaining in numbers upon the fair? We have to learn how diseases vary with the systems of external relations, the conditions of time and place, of season and soil, race and temperament; and this not in higher organisms only, but also in the lower and lowest. Hysteria is, or was, rare among our Yorkshire folk.

Again, the facts of heredity in disease, hard to gather in long living Man, are comparatively easy to collect in animals and plants. What is the extra vigour of cross-breeds? Has each strain of pedigree stock its own morbid proclivities, so that we might compare the several series of each kind?

Yet as the individual is but a link in the chain, so the human chain is a strand in the web of all living things. We must know all disease to understand its several phases. *Nemo alicujus rei naturam in re ipsa feliciter perscrutatur.* "Every class of animals," says Sir John Bland-Sutton, "is distinguished by anatomical details, habits of life and milieu from other groups, differences which involve liabilities to certain diseases, immunity from others. So far as our present knowledge extends we know that certain diseases occur with extreme frequency in one class of animals and are rarely seen in another." We want then natural groups and groups in natural series, and this means all life. How far have we got in the classification of all disease which, on a natural system, is a measure of our knowledge of it? Changes which are morbid in man may be normal in lower creatures; such for example as the large sequestrum of the antler of the stag. Why is cancer almost unknown in wild animals, caged or free? It is said to be unknown among the Esquimos. This cannot be due merely to average age. If atheroma of the great vessels, or of those of the limbs, is not found in old horses or cattle, why is it not? Is it due to special products of catabolism? Phlebitis is, I believe, rare in animals. What is the relation of the mucin retrogression of myxoedema to the like connective tissue of the fetus, and again to the tissues of certain lower animals? Is a gouty man a kind of bird? How large is the field for the study of racial immunities—of the resistance of certain silkworms to the silkworm disease; of Cochlin China fowls to chicken cholera; of the field mouse to the septicæmia so common in the house mouse (Pasteur); of the Algerian sheep to anthrax, of goats to tubercle, of dogs to glanders (as contrasted for example with the guinea-pig); of Darwin's Florida black pigs to bloodroot, and of the susceptibility of the white pigs to buckwheat? How curious is the tolerance of rabbits to morphine! What do we know of rheumatic fever and carditis in animals? In what respects does a theromorphie heart differ from that of an intrauterine endocarditis? In the fundamental phenomena of life in animal or plant there is a fundamental unity, and as in different organisms these are variously ordered cross-lights are thrown upon their origins and serial distributions. Some animals or races seem more disposed to mesoblastic diseases; others to nervous disorders; and so on. By observing organisms thus in

¹ I leave these words as written two or three weeks ago, and long in my mind. Sir Atmore Wright has since expressed a similar opinion with an authority and force to which I cannot pretend.

many series we may unravel the constituent parts of the more complex in a way which we cannot do by dissecting these from level to level. As some one wittily remarked, "a minster in decay does not break up into parish churches." But a study of parish churches has thrown a flood of light upon the growth of minsters. Comparative Pathology is needed therefore to indicate steps of development, so that we may not contemplate diseases merely as injury or dilapidation but also as phases of biology. Each advancing stage is longer in building than that below it. Some phases are better studied in lower creatures, even in plants; some better in the more complex.

FOR THE FUTURE ?

I have glanced thus rapidly over the field of the medical sciences to reinforce the lesson of their profound and instant bearing upon practice, and the need of linking up the laboratory with the wards. This lesson, this need, I have urged for many years; for instance at the Annual Meeting of the Medical Society of London in 1907 I urged upon the great schools in England the vital importance of establishing professors of Medicine, Surgery and Gynaecology, as middlemen between the isolated academical worker and the practitioner, between the field of immediate interests and the field of ideas. If I am not a practical man I am nothing, but still I am convinced that only by disinterested research on the large patient and prophetic lines of the pure sciences can progress be made. The isolated academic worker, as well as the practitioner, loses by this isolation; he loses the spontaneous outcroppings of problems and crucial instances which so often spring up in practice, but fail to show themselves in the laboratory. So complete and mischievous however has been the barrier between research and the industry of Medicine that a reaction from "laboratorism" to symptomatology has set in, because there are no intermediary workers—no engineers—between the knowledge getters and the knowledge dealers. Thus we see the laboratory investigators completely out of touch with practice, and practitioners faithless of theoretical principles—just "Philistines." A few years ago my own University, or certain members of it, discouraged the establishment of a brewing school for which endowments were offered; utterly ignorant and careless as they were that Pasteur's great discoveries began in the wine vat.

There are then three ways in which Principles may be used. They may be taken for granted in a routine dexterity without being understood, as are those of electricity by telephone and electromotor operators and laboratory attendants, in the manner of a blind man tapping with his stick; or they may be fully understood and developed, as by the academician; the third way is that of the technical professor who receives and digests so much of the abstract science as concerns his own industry. Thus as the engineer is something of a mathematician, something of a physicist, so the professor of Medicine must be something of a physicist, something of a biochemist. Through these middlemen the scientist and the practitioner should mutually feed each other. The absence of biochemist and pathologist from the bedside where lies the stuff of their researches, is lamentable. In every adequate clinical school then there must be a *professoriate*; whole time—or nearly whole time—professors, with technical laboratory, biochemical and pathological, who with their assistant staff shall be engaged continually in irrigating our profession from the springs of the pure sciences. From them should radiate what is called an "atmosphere" through the wards; for it is true that the professor himself will be less occupied in teaching the ruck of students; he will gather about him some senior students and all the younger graduates who still frequent the wards. Moreover I quite agree that for variety of reflection and resources there will still be no less a place than as at present for the classes of the Honorary Staff.

POST-GRADUATE SYSTEMS.

Now, in conclusion, this is the true and only factory through which the post-graduate systems, so much needed and discussed, can thrive and develop. For such reasons I could not see my way to co-operate in the scheme, now being proposed, of post-graduate courses to attract men of other countries, and of our own. This scheme was tried devotedly and most ably by our late dear and brilliant colleague Jonathan Hutchinson. But being founded on no professoriate it had no roots; when Hutchinson was gone the scheme dried up; and it will dry up again unless it be an outgrowth of a scientific system, and flourish on the stem of a professoriate and be rooted in the ward and the laboratory. A post-graduate scheme consisting of desultory side-shows will not continue to draw serious visitors. The visitor wants not cut flowers but a nursery garden. If students are to come to study Medicine in England—for these strictures apply particularly to England—there must be something large and creative for them to come to. Given a professoriate, the special departments of our great hospitals offer a rich soil for the scientific garden, and a larger and more liberal outlook than the islands of the several specialist hospitals. We know in Cambridge how advance is forwarded where laboratories are close neighbours. Science is as intolerant of limits as of dogmas.

It is true that much has been done of late to stimulate and enlighten both medical men, the public and the services concerning the need of systematic pathological investigation, but the mulish aversion from such pursuits often passing into active animosity, is by no means yet extinguished in the national services. Actual discouragement of research work, in some quarters perhaps at home, in many I fear abroad, is still by no means unknown. Young men, as ardent for knowledge as for their regular duties, find that pathological inquiry, and even laboratory appointments, lead to no promotion, may entail positive sacrifices of pay and other advantages, and sometimes indeed vindictive reprisals. As the more antiquated traditions of the services are dispelled things will mend; the sympathetic response of the India Office but the other day to a deputation on this matter promises well for the future; notwithstanding there are yet many dark places in the Empire which need the lantern and the besom. Not only must laboratories be established in all Colonies and Stations—and, let me add, in every English county, a scheme which was provided for by Mr. Lloyd George in the Budget suppressed by the war—but these and their workers must be restored to the full stream of official recognition and reward. It is sad to think of the many men of talent, even of genius, who have been thwarted so long in their devotion to research that the benefits which they could have bestowed upon mankind have been maimed, or frittered away.

But now the politician, throwing up his hands, exclaims: What is to be the cost of all these medical developments; academic, laboratorial, professorial, prophylactic, and so forth? We answer. What has been already the cost of *laissez faire*? What was the cost in money, life, and war of the typhoid epidemic in South Africa? And, to come nearer home to the politician, what, for example, is the national cost, well expended we gladly admit, of the profession of the Law? To what do the well earned salaries of lawyers amount, taking those only from—say—£1,200 to £5,000 a year?—not to mention the still greater offices! The salaries of medical officers of health including the highest, do not average £800 a year; yet in hours of work, subject matter, professional education and range of knowledge in daily use, the function of the Medical Officer is surely larger and more exacting than of a Stipendiary Magistrate or County Court Judge. The truth is society has long taken its law, as being the more obvious function, for granted. Robbers came out of the neighbouring forest, but diseases were as God pleased. The depth and powers of medicine the public has yet to learn and realize. Moreover medical men, innocent angels as they are, have given so freely of their best to the public that for them to look for payment, other than in after-dinner compliments, seems too worldly to be credible.

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SECTION OF MEDICINE.

WAR NEUROSES.

INTRODUCTION TO THE DISCUSSION.

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THE importance of the subject which I have the honour of introducing is obvious from the fact that in no previous war has there been such a vast number of men disabled by functional nervous disease. But in no previous war have such conditions existed; they are:

1. Unprecedented exposure to the continuous physical effects of high explosives and poison gas and to all the developments of scientific barbarism. Moreover, the periods to which men have been exposed to the terrifying effects of modern trench warfare have exceeded all previous records. According to my experience the most serious cases of war neurosis occurred in 1915 and 1916, when men were unrelieved for weeks and when they were continually on the defensive, out-manned and out-gunned. Such conditions are quite different from a war of movement.

2. The conscripted army has included all sorts and conditions of men, and we have now found out, by the immense number of soldiers discharged from the service as permanently unfit, what a large proportion of the male population of a highly civilized country possesses a neurotic or neuropathic predisposition. In 1917 it was calculated that one-third of the unwounded and one-seventh of the total discharges, including the wounded, were permanently unfit on account of functional nervous or mental diseases.

The War Office authorities recognize three forms of war neurosis—more strictly speaking, psychoneurosis—namely, shell shock, hysteria, and neurasthenia.

It is not my purpose to describe in detail the symptoms of these three affections, which frequently merge. It is my object to promote discussion regarding some of the debatable points.

"*Commotio Cerebri*" or "Shell Shock."

I will, then, first consider the question of shell shock. There is no doubt that this term was an unfortunate one, and led to a considerable amount of misconception. It was a very natural conclusion, at first, that men who had been exposed to the unprecedented stress of bombardment should suffer from *commotio cerebri*. But a great many men who have been returned as suffering from *shell shock* would have been more appropriately designated *shell shy*. It is extremely difficult to differentiate commotional shock from emotional shock, for both may be attended by a state of unconsciousness followed by hysterical or neurasthenic symptoms. Still, there is no doubt about it, men do suffer from commotional disturbance of the brain without any signs of injury on the body, and that they are the subjects of organic changes, due to the forces generated by the detonation of high explosives, especially when they are in enclosed places, such as dug-outs or narrow trenches, where the full effects of repercussion can occur. The proof of this is shown by the fact that the cerebro-spinal fluid, withdrawn by lumbar puncture, contains blood, macroscopic or microscopic, and it comes out under pressure and contains albumin. Moreover, the frequency with which rupture of the drum of the ear, deafness, labyrinthine changes, and voltaic vertigo occur shows that the forces generated by the explosion are sufficient to cause a commotion of the brain as severe as might be caused by an actual blow on the head by a sandbag.

Further proof has been forthcoming in the examination of the brains of two cases in which no visible signs of injury were found on the body, and in which I found microscopic haemorrhages throughout the brain, including the medulla. In one case the man died suddenly from heart failure; there was a haemorrhage in the median raphe of the medulla close to the nucleus of the vagus accessorius; there was also a haemorrhage in the lung. Had there not been fatal cardiac syncope, there was no reason why he should not have recovered without showing any gross nervous symptoms. By this I mean to say that a number of cases of true shell shock suffer with minute haemorrhages insufficient to cause any permanent neurological symptoms, and their importance is rather as expressing a severe commotional disturbance caused by the explosive forces. Mairet and Durant have shown experimentally on animals similar minute haemorrhages in the brain and the lungs; likewise Crile.

The Inborn or Acquired Emotivity as a Factor in Psychoneuroses.

A soldier who has an inborn or acquired emotivity will sooner or later suffer with a psychoneurosis. A shell bursts near him, he sees the flash, is blinded by it and remains functionally blind; or some poison irritates his eyes and he is affected by a continuous blepharospasm. He hears the explosion and is temporarily deafened by the noise, and remains deaf. He is blown up, and perhaps falls heavily on the ground, or is buried with earth in a crater or dug out, or a sandbag hits him. When he recovers consciousness he may be affected with a spasmodic tic or convulsive movement of a defensive nature, such as the dodging-reflex; or he may be affected with one of the many forms of hysterical tremor, paralysis or contracture. These varied and multiform hysterical manifestations are psychogenic in origin and due to emotional shock. They are curable by contra-suggestion. In true shell shock with hysterical symptoms there is always a residual neurasthenic condition which does not yield to persuasion.

When the physical forces generated by the explosion are sufficient to cause physical shock as well as emotional shock, the case is then complicated by two factors, the commotional and emotional.

The Army Form W. 3,436, which accompanies the evacuated soldier, gives information as to whether the shell burst so near him as to justify the assumption that commotion was the essential agent in the cause of the symptoms for which he was evacuated. This would be strengthened by the fact that he was unconscious or so dazed as the result of the shock that he either had to be carried or taken to the clearing station—especially would it be justifiable to classify the case as a *battle casualty* if he were buried and had to be dug out, or suffered contusions as a result of having been blown up.

Still, many facts show that individuals with an inborn or acquired emotivity can suffer so severely from emotional shock as to be rendered unconscious or so dazed as to necessitate them being taken or carried to the clearing station. It is therefore extremely difficult to decide from the symptoms alone whether the case is commotional or emotional or both. The only way to decide is by a careful investigation of all the facts, notably the length of time the man has been on active service at the front, and his conduct as a soldier prior to the occurrence of the shock. Another important piece of evidence is the loss of consciousness. The period of time varies from a few hours to a few days in the most severe cases.

Quite early in my experience at the neurological section of the 4th London General Hospital I found that the war neuroses and shell shock cases had, in the majority of cases, an inborn or acquired disposition to emotivity. The same conclusion was arrived at by eminent French and German authorities. Captain Wolfsohn, U.S.A.M.S., investigated the personal history and the leading nervous state of 100 of my cases of war psychosis and 100 cases of wounded, and he came to the same conclusion.

No New Nervous Disease in War Neuroses.

The war has produced no new nervous disease; it is the same hysteria and neurasthenia which neurologists knew before the war and which were curable by the same methods. A fact which has been brought home to all those who have had the care of war psychoneuroses is

that the signs and symptoms of hysteria and neurasthenia of men who have been to the front and have been invalided home (except those in which there has been definite evidence of cerebral or spinal commotion or concussion, burial or gassing) in no way differ essentially from the signs and symptoms of hysteria and neurasthenia of soldiers who have never been out of England.

I have seen both hysteria and neurasthenia arise from the fear of conscription, or having been conscripted an hysterical crisis, contracture or paralysis has occurred when it became known that the conscript would be in a draft for general service abroad.

Inoculation has been followed by hysterical paralysis. I may mention one case which was recently sent to me. He was inoculated in March, 1915, and a quarter of an hour after he lost the use of his legs. He was sent to various hospitals and had brine baths. He was then boarded out of the army and received a pension of £2 12s. per week for himself, his wife, and family. He was sent to me by the Chelsea Pensions Board, arriving with crutches and a contracted knee. He was induced to walk in half an hour, and in a week was discharged cured.

I have observed that hysterical manifestations, especially mutism, paralysis, and contractures, are much more frequently met with in the men than in the officers. The latter more often suffer with an anxiety neurosis.

Severe Shock may induce Hysterical Manifestations in a Neuro-potentially Sound Individual.

The great importance of the inborn or acquired neuropathic tendency in the production of the symptoms and signs of hysteria and neurasthenia cannot be over-emphasized. At the same time it must be admitted that shock—and by this I mean not only commotional but the emotional shock—due to terrifying or horrifying conditions of this war, may induce hysterical manifestations in a neuro-potentially sound individual, in fact, in a soldier who by his record has shown that he is neither of a timid disposition nor has any neuropathic tendency.

Automatism and somnambulism, like the hypnotic state, is caused by a dissociation of the field of consciousness from perceptual stimuli, and is regarded as a characteristic symptom of hysteria. Indeed, Janet bases his definition of hysteria on this dissociation. Yet cerebral commotion, caused by the bursting of a large shell, may, as the following case shows, bring about in a neuro-potentially sound individual a condition of automatism—a state which Maurice Dide terms "battle hypnosis."

A captain was admitted under my care, and gave the following history. His company had dug themselves in, in a wood; he went out into the road to see if a convoy was coming, when a large shell burst near him. It was about 2 o'clock in the morning and quite dark; about 4.30 a.m. it was quite light, and he found himself being helped off a horse by two women who came out of a farmhouse. He had no recollection of anything that happened between the bursting of the shell and this incident. It is interesting to note that it is possible for him to have inhaled noxious gases, for the single cigarette in a metal case that was in his breast pocket was yellow on one side, due, no doubt, to picric acid contained in the explosive, which indicates the near proximity of the exploded shell.

Again, hysterical contractures and paralysis may arise as a result of shock in which there is commotio cerebri associated generally with emotional disturbance.

I have recently cured an acro-contracture of the hand of a young officer who suffered with shrapnel wounds of the left forearm and hand in May, 1915. This officer at the time of the injury lost consciousness, and when he came to he found the contracture. It has persisted ever since. Once the hand was opened under an anaesthetic, but the contracture returned almost immediately. He has been out to France with the contracture, and is in no sense an hysterical subject, but possesses all the qualities of a good soldier.

FUNCTIONAL PARALYSES AND CONTRACTURES.

The more important and evident manifestations of hysteria are those which provide the patient with a means of escape from an intolerable situation. These have been called by MacCurdy "conversion hysterias"—a useful term, as it represents a well recognized fact, that the motor and sensory disabilities are due to an idea being translated into a physical symptom. The paralysis or contracture may come on immediately after the shock, but is usually emotional; or it may come on after a period of meditation.

There may be three stages in the development of hysterical paralysis and contractures:

1. Often pain caused by injury induces an instinctive reflex defence reaction of immobilization of the affected part.
2. Psychogenic, in which the mind reacts and the idea is developed that the disability will relieve the individual from a situation which he fears—namely, return to the front.
3. Late phenomena of prolonged immobility—namely, disuse, wasting of muscles, fixation of joints, associated with vasomotor, thermal, and secretory disturbances.

Babinski's Theory of Reflex Contracture.

Babinski and Froment prefer to keep the term "functional" for those motor disorders which can be cured by psycho-therapy, and they put in a special category reflex contractures and paralyse arising in consequence of a wound or traumatism, which, without showing the characteristics of motor organic disease, can be distinguished from functional disorders by the absolute inefficacy of physio-psycho-therapy. They state, moreover, that these reflex disorders may be distinguished from hysteria by the following signs:

1. Vasomotor disturbances, often occupying the whole of the affected limb, or a segment of it—namely, cyanosis, blue markings, salmon red coloration.
2. Local hypothermia of a more intense degree than in hysteria.
3. Muscular atrophy; moist skin, sometimes even of a macerated appearance; rarefaction of the bones revealed by x-ray examination; muscular hypotonus at the level of certain articulations; mechanical hyperexcitation of the muscles corresponding to modifications of electrical excitability; disappearance of the contracture under profound anaesthesia; and, in deep anaesthesia after the extinction of all the other reflexes, a clonus of the patella may be induced in the affected leg.

The general trend of opinion now is that Babinski's theory will fall to the ground—that all these conditions which he asserts cannot be cured by physio-psycho-therapy and which he believes are due to reflex influence on the spinal cord, or to the sympathetic nervous system, can be produced by prolonged immobilization of a limb.

A case recorded by Roussy was the first to throw doubt upon Babinski's theory, for his patient suffered with all the vasomotor, secretory, and other disturbances which Babinski points to as characteristic, yet these disappeared after the patient's limb had been rendered mobile by physio-psycho-therapy.

For some time past a large number of cases of soldiers and pensioners suffering with wounds associated with prolonged functional immobility have been treated successfully by Captain Golla and myself. They may be divided into three classes: (a) Wounds, without an injury of nerves, associated with functional paralysis or contracture, many of long duration, even years. (b) Gunshot wounds with injury of nerves associated with organic and functional paralysis or contracture. (c) Wounds of nerves causing organic paralysis and contracture.

My opinion is that a wound associated with a purely functional paralysis or contracture is more difficult to cure; and in such a case this difficulty is due not to a reflex mechanism, but to the continuous suggestion which a wound offers to the mind of the patient that the disability is due to it—especially when this has been steadily reinforced by doctors and pension boards, who have regarded the wound as the cause of the paralysis or contracture.

Hundreds of functional cases, with and without wounds, have been admitted to the Maudsley Neurological Hospital and have been cured by Captain Golla or myself in a few minutes to a few hours, a few hours to a few days, or a few days to a few weeks, although some of the cases of paralysis or contracture have persisted many months or even several years. Occasionally a case has occurred of a wound in which a nerve has been involved—for example, the median, and a partial functional contracture has resulted ("main accoucheur") which did not disappear under deep anaesthesia. Myogenic changes must have taken place.

THE PSYCHOLOGY OF FEAR IN RELATION TO NEURASTHENIA.

In comparing the prolonged trench warfare of 1915-17 with the war of movement of more recent date in relation to the production of war neuroses, we are able to consider the biological aspects of various defensive reactions for self-preservation and racial preservation.

The instincts connected with the emotions of fear and anger are all-important, but the herd instinct is equally so, for morale, good or bad, in a regiment is largely dependent upon the instinctive suggestibility of man. A British general is reported to have said that "10 per cent. of a regiment will follow you to the gates of Hell, 10 per cent. will fall down or run away, and the remaining 80 per cent. will follow either." We may, therefore, suppose that in 10 per cent. the primitive emotion of anger, with its instinctive reactions, was an inborn dominant feature in the personality, and to fight was the instinctive reaction of self-preservation. In 10 per cent. fear was a dominant feature, and the instinctive reactions were flight or concealment. In the remaining 80 per cent. it may be supposed that the primitive emotions are fairly equally represented; consequently they tend to follow either. Given a good leader in a war of movement, the excitement of battle will arouse in them all the instinctive reactions of anger, so well portrayed by Shakespeare (*Henry V*, Act III, Sc. 1), and quoted by Darwin in *The Expression of the Emotions*. In modern trench warfare anger is impotent; the soldier can neither fight nor take refuge in flight; he can only adopt the crouching attitude of immobility and concealment—the instinctive reaction of a timid animal when threatened with danger. Darwin writes:

The frightened man at first stands like a statue motionless and breathless, or crouches down as if to escape observation; the heart beats quickly and violently, so that it palpates or knocks against the ribs; the skin becomes pale, due to constriction of the small arteries of the skin; perspiration exudes from it. This exudation is all the more remarkable as the surface is then cold, hence the term "cold sweat." The superficial muscles shiver, the breathing is shallow and hurried; the salivary glands act imperfectly; the mouth becomes dry. One of the most marked symptoms is the trembling of all the muscles of the body, and this is often first seen in the lips. From this cause and from the dryness of the mouth the voice becomes husky or indistinct, or may altogether fail. *Obstupui, steteruntque comae, et vox faucibus haesit.* (Darwin, *Expression of the Emotions*.)

Adopting this description of the fear reaction to the case of a man in the trenches who cannot adapt himself to the situation, he will suffer with continuous organic changes, the result of the emotion acting on the autonomic centres.

These organic changes and biochemical changes produce by repercussion profound effects on the mind and its affective tone. The psychologist James says:

"Our natural way of thinking about these coarser emotions is that the mental perception of some fact excites the mental affection called Emotion, and that this latter state of mind gives rise to the bodily expression. My theory, on the contrary, is that the bodily changes follow directly the perception of the exciting fact and that our feeling of the same changes as they occur is the emotion." Again: "If we fancy some strong emotion and then try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we have nothing left behind."

Applying James's premisses to the psychology of fear in relation to the symptoms of war neurosis, I put forward this proposition for discussion: that inasmuch as the terrifying experiences remain continuously operative in the subconscious mind long after they happened, as shown by the frequency and persistence of terrifying dreams and many of the bodily reactions of fear already described, are we to assume that the organic reactions excite the dreams or that the imagination provokes the physical reactions?

Dreams and their Effects.

It does not follow that, because a patient does not recollect his dreams, his subconscious mind has not been active. There are many facts that prove the contrary. Ideas in sleep may be clearer and broader even than in the waking state, for a man in such times is not sensible of his body. In the dreams of soldiers, ideas of past war experiences are revived with great vividness in the great majority of cases, even in those who are unable to recollect their dreams. For besides those patients

who wake up in a fright and cold sweat, there have been numerous instances of soldiers who have walked in their sleep, and many others who have talked, shouted out orders, and cried out in alarm as if again engaged in battle (not a few of these have been mutes). But the strangest phenomena of forgotten dreams of soldiers suffering with shock are observed in those who in their sleep act as though they were engaged in battle, and go through the pantomime of fighting with bombs, with bayonet, with machine gun and with rifle, and yet remember nothing of these happenings when they awake. Evidently during their sleep vivid imaginings of their previous experiences are arousing defensive and offensive reactions in face of the imaginary enemy.

I explain the fact that the neurasthenic, who so frequently suffers in the early morning with symptoms of nervous exhaustion and irritability, owes this condition to the exhausting effects of dreams which he may or may not recollect. Such an effect wears off as the day advances.

We can understand how the effects of commotion, burial, gas poisoning, and the profound emotional effects of horror at seeing comrades blown to pieces, or terror at the fear of impending death, may conspire to produce a condition of shock followed by neural exhaustion of the higher controlling centres and a continuous emotional excitation of the subconscious centres, due to the revival of past experiences. Whether we accept the James-Lange theory of the emotions, that the organic bodily changes of the emotion of fear reverberate in the mind and serve to arouse the feelings, or the theory of the perceptual feeling of fear preceding the organic changes—at least, we must admit the existence of a vicious circle. In support of the theory of an organic disturbance reviving a terrifying experience, we are familiar with the fact that an indigestible supper will cause nightmare.

Objective Signs indicative of Bodily Changes in Neurasthenia of Soldiers.

What is the evidence in favour of persistent bodily changes occurring in soldiers suffering with shell shock neurasthenia, especially when trench warfare was taking place?

A large number of soldiers were admitted under my care suffering with severe neurasthenia; about 10 per cent. showed some symptoms of Graves's disease, palpable thyroids, exophthalmos, von Graefe and Möbius signs, fine tremors 9 to 10 per second (indistinguishable from the neurasthenic tremor), tachycardia, acrocyanosis, hyperidrosis, and hyperacusis shown by the starting reflex.

In many cases the blood pressure was higher than normal, especially in cases where there was an anxiety neurosis. There were indications, therefore, of an increased amount of adrenalin in the blood, as there was undoubtedly an increase of thyroid secretion in many of the cases.

Crile, in his lecture on the *Kinetic Drive*, asserts that there is an interrelation of function of the medullary adrenalin substance—the thyroid and the brain. "Environmental stimuli reach the brain and cause it to liberate energy, which in turn directly or indirectly activates certain other organs and tissues, among which are the thyroid and adrenal glands." The resemblance in the facial expression between chronic emotional activation and Graves's disease, and the frequency with which this disease is traced in civil life to an emotional origin, point to the conclusion that the fear-affect is still operating in these war neuroses. As the dreams become less troublesome and give place to natural sleep—"the sweet, unconscious quiet of the mind"—so these symptoms disappear, the blood pressure falls, the pulse slows, and the other bodily changes mentioned disappear. That the increased secretion of adrenalin in the blood occurs as a result of fright has been shown experimentally by Canon and Elliott. This may be regarded as a biochemical defensive mechanism for self-preservation, for it raises the blood pressure and causes an increased quantity of glycogen to be converted into sugar—the energy substance of the muscles—thus enabling the animal to prepare for fight or flight. This is effected through the stimulus of the autonomic centres in the medulla and the splanchnic nerves. May not also the increased activity of the thyroid be regarded as a biochemical defensive action to restore the exhausted neurons?

Changes in Central Nervous System in Hypothyroidism.

It is well known that hypothyroidism is associated with slowness of thought, of speech and of volition; and I have shown in a number of cases exhaustion of the neurons in myxoedema. The chromatolysis of the nerve cells in advanced cases is most pronounced throughout the central nervous system. If we regard this stainable substance as representing kinetoplasm or energy substance of the nerve cell, we may consider this an explanation of the symptoms of the disease. It seems highly probable, inasmuch as these neural symptoms disappear with the administration of the thyroid gland.

MacCurdy noticed—and I can corroborate this—that in cases of war neurasthenia there is a profound effect upon the sexual organs—sexual desire is largely in abeyance, owing to the preponderance of the emotions connected with the instinct for self-preservation. This fact is also noticed in Shakespeare in Lady Percy's speech to Hotspur (*Henry IV*, First Part, Act II, Scene 5).

Influence of Body on Mind.

Many cases of neurasthenia suffer with profound disturbances of nutrition, and grave alterations of the personality are connected with changes of nutrition and metabolism. The individual feels depressed, and the success of the Weir Mitchell treatment depends, not only upon the effect of isolation upon the morale of the patient, but upon the restoration of normal nutrition of the body, thereby the restoration of neural energy.

In fact, while fully admitting the importance of psychotherapy and its great success in hysteria, I feel that in the case of neurasthenia, brought about by war stress, it is equally necessary to treat the disordered functions of the body.

I am reminded of a story told of Voltaire and an Englishman. When both were feeling very depressed they entered into a compact to commit suicide the next day. The Englishman appeared the next morning, and Voltaire is said thus to have addressed him: "Ah, Monsieur, pardonnez-moi, j'ai bien dormi; mon lavement a bien opéré, et le soleil est tout-à-fait clair aujourd'hui." Its moral is the influence of the body on the mind.

Suggestion: its Influence on Body and Mind.

Suggestion, or the affective relation of the doctor to the patient, is considered usually only in regard to its curative influence. But, according to my experience, injudicious suggestion unfortunately is not uncommon, and has the converse effect. Take, for example, the neurasthenic who is suffering with cardiac symptoms, who is diagnosed as suffering with D.A.H. (disordered action of the heart). The patient's mind thereby dwells upon his heart and its disordered action: it becomes an anxiety to him. While this is so, the heart's action will remain disordered. It would be better if this term were abolished and simple neurasthenia adopted in its place. Every organ and structure in the body is represented in the field of consciousness, but the stimuli arising from them only arouses consciousness of their existence when they are above or below normal intensity, or when their rhythmical, phasic, or periodic character varies from the normal.

The consciousness of the existence of an organ or structure interferes with its normal automatic or habitual actions.

The sense of well-being, of *joie de vivre*, depends upon normal organic sensibility, especially upon the normal action of the heart, expressed in Shakespeare thus:

My bosom's lord sits lightly in his throne,
And all this day an unaccustomed spirit
Lifts me above the ground with cheerful thoughts.

I have dwelt upon the organic side for the express purpose of promoting discussion and not because I do not regard psychotherapy as an important agent in treating the functional neuroses, but I am of opinion that it is especially valuable in hysteria, or as Babinski prefers to term it, pithiatism—meaning curable by persuasion. The methods adopted are somewhat different in the different schools; but they all aim at the same end. One fact I should like particularly to emphasize, and that is, the necessity in all cases of making a thorough clinical examination. And for two reasons: it inspires confidence in the physician that he is dealing with a functional and not organic disease, or an organic disease with a halo of functional disturbance; it also inspires confidence in the

patient, for he will reason that "the doctor has made a thorough examination, and if he assures me there is no organic disease, I must listen to his persuasion."

To make a diagnosis requires a sound neurological training. The personality of the doctor and the establishment of an atmosphere of cure plays an all-important part in inspiring faith in the patient.

Psychotherapy.

Bernard Hart in a recent instructive article points out that there are three methods of psychotherapy: (1) Affective therapeutics, a term which he prefers to suggestion; (2) persuasion, or the rational explanation of the symptoms to the patient; (3) analysis. The first two methods seek to eliminate the morbid condition; the third does more than that, it seeks to uproot the initial cause which led to the morbid condition.

Treatment of Functional Paralyzes and Contractures.

Each case must be dealt with on its merits. Many physicians do not care to use faradism to reinforce persuasion; but this method of physio-psycho-therapy or other physical means of reinforcing suggestion and re-education I have employed with great success. It has several advantages: (1) You can show the patient that all his muscles contract when they are stimulated; (2) where there is functional loss of sensibility the application of faradism by the roller or brush will rapidly restore sensibility, and it may be employed successfully to remove functional tremors. It seems to me that it rouses the dormant consciousness in the brain of the affected part and directs voluntary attention, which is in abeyance, towards the affected part. I have found it especially useful in mutism and in aphonia. If it has been tried before and been a failure, some other expedient must be adopted, for the patient has lost faith in the method. For example, I have cured functionally paralysed hands that have been treated by electricity, by telling patients that their hands are cold and benumbed, and that the blood supply to the part is insufficient to excite the nerves, so they have lost consciousness of the hand; but, after it has been warmed by radiant heat, they will be conscious of it and be able to move the fingers.

Another method which I have found very useful to restore function by persuasion is to tell the patient to shut his eyes and repeat all the passive movements with the sound hand and arm which I am making with the paralysed limb. If he is able to do this, I tell him that there cannot be any break in the nervous paths to his brain from his hand, and that he only has to will the movement or assist me in the passive movements I am making to recover the power in them.

In some cases of functional paralysis, however, there is a complete loss of the kinaesthetic sense, and these cases are much more difficult to cure by suggestion. The great secret of curing these hysterical cases is time and patience at the first treatment and not to leave the case until either there is a material improvement or a complete cure. Otherwise the patient will lose faith; indeed, we must always have present in our minds the dictum of Charcot: "C'est la foi qui sauve ou qui guérit."

SECTION OF SURGERY.

DISCUSSION ON

GUNSHOT WOUNDS OF THE CHEST.

OPENING PAPERS.

I.—COLONEL T. R. ELLIOTT, F.R.S.

THE immediate anatomical results of a wound perforating the chest are familiar. The splintering of the ribs inwards and outwards, the laceration and bruising of the lung around the track of the missile, and the effusion of blood to form a haemothorax within the pleural cavity. But the changes, physiological and pathological, that are associated with these gross objective features of the wound are not yet fully comprehended, and it is important that every scrap of knowledge available on this subject should be collected so that the complete story may be constructed. Very few observations have as yet been published in

description of the progressive changes in physical signs and in the x-ray appearances during the first and second days after the infliction of a chest wound. Yet there must be an abundance of such observations stored away in the clinical notes made by medical officers during the hurry and pressure of active work. Surgeons, too, carry in their visual memory observations that may be of the highest value for theoretical discussion, and these should not be lost. It is chiefly with the hope of hearing such incidental observations in the course of this morning's surgical discussion that I wish to bring forward some points in pathology.

First, with regard to the reaction of the lung itself to the wound and to the presence of the subsequent haemothorax or pneumo-haemothorax. The lung tissue may be infiltrated with blood for a considerable distance around the wound track, but the lung is so elastic that it does not fissure and rarely shows contrecoup injury at a distance from the wound. The changes in the pulmonary circulation are probably only those associated mechanically with the haemothorax, for the lung vessels lack a powerful vasomotor innervation.

But the bronchial airway is enveloped by a complete muscular coat right down to the openings of the smallest bronchioles on the infundibula, and this muscle coat can be directly relaxed or constricted by nervous impulses so that the airway is opened freely or almost closed. In the guinea-pig this muscle layer is so powerful that, as shown by Dale's experiments on anaphylactic death, it is capable of a cramped constriction in response to an injection of eggwhite that will kill the animal straightway by sheer asphyxia. The study of irritant poison gas at the War Office experimental ground at Porton revealed a strong constriction of these bronchiole muscles in goats, when exposed to an atmosphere of phosgene or of chlorine.

What happens in man is still unknown, though there is good reason to suppose that this bronchial musculature plays its part in many reflex reactions to injury. Even the normal physiological activity of the muscle is still obscure. It has a changing activity, but no one quite knows to what end or purpose. The muscle grips its tightest on the airway at the narrow inlet to the air sacs, where bronchitis ceases and pneumonia begins; but it is unlikely that it has a chief function in controlling the ingress of infection, and it is more probable that its main purpose is that of protecting the elastic tissue of the air sacs from harmful overdistension.

Let us assume that this musculature is thrown into strong contraction throughout the lungs as the usual reflex reaction to a chest wound. Cyanosis and dyspnoea would result, not a reaction of obvious utility, but one that none the less is generally observed. Rest for the wounded man, and morphine, help to allay this difficulty of breathing, and in a few hours the casualty has generally regained a fair colour and will stand an operation well. The chest feels free for breathing, and the cyanosis has vanished.

But occasionally this wished for change does not appear. Though there is no great accumulation of blood or of air in the pleural cavity the cyanosis and discomfort persist, and the surgeon has learned by experience that patients in such a state stand an operation on the chest very ill. Major K. D. Wilkinson, in his paper with Colonel Gask, differentiated this group, and he characterized it by cyanosis, dyspnoea, and "inspiratory retraction," or sucking inwards, of the lower intercostal spaces on the side opposite to that of the wound. This must be a condition that affects both the lungs. The local reflexes interfering with respiratory movements on the wounded side, or the effusion of a moderate haemothorax, do not appear to cause cyanosis, nor do they render thoracotomy dangerous.

It is fair to assume that the state is caused by a prolonged reflex constriction of the bronchiolar musculature which damps down the air current. The lung, despite its elastic tissue, would under these conditions remain virtually inelastic, because the air could not pass easily in and out. Instead of the lung being enlarged and sucked out by inspiration, the intercostal spaces would conversely be sucked in. This phenomenon is actually seen to occur, the lung behaving as though it were semi-rigid and small.

At this point it is necessary to consider the effects upon the lungs of the respiratory movements that are observed after a chest wound. The respiration is shallow and

quickened, with a small air current. On the injured side the intercostal muscles are said to show an increased tone, "guarding the wound within," while their respiratory rhythm is often lessened to almost complete immobility. The rhythmic movements of the diaphragm are certainly lessened too, but the tone of the muscle does not seem to be increased, for the x rays a few hours after the wound show that it is in a position of extreme elevation, that is, of relaxation in the complete expiratory phase. I do not know how early this position is assumed, but the *post-mortem* specimen on exhibition proves that it is assumed at an early time, and that it may then be rendered more or less permanent by light adhesions to the thoracic wall. This reflex cessation of *inspiratory* activity of the external muscles of respiration will have the same effect as the hypothetical constriction of the bronchiole muscles would have, and the air current is lessened by it.

Here we are left to pure speculation, which requires to be checked by observed facts; and these, in my own experience, are scanty. The outstanding characteristics of a haemothorax, which differentiate it from an ordinary pleural effusion, and must therefore have relation to some peculiar results of the actual wound of the chest, are the elevation of the diaphragm, the small size of the chest, and the tendency to partial or complete collapse of the lung in any area; while later the part of the lung on the wounded side which is not submerged in the haemothorax shows an unusual compensatory emphysema. The lung tends to be small on the wounded side, and to collapse everywhere.

Sir John Rose Bradford, in his recent paper in the *Quarterly Journal of Medicine*, emphasized this curious retraction of the chest as being indicative of a collapsed condition of the lung frequently following chest wounds, and, partly following Pasteur's original view of "massive collapse," he explained the general characteristics of a haemothorax with pulmonary collapse by assigning them to an external compression caused by the retraction of the chest wall and by the immobility of the diaphragm in an extreme expiratory phase.

It is true that the chest wall does not simply follow the size of the lung within, and that the thoracic muscles do independently assume an immobility and possibly a rigidity like that of the abdominal muscles after an intraperitoneal injury. But the lung itself has its physiological reflexes, and it is not a passively elastic bag. The smallness of the lung might be equally explained by an associated constriction of the bronchiole muscles, cutting off the diminished air current from the alveoli. The diminution of the air current, which results from the lessened inspiratory activity of the external muscles of respiration, must also be recognized as an important point in the discussion; for otherwise the lung would not of necessity become smaller from constriction of the bronchioles, and, indeed, it might be overdistended, as is seen in the guinea-pig's death from anaphylaxis.

When once these conditions are established the air in the air sacs, nitrogen as well as oxygen, is rapidly absorbed into the circulation, and hence large areas of the lung may be completely deflated. General massive collapse of the lung on either side after a chest wound is rare; and, as recognized, its only practical importance is that it is a contraindication to early operation. Smaller areas of collapse do occur, though with nothing like the frequency that has been estimated by some writers. In *post-mortem* examinations of cases with wounded chests, Captain Henry and I occasionally found this change to be present in the base of the lung opposite to the haemothorax, though not nearly so often as pulmonary oedema or congestion, with which the condition was frequently confused by the clinicians in the interpretation of physical signs during life.

It was much most frequently seen in a triangular area occupying the middle sector of the lower lobe, with the base of the triangle resting upon the diaphragm. Such a distribution of the area of collapse could have no possible reference to the action or inaction of any external respiratory muscles alone, and must be determined by some factor within the lung itself. Dissection of a lung discovered the explanation. The main bronchus to the lower lobe divides into three branches which do not communicate with one another. We found by experimental inflation that the middle one of these branches supplied exactly that middle triangular sector in which massive collapse was seen to

occur; and this bronchus is unique in its anatomical relations, for it is crossed at right angles by the great branch of the pulmonary vein which runs forwards from the back of the lower lobe to join the main trunk at the lung's root. No lung tissue intervenes between the vein and the bronchus.

With a haemothorax on one side it is probable that the circulation soon dwindles in that part of the lung which is compressed and airless beneath the effused blood. Were it otherwise, the patient would show persistent cyanosis apart from effort, like that of a case of congenital heart disease. The rest of the pulmonary circulation will become correspondingly engorged, and therefore the particular vein to which reference has been made is likely to be distended and cause abnormal pressure upon the bronchus. If the latter is partially obstructed with mucopurulent secretion, or the airway otherwise embarrassed, it is conceivable that this extra pressure from without on the bronchus would cut off the air current completely. Then massive collapse would be bound to follow in all the area supplied by that bronchus.

The coloured drawing illustrates a case of massive collapse in this triangular area from a case of phosgene gas poisoning, in which there chanced to be reproduced the particular conditions that are usually associated with haemothorax. The effects of the phosgene had caused the main pulmonary artery on one side to be greatly obstructed by a thrombus on its inner wall, so that the vessels in the contralateral lung must have been engorged, just as with a haemothorax. There was thick mucopurulent secretion, half blocking the bronchus. The pressure from without and the secretion within combined to close the airway at this critical anatomical point, and collapse ensued. Such a result of a chance anatomical relationship is analogous to that with infratentorial tumours of the brain, where Harvey Cushing proved the paralysis of the sixth nerve to be caused by direct pressure from an artery crossing it at right angles.

The importance of this area of contralateral collapse is not its immediate clinical interest, for that is slight, but its reference to the general theory of collapse. Here is an area where anatomical chance has created circumstances tending to localize collapse, and, so to speak, to precipitate it down from a general condition throughout the lung. Collapse may occur in other areas, and it may even involve an entire lung. The view that to my mind embraces the whole state is that of a general reflex bronchiolar constriction, which prepares the lung for collapse when the external respiratory movements are inadequate. And this theory might be used to explain the excessive emphysema, with its skodaic phenomena, that develops subsequently in a lung above a haemothorax; for it might be assumed that the preliminary constriction of the bronchioles is followed by a phase of extreme relaxation which may favour the development of emphysema.

The view, however, is little more than a hypothesis that cannot be developed further until more evidence is accumulated as to the actual condition of the chest soon after a wound. We need more observations on the presence or absence of early cyanosis, on the precise activities of the thoracic muscles and of the diaphragm in those early hours, and especially in those cases which felt "winded" after their wound.

Knowledge of the action of the bronchiole muscles is much needed for general medicine, and it is important that surgeons should bring forward from their own observations on wounded chests evidence to decide whether the above hypothesis is true or false. But in discussing this question it should be remembered that all the reflex conditions established in a wounded chest are liable to rapid alteration when the thorax is freely opened by the surgeon. Every one has noticed how an immobile diaphragm will then pass into vigorous activity.

The practical gain for surgery in the recognition of such a reflex state might be the power to control by drugs such a bronchial constriction, and so to bring dangerous cases within the reach of a successful operation.

Haemothorax.

The questions that arise with regard to haemothorax are chiefly practical ones dealing with the treatment of this intrapleural collection of blood, either when sterile or infected.

I think that the view of the coagulation process which Henry and I put forward remains generally accepted, namely, that the effused blood very rapidly passes through the clotting process, but that the coagulation is interfered with by the respiratory movements so that the fibrin is to a considerable extent whipped out of the blood. Very rarely does an entire massive clot form. Sometimes the fibrin is completely separated, leaving a fluid blood, red, non-coagulable, and full of corpuscles. Usually the process is of an intermediate type, and lumps of jellied clot are deposited on the pleural surfaces or lie away in the pleural recesses. The pleural membranes then react by a mild inflammation to some constituent or other of the haemothorax, even when it is sterile. There is an outpouring of pleural effusion containing more fibrinogen, and the clot on the lung surface is thickened and organized.

The fluid mixture of whipped blood and pleural effusion can at any time be withdrawn by aspiration: the clot cannot. Moreover, where haemothorax clot invests the lungs it develops in process of time into a tough jacket which restricts the lung to the size at which it is for the moment confined, and hinders subsequent expansion when the fluid is removed. This fact may be inferred from measurements of intrapleural pressure after aspiration. It is proved by the specimen of which the drawing is shown.

Here a very large haemothorax had been caused by a shell wound through the lung apex. It remained sterile and was not aspirated. On the seventeenth day the patient died of haemorrhage from another source. At autopsy the haemothorax was found to contain much fluid blood, but the lung was completely coated with red clot. Inflation of the trachea by bellows easily blew up the normal lung, but the lung on the side of the haemothorax was with difficulty inflated to about one-half of its normal size. The clot was then stripped off with ease by a pair of forceps, and the lung after this liberation could be readily inflated, for it retained all its natural elasticity.

Clearly a large haemothorax should be removed as completely as possible and at the earliest date. If this is not done the compressed lung will expand imperfectly, and the patient will exhibit the progressive falling in of the side of the chest and the drooping of the shoulder that were studied at Taplow by Meakins and his colleagues, and his breathing will be inadequate for full work. Special physical exercises will slowly correct the fault and help to re-expand the lung, but earlier treatment could save these crippling after-effects that unduly prolong the time of invalidism.

When the haemothorax is chiefly fluid and with little clot an early aspiration will suffice, and the lung re-expands almost at once. Even on the second or third day this may be done, and there is neither recurrent bleeding nor much subsequent accumulation of fluid. These are now truisms, familiar to every one with practical experience; but, as mentioned earlier, long time was needed before the practice of early aspiration was admitted to be correct, and then it only came into use in spite of theoretical objections because several junior medical officers tried and proved to senior critics that the method was right.

This treatment is enough for any small-sized haemothorax, for even though the latter may chance to consist chiefly of clot, the inactivity of a relatively small area of the lung is not a serious matter, and the patient can take enough exercise to help his chest to work until the clot is absorbed. The majority of these cases are returned to duty within three months of the wound, whether they were aspirated or not.

With a large haemothorax the correct line of action is open to debate. In the first place, it is difficult to be certain that clot is present, and more than one failure in an attempt at aspiration is required before the conclusion can be permitted that the failure is due to excess of clot. When the proof is satisfactory, then it is right to open the chest and evacuate the haemothorax, closing all again completely and never attempting any drainage. But even this surgical operation will fail to give a satisfactory result if it is so long delayed that the clot over the lung has time to be firmly organized, as in the specimen which I have demonstrated.

One is therefore driven to the obvious conclusion that a thoracotomy for evacuation of a large haemothorax

should be performed very early if it is to give a useful result. Shall it be a routine operation in all such cases? I think that most surgeons agree that this is not desirable so far as the haemothorax alone is concerned. Excellent results can, in most cases, be obtained by simple aspiration, and some statistics that I published in the *Lancet* eighteen months ago prove that such patients, even after a large haemothorax of three or four pints, often succeed in returning to the fullest efficiency of duty within three months of the wound. Colonel Gask will be able to quote similar figures showing the time of invalidism of men on whom he performed thoracotomy simply for the evacuation of the haemothorax. It is, of course, unfair to use the entire body of the figures in a close comparison, because cases vary so much in the amount of residual clot. But the main results in time of invalidism are alike for aspiration and for thoracotomy, if one sets aside from the results of simple aspiration those cases in which much clot was present, and therefore the ultimate recovery was slow.

The correct procedure for a large haemothorax would therefore appear to be this—and again I emphasize that here one is only considering the haemothorax in itself—that early aspiration must be the routine, and that if this is found to fail by reason of clot, then the chest must be evacuated at the earliest possible date by thoracotomy without drainage.

But the urgent problem with chest wounds in this war has not been that of improving treatment in order to abbreviate the time of consequent invalidism by a month or two. It was always that of checking the spread of infection, which was carried into the wound in so large a proportion of the cases. Half the total of deaths from chest wounds at casualty clearing stations, and all the deaths on the lines of communication, were caused by sepsis. Nearly half the cases of haemothorax that were caused by shell fragments went septic in the first year of the war, and a quarter of all cases of haemothorax went septic irrespective of the missile that had caused the wound. Out of the septic haemothorax cases 50 per cent. died under the average skill that was available in hospitals for their care. Those who survived, thanks to early detection and adequate drainage, were under hospital treatment for more than twice as long as the sterile haemothorax cases; and one-third of them were ultimately invalidated out of the service, whereas practically every case of sterile haemothorax sooner or later got back to duty. And even these figures do not give the full measure of invalidism caused by sepsis, for they tell nothing of the time lost by prolonged suppuration from carious ribs in the chest wall, where the infection had not gone deeper.

This was the problem that surgery did at last solve. The thoracic wall is now closed and repaired by early operation, and the success of such measures often prevents infection from creeping inwards to the pleural cavity at a later date, as it used to do, particularly in the form of a dangerous streptococcal invasion. Far more than that. The surgeon opens the chest and directly deals with infected material lying within the haemothorax, and, removing it, arrests the spread of infection and the development of the dangerous empyema. The wound track in the lung is closed, and with the same happy result. For though a slightly lacerated and infected wound track in the lung can often take care of itself, so far as its own healing is concerned, infection introduced by the missile and not derived from torn bronchi may often escape from the injured lung, as the covering blood clot breaks down, and so spread backwards into the haemothorax. Pierre Duval with Vaucher urged this strongly, at a time when we in the British service were somewhat slow to recognize it, the French observers believing that many of the cases where delay had been noticed in the ultimate general infection of a haemothorax by anaërobic bacilli were due to such an escape of anaërobic from a focus implanted within the lung itself.

II.—COLONEL G. E. GASK, C.M.G., D.S.O.

SURGICAL ASPECTS.

THE great lesson that has been learnt in this war is a clear conception of the biology or evolution of a wound. It is now clear that nearly 100 per cent. of all wounds are

contaminated. It is equally clear that there is a period of some hours between the time of contamination and infection; that is to say, before the organisms have had time to multiply and invade the tissues. If infection is allowed to take place the wounded man runs the risk of death or prolonged illness from septic processes. It has also been abundantly proved that antisepsics by themselves are of little value in preventing sepsis. The correct practice, whenever practicable, is to excise the wound in the latent period between contamination and infection, removing foreign bodies of all kinds. After this complete mechanical cleansing the wound should be closed and the patient kept at rest. If this method can be applied, then the percentage of healing by primary or delayed primary union is very high, and much needless death, suffering, and disability is saved.

The advance in thoracic surgery is due to the application of these principles to gunshot wounds of the chest.

Fears about Chest Wounds.

In the early years of the war little was done for patients suffering from these wounds beyond dressing or strapping the chest wound, propping the patient up in bed, and giving him some morphine and a cough mixture. Under this treatment it is true many recovered, but many died and many had a long and tedious convalescence. Our reasons for non-intervention were mainly three:

1. The experience of the South African war led us to think that chest wounds were best left alone. In that war conditions were different. Wounds were mostly due to rifle bullets, the climate was dry, and the soil relatively clean. In this war the missile was frequently a shell fragment and the soil was fouled with centuries of manuring. Infection, therefore, was the rule rather than the exception.
2. It was thought that it would be highly dangerous, if not fatal, to open the chest without some sort of pressure chamber or insufflation apparatus, which is too cumbersome for field work.
3. It was believed that opening the chest and handling the lung might provoke renewed and fatal bleeding. All these objections have proved fallacious.

Causes of Death.

The mortality from chest wounds was high. Apart from deaths due to complicating wounds the fatal cases, as they appear to the operating surgeon, fall into three main groups:

1. Deaths a few hours after admission to a casualty clearing station. These are generally due to extensive and severe injuries, combined with loss of blood and shock. Few only of these cases can be saved, though with the aid of improved resuscitation methods and transfusion of blood the percentage improved.
2. Deaths two or three days after the injury. These are almost always due to sepsis of the pleural cavity and its contents.
3. Deaths at the base. Sepsis is again the almost invariable cause.

Similarly, prolonged illness is almost always due to septic processes, usually empyema and its sequelae.

The irresistible conclusion is that the treatment must be directed towards elimination of infection in chest wounds as in wounds in any other part of the body, and that a contaminated wound of the chest will become an infected wound if not mechanically cleansed.

Channels of Infection.

Having found out that the preventable cause of death was essentially due to infection of the pleural cavity, it was necessary next to discover the channels of contamination. The pleural cavity may be contaminated:

1. By the missile and portions of clothing or equipment carried in with it. Indriven splinters of rib are a factor both of causing and maintaining sepsis.
2. Through the wound of the chest wall. A wound which leads directly into the pleural cavity and through which air is sucked at every breath will always lead to infection.

Further, even a small wound, through which air is not being sucked, unless cleansed by operation, may suppurate in the course of a few days, and unless the thoracic cavity has become sealed off by natural means organisms pass through into the pleural cavity, where they find the haemothorax fluid a good breeding ground.

3. From the wound of the lung itself in which the missile, bone, or piece of cloth may be retained.

There can be no dispute now that the duty of the surgeon is to: (1) Arrest haemorrhage, when necessary; (2) resuscitate collapsed cases; (3) when required, to cleanse the wound of the chest mechanically. In other words, the principles of surgery are to be applied to chest wounds as we have learnt to apply them to wounds of other parts of the body.

Types of Chest Wounds.

Chest wounds present themselves to the surgeon in the following categories:

1. Perforating or through-and-through bullet wound.
2. Perforating or through-and-through shell wound.
3. Penetrating wound with retention of large missile.
4. Penetrating wound with retention of small missile.
5. Open thorax.
6. Tangential parietal wound.
7. Thoracic wounds complicated by injury of the abdomen or spine or by multiple wounds.

Speaking generally, rifle bullets do much less harm than fragments of shell. They usually make a through-and-through wound, with small entrance and exit holes. Such cases very often get well of themselves.

Shell wounds, on the other hand, are far more dangerous. Shell fragments occasionally cut a track with entrance and exit wounds of the same size. More often they have an explosive effect, the exit wound being considerably larger than that of entrance. The fragment entering carries with it portions of clothing or equipment, which lodge in the pleural cavity or contents. At the same time splinters of bone are driven in, and may be found scattered along the track of the missile.

The effect on the lung is considerable. Collapse of the lung is almost invariably, often to half or less than half its normal size. Bleeding at first must be free, for a haemothorax is almost always present. It is fortunate, however, that unless a large vessel is hit, bleeding is controlled automatically by the collapse of the lung.

If a through-and-through track is slit up it is found to be ragged, lined with tags of tissue and destroyed parenchyma. Around the track is an area, often extensive, infiltrated by blood. This area is sometimes dense enough to be seen by *x* ray.

Surgical emphysema is common both in the parietes, in the mediastinum, and in the lung itself. Substernal emphysema is responsible for many queer noises, which may be mistaken by the unwary for pericarditis.

Study of the pathological anatomy of chest wounds shows us, therefore, that they have the same characteristics as other battle wounds. They can also be treated in the same way—that is to say, if before infection has occurred the dead and dying tissues are cut away, the foreign bodies removed, the blood cleaned out of the pleural cavity and the chest closed, then in a great majority of cases healing will be by primary union; the wounded lung will expand, and normal function be restored early.

CLINICAL APPEARANCES.

Initial Distress.—A man hit in the chest shows as a rule considerable distress, owing to the sudden upset of the respiratory and circulatory mechanism. If the injury is not too severe, and the wound of the chest wall closes automatically, the patient is able to accommodate himself to this upset. If the wound in the chest wall is large and open, and each inspiration allows a rush of air into the pleural cavity (open thorax), the distress is great and continuous. Such a condition, unless treated, is always fatal, either immediately from collapse or later from sepsis. An open thorax should always be closed at once by the insertion of temporary sutures, and then transferred to the hands of the operating surgeon as soon as possible.

Haemoptysis.—It is usual for the man to spit blood immediately after being hit. Haemoptysis is common for several days later, but is rarely of importance. If a large vessel has been hit the wound is almost immediately fatal. On arrival at a casualty clearing station it is common to find the patient suffering from shock. This may be due to the severity of the wound, loss of blood, pain, upset of respiratory and circulatory mechanism, cold and fatigue, or jolting of transport. All or some of these factors may be operative.

PRINCIPLES OF TREATMENT.

Physical Examination.—When a patient is admitted suffering from a chest wound he should be put to bed and allowed to rest undisturbed for one or two hours to recover from shock. The two exceptions to this rule are when (a) there is active bleeding, (b) a sucking wound. Later a survey of the whole patient must be made and all wounds examined. Evidence of haemothorax, pneumothorax, or collapse of the lung are to be sought for. Movements of the chest may reveal much and the position of the heart is of importance. The whole body should be searched for complicating wounds, especially with regard to abdominal and spinal injury.

X Rays.—Radiography is of the greatest importance, for with its aid valuable information can be gained concerning: (1) The position and size of a foreign body; (2) the existence and size of haemothorax and pneumothorax; (3) the condition of the opposite lung, cardiac displacement, and movements of the diaphragm. It is to be noted that screening of a patient reveals more than a plate, and if possible the screening should be done in the sitting position. In the British Expeditionary Force this was usually impossible. Also our *x*-ray plant did not allow us to recognize the existence of indriven splinters of bone.

Resuscitation.—It is not necessary to say more than that all the approved methods of resuscitation must be used in order to bring the badly wounded up to such a condition that they can stand operation.

Indications for Early Operation.—These are:

1. A ragged wound of the soft parts.
2. Compound fracture of the ribs.
3. Continued bleeding, whether from the inside or out.
4. Suction of air into the pleural cavity (open thorax).
5. Retention of a large foreign body.
6. Pain—out of proportion to the apparent severity of the injury (often the result of indriven splinters of bone scratching the lung with every respiratory movement).
7. Rapidly increasing pneumothorax, due to a valve-like opening into the pleural cavity, which allows air to be sucked in and prevents its expulsion (valve pneumothorax).

Indications for Non-interference.—When none of these indications is present—that is, when the wounds of the chest wall are small and clean, when the foreign body retained in the lung or mediastinum is small and there is little likelihood of septic changes—then the patient may be treated on general medical principles. The wounded man is kept in bed propped up or flat as he prefers, and a careful record is kept of pulse, respiration and temperature, in order to recognize the possible advent of septic changes in the haemothorax fluid. Further, blood may be drawn off from the pleural cavity by aspiration, repeated when necessary.

Treatment by Operation.

Time of Operation.—The best time is as soon as possible after the patient has recovered from the initial shock.

Choice of Anaesthetic.—Patients bear operation well and take a general anaesthetic satisfactorily. The French commonly use ether, the Americans gas and oxygen, the British either chloroform or local anaesthesia. It would appear, therefore, that the form of anaesthesia is not of great importance as long as it is administered skilfully. It is certain that under general anaesthesia one side of the chest can be opened without danger of respiratory failure, except when there is damage or collapse of the opposite lung, as evidenced by inspiratory retraction of the chest wall.

Objects to be Aimed at.—These are:

1. Excision of the wounds of the soft parts.
2. Excision of the broken bones—ribs or scapula.
3. Cleansing of the pleural cavity from blood, missile, indriven fragments of bone, or clothing.
4. Excision (when possible) of the damaged area of lung.
5. Suture of the lung.
6. Closure of the thoracic cavity.

The operative procedure will be considered under these headings.

Excision of the Wounds of the Soft Parts.

If nothing further be done, wounds of the soft parts, unless small and clean (for example, rifle bullet wounds), should be excised, because otherwise they become infected, and organisms may spread along the track of the missile into the pleural cavity, giving rise to empyema.

Excision of the Broken Bones.

Excision of the wounds of the soft parts leads the surgeon to the ribs. More often than not the ribs or scapula are broken, and, whether or not further operative procedure be taken for opening the chest, the splinters of bone should be removed, ragged ends of rib cut clean off, and all dead tissue excised.

Examination of the wound in this way may reveal either a bleeding intercostal artery or a large hole, hitherto unsuspected, leading into the chest, and a finger introduced into the pleural cavity may feel splinters of bone, free or sticking into the lung. Such splinters should be removed, for they play an important part in the production and maintenance of infection.

At this stage the case has been converted into one of open hæmothorax. The surgeon has to decide whether to content himself with what has been done, or to open the chest widely and deal with the lung and pleural cavity. If it is decided not to open the chest, the blood should be evacuated as far as possible by rolling the patient on to his side, and then the chest should be closed in layers—pleura to pleura, muscle to muscle, and skin to skin.

It is absolutely essential that the chest should be closed, for otherwise infection will inevitably ensue. So if it is impossible to make the two surfaces of pleura meet, muscle should be brought over the gap, and if there is a deficiency of both pleura and muscle, the hole should be covered with skin even if a flap has to be cut.

In my experience it is seldom advisable to be content with excision merely of the parietal wound. If the patient's condition will stand the complete operation, the results are better.

Opening the Chest: Choice of Route.

If it is decided to open the chest and deal with the contents the surgeon has to decide whether to make the opening through the wound or to make a fresh incision. (Thoracotomy through the wound or by fresh incision.)

The deciding factor is whether he can attain his object—that is, removal of foreign bodies, cleansing and repair of lung and pleura—by enlarging the wound. This depends upon the position of the wound. If the wound is in a suitable position, four inches of the rib should be resected subperiosteally. With the use of a retractor or rib-spreader, this amount of resection allows insertion of the hand and free access to the pleural cavity. If the wound is not in a suitable position, thoracotomy by fresh incision should be performed.

Resection of four inches of the fifth or sixth rib in the anterior axillary line gives a good exposure of the thoracic contents, and if there are no other considerations this is probably the best and easiest route to follow. It has to be remembered, though, that if drainage of the pleural cavity has to be performed later on, it cannot be done effectively through this incision. Therefore, if the nature of the wound and missile is such as to indicate probable future infection, it may be advisable to choose a lower rib and make the incision more posteriorly.

Inspection of Thoracic Contents.

When the chest is widely opened the first thing the surgeon sees is a lot of blood in the pleural cavity. This has to be removed, for it obscures vision. The blood is

removed by mopping, rolling on to the side, or scooping with the gloved hand.

Then the collapsed lung, the diaphragm, and the heart or mediastinum come into view.

The foreign body, if present, may be visible at once. If not, the hand may be inserted and the foreign body located. It is often found lying in the pleuro-diaphragmatic fold.

Treatment of the Wounded Lung.

The lung may be made to present out of the wound by the hand, aided by a pair of Duval's forceps. If a foreign body is lodged in the lung it should be located. It is easy as a rule, for it generally seems to be near the surface.

The wound in the lung should be treated now, if possible, as any other wound—that is to say, it should be excised and sutured. If the wound is near the surface of the lung this is easy—if necessary, a wedge of lung tissue may be excised and then closed by catgut sutures. If there is a long track through the middle of the lung, it is obvious that it is not practicable to slit this up along its whole length. In such a case it should be cleansed as well as possible by rubbing with gauze, either on a probe or by a pull-through.

In every case the hole in the lung should be closed. It is true that the mechanical cleansing may often be incomplete, but it is also clear that the lung tissue, owing to its vascularity, is able to contend with a certain degree of infection. As evidence of this one points to the extreme rarity of gas gangrene of lung tissue.

Though at first sight this appears to be a heroic operation, blood pressure records show that it is attended by a smaller fall of blood pressure than a similar one on the abdomen, associated with handling of the intestines.

Bleeding from the parenchyma of the lung is not to be feared, and the handling of the lung does not cause recrudescence of bleeding. I have only seen two cases of continued bleeding from the lung, and in each case this was due to inability of the lung to collapse.

Wound of Diaphragm.

The wide opening of the chest often reveals a wound of the diaphragm. This can be treated easily by excision and suture.

Cleansing of the Pleural Cavity.

In most cases it is only necessary to cleanse the pleural cavity by swabbing it dry and clean. If there has been much soiling it can be washed out. The French often swab it with ether. In any case the chest must be left dry.

Closure of the Chest.

Whether the operation has been performed through the wound or by fresh incision the chest must always be closed. The relief afforded the patient is instant and marked. In the majority of cases healing will be by primary union.

After-Treatment.

A successful case requires no special after-treatment. The patient is comfortable, breathes easily, the lung expands quickly, and convalescence is uninterrupted.

One point that has to be watched for is an accumulation of fluid in the pleural cavity, and systematic needling is advocated, as it is difficult to detect a small amount of fluid by physical examination.

It is to be remembered, though, that the more complete and careful the operation the less likelihood of any pleural effusion there will be.

ABDOMINO-THORACIC INJURIES.

Injuries involving both the chest and the abdomen are not infrequent, either as the result of a single or multiple missiles. When a missile has traversed both chest and abdomen the diaphragm must necessarily be injured, and abdominal viscera may herniate into the pleural cavity. This complication is more frequent on the left than on the right side because of the protection of the liver.

As efficient repair of the diaphragm can only be obtained from above, it is better in such cases to open the chest first, replace the abdominal contents, suture the diaphragm, deal with the chest as already indicated, and then, if there is evidence of injury to hollow viscera, laparotomy may be performed.

The passage of a small missile through the diaphragm may not necessitate repair. In such cases where there is evidence of injury to hollow viscera, the abdomen is afforded preferential treatment.

Similarly, with multiple injuries involving both chest and abdomen, it is probably better to deal with the abdominal injury first, but when the patient's condition allows, the chest wound should be dealt with in addition, even if only to excise the parietal wound.

Simple Haemothorax.

Probably most people will agree that patients with large parietal wounds and retention of large missiles should receive some treatment as indicated above. If we pass now to a group of cases in which the main feature is a haemothorax, there will probably be differences of opinion.

Take a case of a man with a through-and-through bullet wound, the wounds of entrance and exit being small and clean, and the only damage apparent a haemothorax of mild degree—say, 20 oz. What is the correct treatment? If that man is left alone or is treated by aspiration he will probably recover. The haemothorax, though, may become infected after two or three days up to two or three weeks. If infection occurs, the man runs the risk of death or prolonged convalescence following empyema. If it were possible to foretell which case would become infected, there would be no doubt that the correct treatment would be early operation, with evacuation of the haemothorax, and closure of the chest. It is, however, impossible to foretell this.

I am undecided as to the correct treatment of such cases. A critical survey of the late results of unoperated cases would be most helpful.

Infected Haemothorax.

Incidence of infection will be diminished according to the attention paid to the complete excision of wounds of the chest wall. But infection of the intrapleural contents occurs also in cases of small clean wounds where no foreign body is retained, and also excision of the parietal wounds, and particularly in men who have lost a large quantity of blood.

The infecting organism and resulting toxæmias vary considerably; in my experience, while a mixed infection is always severe, the anaërobic bacilli are among the most benign, and the streptococci—especially if haemolytic—are the most dangerous. Evidence of infection is rarely seen before the third day after the wound, and may be delayed for many days. The only certain evidence of infection is either a positive bacteriological finding or the removal of stinking fluid. By clinical signs it is often possible to diagnose the presence of infection before organisms can be detected by the bacteriologist.

As soon as infection is proved or suspected the essential treatment is to empty the chest of all infected blood and clot. This cannot be done by aspiration and must be done by open operation. The common practice has been resection of one inch of rib and insertion of a tube. Provided that the operation is done within a few days of the receipt of the wound, it is better to do a wider resection, by which means all clot can be removed and the pleural cavity washed. The chest should then be closed. This method offers the following advantages:

1. The chest may remain closed, the organisms not developing.
2. The lung is allowed to expand and adhesions may form which will prevent complete collapse, even if the pleural cavity is subsequently drained.
3. Respiratory distress is much less with the closed chest.

The condition of the pleural contents can be determined by post-operative needling. If infection persists, the chest must be opened and drained; this can be done by the removal of sutures from the resection incision, provided only that the incision has been made in a suitable place—that is, low and postero-laterally.

I look upon the drainage of the chest as I do in amputation of a limb. It is sometimes necessary to save life but still a surgical failure.

Late Results.

I am unable to say much from my own experience of the end results of chest wounds, and the relative values of operative and non-operative interference, and the extent to which early operation should be pushed, neither can I furnish you with long lists of figures. This, however, I can say: During the period including the retreat of our armies in the spring of 1918 and their equally rapid advance during the summer and autumn, in which periods military exigencies prevented much surgery, then the results obtained were markedly worse.

Lessons Learnt in Military Service which may be Applied to Civilian Practice.

On this subject I speak very tentatively, though it is one deserving careful consideration. There are three points I would like to submit:

1. The treatment of crushed or "stove in" chests. These cases occur in civilian practice. When associated with severe laceration of the lung by indriven fragments of bone, thoracotomy may be of service.

2. Can we make use of thoracotomy for the cure of intrathoracic carcinoma of the oesophagus? Last autumn I had the advantage of a long conversation on this subject with Dr. Willy Meyer of New York. He has the best pressure chamber installation I have seen. Dr. Meyer is not very hopeful on this question, and he issues a very urgent warning, believing that the condition of patients wasted with malignant disease of the oesophagus renders them much more dangerous subjects for thoracotomy than the vigorous soldiers on whom we operated in France. Dr. Meyer's warning deserves careful consideration.

3. Can we improve the treatment of empyema? On this point I am more hopeful. I suggest that in certain cases, particularly of children with a pneumococcal empyema, the pleural cavity may be washed out and the chest closed without the use of a drainage tube. This method has been performed successfully, and my belief is that in suitable picked cases it may prove beneficial.

SECTION OF PREVENTIVE MEDICINE AND PATHOLOGY.

THE DYSENTERIES: BACILLARY AND AMOEBIC.

OPENING PAPERS.

I.—LEONARD S. DUDGEON, C.M.G., F.R.C.P.,
Colonel A.M.S.

BACILLARY.*

It is only possible to refer very briefly to a few of the most important data which concern the bacteriology of bacillary dysentery owing to the very limited time which has been allotted to "openers of discussions" by your Council.

Bacillary dysentery is an infectious disease due to specific organisms, characterized by fever, tenesmus, diarrhoea, followed by passage of blood and mucus. These clinical phenomena are present in typical cases of the disease, but it is essential to realize that dysentery bacilli may be isolated from patients who have had diarrhoea for a period of twenty-four hours without any other clinical manifestations. Such cases readily respond to "household remedies," and unless bacteriological investigations are undertaken at the outset the chances of recovering dysentery bacilli are remote.

In countries in which bacillary dysentery is epidemic and endemic such cases are of considerable importance from the epidemiological standpoint. Further, it is the mild cases of diarrhoea due to dysentery bacilli which serve to explain the abnormal serological findings not infrequently referred to in the literature. A negative

* The investigations referred to in this communication were made by me and my co-workers, Major A. I. Urquhart, O.B.E., R.A.M.C., Captain W. R. Lozan, M.D., R.A.M.C., Captain J. F. Taylor, M.D., R.A.M.C., Captain J. Bamforth, M.D., R.A.M.C., Captain B. J. Eyrle, R.A.M.C., Captain A. Wilkin, R.A.M.C., while special assistance was given by Captain J. F. Gaskell, F.R.C.P., R.A.M.C., and Captain R. R. Elworthy, O.B.E., R.A.M.C.

history of a bacillary dysentery infection among those who served on Gallipoli, in Macedonia, or in Egypt, is of little value, but the number of troops returned to this country from the Eastern Mediterranean, and who are yet to come, is a matter of considerable importance to the public health departments, and to medical practitioners of Great Britain, Australia, Canada, and New Zealand.

The bacilli which are now known to give rise to dysentery are (1) the Shiga bacillus, (2) para-Shiga bacilli, (3) Flexner group, and those bacilli which may be grouped provisionally as para-Flexner bacilli.

Haemocultures in Cases of Bacillary Dysentery.

These were made in 145 cases during the acute stages of the infection; 2 to 5 c.cm. of blood were added to 20 to 30 c.cm. of either 2 per cent. bile salt in distilled water, or 1 per cent. glucose citrate broth and broth with the addition of trypsin. In two cases of acute dysentery the Flexner bacillus was recovered from the blood stream. In all other instances the blood was found to be sterile by the methods adopted, and in spite of the fact that the majority of the cases were examples of acute Shiga dysentery.

The Bacteriological Investigations of Acute and Chronic Bacillary Dysentery.

It is a notorious fact, well known to bacteriologists who have studied this disease in subtropical and tropical countries, that a high percentage of positive findings can be obtained only if the samples of stools are received in the laboratories in the fresh state. If the specimens consist of pure blood and mucus, an interval of a few hours is permissible between the time the sample is collected from the patient and the bacteriological examination, but if faeces are present with blood and mucus it is essential to avoid delay.

There is frequently a considerable distance between the medical unit in the front area at which the dysenteric patient is first seen and the mobile laboratory which supplies this area, so that a delay of many hours may elapse between the collection of the specimens and their arrival in the laboratory. It is therefore obvious that any device which can be adopted to counteract the changes that occur in blood and mucus stools mixed with faeces, or in diarrhoeic stools which cannot be bacteriologically examined for many hours, is the best working solution of the problem. In general hospitals on active service such requirements are only necessary when samples are collected during the night.

Dr. Lucius Nicholls published a paper in the *Lancet* on the chemical affinities of *Vibrio cholerae*. In this communication he directed attention to the susceptibility of this organism to the action of acids.

We have applied a similar line of investigation for dysentery bacilli which has led to the following conclusions: That dysentery bacilli are sensitive to the presence of free acids, while they are able to grow freely in alkaline media. Further, suppressed vitality induced by acids may be recovered from by the addition of an alkali. These experiments suggested the possibility offered by the addition of alkali to blood and mucus stools containing faeces, and diarrhoeic stools in which the presence of a member of the dysentery group was suspected. Blood and mucus stools are alkaline when freshly passed, but if faeces are present and the sample is allowed to remain at laboratory temperature for some hours an acid reaction may develop. Experimental evidence was obtained that the addition of an equal volume of 3 per cent. normal sodium hydrate to pure blood and mucus stools at the time the specimens were collected from the patients was a distinct advantage, and still more so if the dysenteric stools contained faecal matter. A higher percentage of positive findings occurred when it had been necessary to delay the bacteriological examination for some hours.

The Shiga Bacillus and para-Shiga Bacilli.

The strains of the true Shiga bacillus isolated from cases of dysentery during the seasonal periods of 1916, 1917, and 1918 have not shown any characteristics which call for special comment either in cultural or serological reactions, apart from the few strains which have fermented maltose. This sugar was also fermented by four out of a total of forty-one strains of para-Shiga bacilli submitted to com-

plete investigation. Our experience of bacillary dysentery in the Eastern Mediterranean from 1915 to the end of 1918 has confirmed the previous experience of other investigators that the most severe cases are usually due to the bacillus of Shiga.

Schmitz in 1916, during an epidemic of dysentery, isolated an organism which he regarded as a specific bacillus capable of exciting dysentery in the human subject. Captain Cecil Clarke, R.A.M.C., sent to the Central Laboratory, Salonica, in February, 1917, a culture of an inagglutinable strain of Shiga bacillus which he had isolated from a case of dysentery. A rabbit was immunized with this organism, and a supply of the serum was distributed among the laboratories in the command. Since that date numerous strains of this organism have been isolated from cases of acute dysentery in Macedonia and from patients suffering from diarrhoea with or without mucus. Further investigations have shown that there are two groups of these bacteria which can be differentiated by serological tests, and by the fact that the group which we have designated para-Shiga + produces indol, while the para-Shiga fails to do so. Our para-Shiga + bacillus corresponds to the organism isolated by Schmitz. We have investigated fully at the Central Laboratory forty-one strains of the para-Shiga bacilli, of which thirty produced indol. By means of antisera supplied to the various laboratories in the command these bacilli have been labelled as readily as the true Shiga bacillus.

Complete agglutination and absorption tests made by us have shown that agglutinins formed by the para-Shiga bacilli are specific, and similarly those produced by the indol-forming bacillus, while the true Shiga bacillus is not agglutinated by the para-serums or the para-bacilli by anti-Shiga serums. Absorption of agglutinins does not occur under these conditions. We found that rabbits were immunized with much greater difficulty with the para-Shiga bacilli than with the true Shiga bacillus, although the para-Shiga organisms were "on the whole" much less toxic than the strains of Shiga bacilli which we have investigated. In the Balkans both types of para-Shiga bacilli have been recovered from blood and mucus stools. Captain E. G. D. Murray, R.A.M.C., in his valuable contribution to the subject of bacillary dysentery, states that in his opinion *B. dysenteriae* "Schmitz" is a clearly defined species of dysentery organism.*

The Flexner Group.

Cultural tests are always necessary in the preliminary examination of the Flexner group, so as to eliminate organisms which do not belong to the dysentery groups, and to give an indication as to which agglutinating serum or serums should be employed. The cultural characteristics may be regarded as (1) primary and (2) secondary. The primary include the action on gelatin, lactose, glucose, and mannite, while the secondary reactions are on cane sugar, maltose, dulcitol, litmus milk, indol formation, and the presence or absence of haemolytic activity. The Flexner bacilli conform to the primary characteristics, but the secondary reactions are so inconstant and unstable as to nullify their use for the classification of these organisms. Further, bacilli which are similar as regards their serological reactions may have entirely different secondary characteristics; 140 strains of Flexner bacilli were examined by us, and it was found that the primary characteristics of this group were constant, but the secondary were not even constant in the same strain subcultured over a period of months. We agree with the findings of C. J. Martin and Williams that variations in fermentation of maltose and cane sugar occur, and that indol formation is not a constant phenomenon, while we also regard the fermentation of dulcitol as inconstant. Our results have indicated that bacilli which when first isolated belong to the so-called "Y" group are especially liable to alter their cultural characteristics. On the other hand, our classification of Flexner strains into various groups as a result of agglutination and absorption tests is entirely artificial. There is no justification for the rejection, as a cause of dysentery, of bacilli which retain the primary cultural characteristics of the Flexner group for five days if they do not agglutinate with the available antisera. It is possible that a complete investigation of aberrant strains may prove of value in the grouping of the

* The toxicity of Shiga strains is considerably reduced in formalin-killed cultures.

mannite fermenters.* If several anti-Flexner serums are employed as a routine procedure for the investigation of the mannite fermenters serological reactions may be obtained with various strains which otherwise would be termed inagglutinable. This method, to which C. J. Martin and Williams drew attention, is now being widely adopted in all dysentery laboratories.

Morgan's Bacillus No. 1.

In certain periods of the dysentery seasons this organism has occurred with much greater frequency than at other times. During such times it has been isolated from blood and mucus cases, but no apparent reason has been forthcoming for the rise in the Morgan incidence. In no case has any Morgan agglutinin been formed in the serums of these patients. Considerable work has been done with the idea of obtaining a multivalent anti-Morgan serum, but without success, as all such antisera are strictly autogenous in their action.

The Examination of Shiga, para-Shiga, and Flexner Bacilli by the Acid Agglutination Test.

Michaelis recommended this test, which, in his opinion, could be readily applied for the identification of dysentery bacilli, even in laboratories with the meagrest equipment. It consists of the addition of normal sodium hydrate and normal acetic acid, in definite and varying quantities, to emulsions of bacilli. Michaelis considers that dysentery bacilli never show agglutination by this method, either with or without the addition of traces of blood serum, and therefore can be readily recognized by this method, while atypical bacilli can be distinguished from true dysentery bacilli. This method has been studied fully by us, but in our opinion it has no practical utility. In those instances in which it was necessary to employ elaborate serological tests to identify a bacillus isolated from a case of dysentery no help was ever obtained by the application of the ready method of Michaelis. True Shiga and Flexner bacilli may react normally or abnormally, while comparative experiments with strains recently isolated and then stored on laboratory media have shown wide differences. Murray, in the paper already referred to, makes the following statement, with which we are in complete agreement, "that Michaelis's acid agglutination reaction is of no value in determining whether or not a given bacillus belongs to the dysentery group."

Agglutination Reactions in Cases of Bacillary Dysentery.

The antigens for these reactions were prepared as follows: Roux flasks of agar were inoculated with twenty-four hours cultures of bacilli which had previously been subcultured for ten days in succession. The flasks were incubated for twenty-four hours at 37° C., then the growths were washed off with saline containing 0.1 per cent. formalin, filtered through glass wool and stored, as recommended by Dreyer, in the ice safe until sterile. The antigens were standardized to contain 1,500 million bacilli per c.c.m. The reactions were carried out at 55° C. for five hours, and then the end points read after half an hour at room temperature. Auto-agglutination did not occur by this method and lysis was not observed, but individual strains of Flexner bacilli were found to vary considerably in their agglutinability.

Each antigen as it was prepared was tested to end point with antisera reserved for this purpose, and again a few weeks later. With these antigens the following conclusions were arrived at from the study of the blood serum obtained from a considerable number of cases of bacillary dysentery:

1. A reaction of 1 in 40 is a positive indication of a Shiga infection.
2. A reaction of 1 in 25 is strongly suggestive, and the test should be repeated about a week later.
3. Shiga cases may show a high Flexner reaction.
4. Cases of para-Shiga dysentery do not give a Shiga reaction.
5. Many cases of so-called clinical dysentery can be proved to be Shiga infections by this method.

* Early, transient, and slight fermentation of lactose occasionally occurs with true dysentery bacilli. No importance has been attached by us to the fermentation of lactose at the end of three weeks, while we have had no experience of true lactose fermenters as a cause of bacillary dysentery.

6. A rising or falling Shiga reaction is of considerable importance in the diagnosis of a Shiga infection.

7. In every case of dysentery accompanied by pyrexia of unexplained origin, a Shiga agglutination reaction should be undertaken, as it has been found to be of considerable importance in the diagnosis of such cases.

8. Absorption tests are of value in the diagnosis of Shiga infections.

9. It is necessary to employ at least two, but preferably more, Flexner antigens for the investigation of Flexner cases.

10. We do not feel justified, from the type of material at our disposal, in dogmatizing as to what is diagnostic of a Flexner infection, and also because Flexner antigens vary considerably in their susceptibility to human serums. We recommend that a reaction of 1 in 150 should be taken as an approximate standard with an antigen of 6,000 end point, but the reaction should be repeated a week later, and the presence of Shiga agglutinin should be excluded.

Arthritis as a Complication of Bacillary Dysentery.

Twenty-five cases of arthritis occurring in one or more of the large joints have been met with, and in the majority of instances the diagnosis of anti-serum arthritis could be excluded. Conjunctivitis was associated with the arthritis in some instances, but as this complication is readily overlooked it is impossible to state how often it occurs. In ten cases the joint fluid was fully investigated, and in seven of these cases the Shiga bacillus had been proved to be the cause of the intestinal infection. Captain R. R. Elworthy, R.A.M.C., cultivated the Shiga bacillus from the joint fluid in one case, but in all other instances it was found to be sterile, although the exudates were turbid and pus cells were abundant. Two cases were proved to be Shiga infections by the agglutinin content of the exudate (1 in 150 and 1 in 100), and in one instance a reaction of 1 in 300 was obtained with one of the Flexner antigens. All experiments with these exudates when inoculated into rabbits proved of no assistance in providing the necessary proof of the nature of the infection. Some cases of arthritis associated with Shiga dysentery improved rapidly under vaccine treatment.

Three methods by which bacillary dysentery is believed to be spread among a healthy population may be briefly referred to.

Carriers.

The occurrence of mucus in the stools should be regarded always with grave suspicion among patients with a previous history of dysentery. Dr. E. H. Lepper, in her report to the D.M.S., B.S.F., made the following statements:

It is hardly possible to over-estimate the importance of mucus in the stools as a sign of continued infectivity, for as a rule in any particular case the positive results are only obtained from the mucoid specimens, the normal stools that are passed are negative.

Dr. Lepper therefore recommends that it should be the duty of medical officers in dysentery hospitals to select samples of faeces which contain mucus for bacteriological examination, and to notice if patients who are to be discharged from hospitals are passing shreds of mucus. Dr. Lepper's results showed that the percentage of convalescent dysentery patients who are carrying bacilli is about 6, but three months after the onset this has been reduced to 1.5 per cent. In addition to the presence of mucus in the stools, which is of so much importance in the diagnosis of carriers, we have found that some patients who have apparently recovered from dysentery and were not passing mucus at the time when it was searched for, showed a positive Shiga agglutination reaction.

The Vitality of the Shiga Bacillus in Sterilized and Crude River and Aqueduct Water.

The opportunities for infecting stored or well water on Gallipoli and in certain other Eastern areas were probably as great as could occur outside a laboratory experiment. It is known only too well the important part dysentery has played in these areas. It was largely for this reason that these experiments were conducted, and, very briefly, the following results were obtained: The Shiga bacillus was cultivated up to a period of ninety-six hours from crude water which had been stored at 37° C., while from sterilized water it was possible to isolate the

Shiga bacillus at 240 and 336 hours when it was stored at room temperature, but not if storage was permitted at 37° C. Experiments showed that it was possible to cultivate the Shiga bacillus from river water stored at room temperature for 576 hours, but this was found to be impossible with water stored at 37° C. Further, the bacillus retains its cultural and serological reactions when stored in water. The Shiga bacillus was cultivated from water which had been chlorinated previously by an expert.* These experiments show the necessity for efficiently protecting all water which is to be employed for drinking purposes.

The Fly as a Carrier of Bacillary Dysentery.

These experiments, which can be referred to only very briefly, were conducted by Captain J. F. Taylor, R.A.M.C. Two years' experience of bacillary dysentery in Macedonia showed that while bacillary dysentery occurred to some extent among the troops throughout the warmer months, there were two periods of the year when it assumed a greater prevalence, namely, spring to early summer and from the late summer to early autumn, at the periods when the fly pest was at its worst. During the hottest months of summer flies were considerably reduced in numbers, and there was comparatively little dysentery. The incidence of flies was estimated by observations made in the camps of two hospitals situated on the seacoast. Two fly-traps were placed in fixed spots in each of the two hospitals every day from 11 a.m. to 2 p.m. The flies were counted in each trap after the three hours' exposure, and at the end of each ten days the average number of flies per trap per day was calculated. It was found that the first fly pestilence in April and May was immediately followed by a great increase in dysentery in May and June, while the second, in September, October, and early November, was accompanied by an increase of dysentery of equal severity. The incidence of dysentery was calculated on the number of cases which had occurred among the patients in the two hospitals.

Certain experiments were conducted for the purpose of ascertaining whether flies fed on material known to contain Shiga and Flexner bacilli would show positive findings at varying intervals. The examination of the flies was made by (1) the walking or natural method, (2) the faeces, and (3) the legs, with the following results: The prospect of recovering the infecting organism from the fly diminishes very markedly at and after twenty-four hours from the time of infection; that the examination of flies' faeces is the most suitable method for the isolation of dysentery bacilli.

The Examination of the Wild Fly.

The flies for examination were caught in various parts of the two hospitals—wards, kitchens, latrines—but there were no wards in either hospital allotted to cases of dysentery. The results of these investigations were as follows: A typical Shiga bacillus was isolated on one occasion from a fly captured in a hospital kitchen out of a total of 1,670 flies examined. A para-Shiga bacillus was obtained on one occasion, and inagglutinable strains of Flexner bacilli on eight occasions. In another series not included in the above a Flexner bacillus was also isolated from a fly captured in a hospital kitchen.

CONCLUSIONS.

(1) Bacillary dysentery is most prevalent when flies are most numerous. (2) Flies after contact with food infected with dysentery bacilli are capable of carrying and disseminating these bacilli for at least twenty-four hours. (3) Dysentery bacilli were isolated from wild flies captured in places in which bacillary dysentery is both endemic and epidemic.

In our opinion the following points require much more elaborate investigation: (a) The vitality of dysentery bacilli in water. (b) The relationship of flies to bacillary dysentery. (c) Further investigations with the Flexner group of dysentery bacilli and with inagglutinable strains

of Flexner bacilli. (d) On the toxins produced by dysentery bacilli. (e) The preparation of more suitable antisera for the treatment of the disease.

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AMOEBIc DYSENTERY IN ENGLAND.

WHEN the secretary invited me to open the discussion on amoebic dysentery he suggested that special reference should be made to diagnosis, the importance of carriers, and the chances of the disease becoming endemic in this country. I propose to limit my remarks entirely to these aspects of the subject.

During the last three years the Liverpool School of Tropical Medicine has undertaken the diagnosis and treatment of very large numbers of cases of dysentery amongst soldiers in the local military hospitals. In order to cope with the vast amount of laboratory work which this entailed the services of Messrs. J. R. Matthews and A. Malins Smith were employed by the school. These gentlemen have been with us during the whole of the three years, and it is to their records that I am indebted for the bulk of the data quoted below. We have also to acknowledge the assistance of Miss D. Mackinnon and Mr. H. F. Carter, who took part in this work during the year 1916-1917.

Much time and labour have been devoted in different parts of the country to the detection of carriers of *Entamoeba histolytica* among soldiers invalided to this country from the various theatres of war. This routine procedure was undertaken for two main reasons:

1. Carriers of *E. histolytica* cysts were regarded as dangerous to the community, in that they might be a means of infecting others.

2. So long as a man harboured these cysts it was considered that he might be subject to a relapse of acute dysentery or to hepatic abscess.

In all, over 4,000 chronic or convalescent dysenterics have been examined at the Tropical School in Liverpool, and *E. histolytica* cysts have been found in about 11.5 per cent. of cases.

In view of the fact that Dobell (1916) had found that 11.8 per cent. of 110 New Zealanders, who had been invalided to this country from Gallipoli and Egypt for diseases other than dysentery, were infected with *E. histolytica*, and of somewhat similar results obtained by Wenyon and O'Connor in Egypt about the same time, it was decided to examine non-dysenteric soldiers in the Liverpool Tropical Hospital. Of 450 such cases examined, about twice each, 7.8 per cent. were found to be infected. The discovery was very striking, and led naturally to the question whether the infection exists among soldiers and civilians who have never been out of England and Wales.

E. histolytica Indigenous in England.

The results of one examination of a considerable number of persons who have never been abroad are given in Table 1, as are also, for purposes of comparison, those of convalescent dysenteric and non-dysenteric soldiers invalided from abroad.

From Table 1 it is clear that there is a considerable percentage of individuals infected with *E. histolytica* amongst persons who have never been out of Great Britain. It might be stated at once that with very few exceptions all these persons were apparently healthy, none gave a history of dysentery, and in only one were the vegetative stages of an *Entamoeba* found. On examining the table more carefully, it will be seen that the degree of infection amongst different groups of the population varies considerably—for example, among 548 children (in a children's infirmary) 1.8 per cent. were found to be infected with *E. histolytica*; among 450 men and women (patients in a general hospital) 1.5 per cent.; among 1,098 young recruits 5.6 per cent., and among 207 lunatics 9.7 per cent.

Considering the manners and customs of the inmates of an asylum, it is perhaps not surprising that the degree of infection amongst them should be so much greater than amongst the general population in an ordinary civilian hospital. It is, however, not so easy to assign a reason for the relatively large percentage of infections found

* Each sample of water employed in these experiments (500 c.c.) was inoculated with one loop of a twenty-four hours' culture of Shiga's bacillus in Dreyer's medium.

TABLE I.—Summary of the Results of Protozoological Examinations of Faeces made at the Liverpool School of Tropical Medicine during the Last Three Years.

Class of Case Examined.	Date of Examination.	Number of Cases Examined.	Percentage found infected with		
			<i>E. histolytica</i> .	<i>E. coli</i> .	<i>G. intestinalis</i> .
1. Convalescent dysenteries in military hospitals...	May, 1916 to Dec., 1918	4,068	1st exam. ... 7.0 About 3 exams. each ... 12.1	1st exam. ... 15.2 About 3 exams. each ... 29.7	1st exam. ... 9.9 About 3 exams. each ... 16.4
2. Patients in military hospitals for diseases other than dysentery	June, 1916, to June, 1917	450	1st exam. ... 6.4 About 2 exams. each ... 7.8	1st exam. ... 14.2 About 2 exams. each ... 21.1	1st exam. ... 6.0 About 2 exams. each ... 9.5
3. Persons who have never been abroad. (The results are based on one examination per case.)					
A. Civilians in Liverpool Royal Infirmary ...	1917	450	1.5	6.7	6.0
B. Children under 12 years old in Liverpool Children's Infirmary	Feb. to Nov., 1918	548	1.8	11.1	14.1
C. Recruits 18-19 years old in training camp:					
Batch. ...	Average sojourn in camp before exam.				
i. ... 2-3 months ...	April, 1917	263	3.0	12.1	4.5
ii. ... 2-3 months ...	Aug., 1917	241	6.6	23.2	7.5
iii. ... 5 months ...	Oct., 1917	230	3.9	14.8	6.1
iv. ... 1 month ...	April, 1918	98	6.1	21.4	8.2
v. ... 2.5 days ...	May, 1918	81	8.2	22.4	11.8
vi. ... 9 days ...	May, 1918	105	6.6	17.1	6.6
vii. ... 16 days ...	June, 1918	78	12.8	23.1	10.2
Total recruits ...		1,098	5.6	18.2	7.0
D. Lunatics in an asylum ...	June, 1918, to Feb., 1919	207	9.7	45.9	3.4
4. Soldiers returned from abroad stationed at camp in which were recruits mentioned above	Oct., 1917	90	7.8	23.3	5.6

So as not to overburden the table, infections with *E. nana*, *Tetramitus*, and *Trichomonas* are omitted. The figures are, except where otherwise stated, the results of a single examination only in each case, and are therefore comparable.

amongst the young recruits. The, at first sight natural, explanation that the recruits had contracted the infection in the training camp from men who had returned from abroad received support from the fact that 7.8 per cent. of 90 of the latter were found to be infected. It was, however, soon found necessary to abandon this hypothesis, as further investigations showed heavy infections amongst recruits who had been in camp for an average of only 2.5 days. It is clear, then, that the recruits had taken the infection to camp with them, and had not contracted it there. One is forced, therefore, to the conclusion that for some reason young men of 18 to 19 are more heavily infected than the civilian population regarded as a whole. The explanation of this is still obscure, but evidence is available which suggests that possibly occupation, or mode of life, may have something to do with it. Referring again to Table I, it is interesting to note that the percentage of infections found varied considerably in different batches of the recruits—for example, in Batch vii the percentage found to be infected is much greater than in any of the other batches. Although the comparatively small size (78 men) of this batch precludes the possibility of drawing definite conclusions, it is perhaps worth recording that all the men were South Wales miners. Further insight into the method of spread of the infection is obtained from most interesting observations made by Matthews and Smith (1919). They singled out six of the children found by them to be infected with *E. histolytica*, and then proceeded in each case to examine, so far as was possible, the whole family of which the infected child was a member. In the first family *E. histolytica* was found in the stools in seven of eight members, in the second in four of four, in the third in two of four, in the fourth in one of three, in the fifth in two of three, and in the sixth in one of three. Thus, in the six families, comprising twenty-five members, no less than seventeen (68 per cent.) were found infected with *E. histolytica*.

These two observations—the prevalence of the infections amongst the miners and the extraordinarily high proportion of infections amongst the members of the six families mentioned—are most important, and indicate in a striking manner how under certain conditions infection can spread in this country.

Now, in the past, in fact even up to the present time, it has been generally accepted that the infection which has been discovered amongst our troops invalided home from the East for causes other than dysentery has been acquired abroad in places where amoebic dysentery is endemic—for example, the Eastern Mediterranean, Egypt, India, Mesopotamia, and Africa. This is a very important question from the point of view of the public health of this country, and it will be interesting to examine the hypothesis in the light of the information recorded above.

Wenyon and O'Connor (1917) in their admirable book entitled *Human Intestinal Protozoa in the Near East*, record the result of examinations of healthy British troops in Alexandria, and of healthy natives in an Alexandrian prison; a single examination of each individual showed that 5.3 per cent. of the former were infected with *E. histolytica*, and 13.7 per cent. of the latter. From these facts Wenyon and O'Connor conclude that the native of Egypt is acting as a reservoir of infection for the intestinal protozoa with which the British troops have become and are becoming infected. This was, of course, a natural and legitimate conclusion from the evidence available to Wenyon and O'Connor at the time. It is, however, not without interest to examine it in the light of present knowledge.

All the results recorded in Table II are based on a single examination in each case, and are therefore comparable. The young recruits alone are included in this table because it is obvious that they represent the class of the civilian population which is most comparable with the soldier.

TABLE II.—Showing Percentage of Cases infected with Intestinal Protozoa.

	Number Examined.	<i>E. histolytica</i> .	<i>E. coli</i> .	<i>E. para.</i>	<i>G. intestinalis</i> .	<i>C. mesnili</i> .
Recruits never out of Great Britain (Table I above)	1098	5.6	18.2	5.5	7.0	2 cases
Dysenteric (Mackinnon) convalescents	914	4.9	—	—	—	—
Non-dysenteric (Mackinnon) convalescents	766	3.5	—	—	—	—
Dysenteric (Mackinnon) convalescents	1713	5.9	15.5	—	11.3	—
Non-dysenteric (Mackinnon) convalescents	450	6.4	14.2	—	10.8	—
Healthy troops in Alexandria (Wenyon and O'Connor)	1979	5.3	20.0	0.5	4.8	1.1
Healthy natives in Hadra Prison, Alexandria (Wenyon and O'Connor)	524	13.7	48.6	0.0	0.57	0.19

The important fact stands out in Table II that the degree of infection with *E. histolytica* is approximately the same in the four groups:

- (1) Young recruits who have never been out of England and who have been in the army only a short time.
- (2) Non-dysenteric soldiers invalided from abroad.
- (3) Chronic or convalescent dysenteric soldiers invalided from abroad.
- (4) Healthy British troops in Alexandria.

If, now, the 1,098 recruits examined at Liverpool constitute a fair sample of the men who enlisted in the British army it is possible that the bulk of the infection found by Wenyon and O'Connor amongst the healthy troops at Alexandria was not contracted from the native population, but was taken out to Egypt from this country. On the other hand, it is possible that the infection is only of recent introduction into this country, and that the troops which originally went out to the East were not infected, but contracted the infection there from the native population, and on returning home they, in turn, infected the population of this country. I shall return to this question later.

Danger of Amoebic Dysentery Spreading in England.

Whether there is any danger of a serious outbreak of amoebic dysentery in this country is an important question which necessarily engages the attention of those responsible for the public health. Wenyon and O'Connor, writing on this subject, state "we may expect some temporary increase in the local cases of amoebic dysentery, but the disease is unlikely to gain a permanent footing in this country, for the British carrier will never in the long run aid the spread of the disease as does the insanitary native of Egypt." Unfortunately, however, in view of the widespread infection of intestinal protozoa found by Matthews and Smith in persons who have never been out of England, it appears that Wenyon and O'Connor were rather optimistic in their judgement of the sanitary conditions obtaining, at least amongst certain classes of the community, in this country.

In attempting to form an estimate of the danger of an outbreak of amoebic dysentery in England it seems to me a matter of considerable importance to determine whether the infection is of recent introduction into this country or is of old standing. Failing definite knowledge of the state of the population before the war as regards infection with *E. histolytica* it was necessary to be cautious in expressing an opinion, but the following considerations point, I think, to the conclusion that the infection, although only recently discovered in persons who have never been out of this country, is probably of old standing and not of recent importation.

1. "Carriers" must constantly have been entering this country before the war. Private individuals, traders, civil servants, etc., were returning from the tropics in numbers every day; from time to time large bodies of troops were brought back from countries where the disease is endemic; and, finally, countless sailors had landed in our ports from all over the world. Reference might here with advantage

be made to the fact that of 82 non-dysenteric sailors examined by Matthews and Smith, 6.1 per cent. were found to be infected with *E. histolytica*, and also to the recent work of Baylis, who examined 400 men who had just entered the Royal Naval Service, and found ten (2.5 per cent.), eight of whom had never been abroad, infected with *E. histolytica*. Baylis also examined 888 cases in the Royal Naval Hospital, Haslar, most of whom were convalescent dysenteries, or were suffering from intestinal disorders of various kinds, and had been serving abroad, many of them in the Mediterranean area; cysts of *E. histolytica* were found in 52 (5.9 per cent.) of these. As Baylis himself remarked, these findings are the result of a single examination only of each case, and are therefore comparable with the Liverpool figures already quoted.

2. All the factors necessary for the spread of the infection are to be found in this country. The observations that amongst the asylum cases the proportion of infected was very high (9.5 per cent.); that amongst the 1,098 young recruits who had never been abroad the percentage of infected was equal to that in chronic or convalescent dysenteries, or in non-dysenteric soldiers invalided home for diseases other than dysentery; and that amongst the members of the six families examined by Matthews and Smith an astonishingly large proportion (68 per cent.) were infected—all lead one to the conclusion that under certain circumstances the infection can spread in England with the same facility as it does in regions where amoebic dysentery is endemic.

3. Notwithstanding the fact that before the war few but those directly engaged in the study of tropical medicine were familiar with the microscopic diagnosis of amoebic dysentery, there are on record in the literature details of well authenticated cases of acute amoebic dysentery and amoebic abscess of the liver. Reference to three such cases are given by Worster-Drought and Rosewarne, and details of three others by Laidlaw in a recent paper.

For these reasons I am inclined to believe that the widespread infection which the work of Matthews and Smith has disclosed amongst the population of this country is not of recent importation but is of old standing, and has not been discovered before simply because it was not expected, and therefore not looked for.

Whether the infection is of recent introduction or not, we are faced with the interesting state of affairs that certain classes at least of the population are heavily infected, but that very few indigenous cases of acute amoebic dysentery have so far been recorded. The facts (1) that under certain conditions the infection can spread in this country to such an extent that the population becomes infected to a degree equal to that found by Wenyon and O'Connor occurring in troops in Alexandria, and (2) that practically no cases of acute amoebic dysentery have yet been recorded, suggest that some additional factor, at present unknown, is necessary before acute amoebic dysentery develops. We have to recognize that even under the most favourable circumstances many are infected with *E. histolytica*, but comparatively few develop acute amoebic dysentery. It is interesting here to recall Walker and Sellards's classical experiments. These authors fed twenty volunteers (natives of the Philippines) on infected material from a case of chronic dysentery; of these, eighteen (90 per cent.) became parasitized, but only four (20 per cent.) developed amoebic dysentery, the incubation period varying from twenty to ninety-five days.

Diagnosis of Acute Amoebic Dysentery.

That there may be in this country many cases of amoebic dysentery, the true nature of which is not recognized, is, however, a possibility which I think cannot be dismissed without careful investigation. It seems to me that during the past two or three years attention has been focussed so intently on the "carrier" problem that one is perhaps in some danger of overlooking the claim of the actual dysenteric. From the administrative point of view the recognition of the "carrier" is a much simpler matter than the diagnosis and adequate treatment of the acute, or, more especially, the subacute dysenteric. The viability of the cysts outside the body is considerable, and they can readily be recognized in stools passed many hours or even days previously. In its vegetative stage the entamoeba is

however, of low viability outside the body and the parasites quickly become unrecognizable, or recognizable only with the greatest difficulty by the expert. The present military system may be adapted for the recognition of "carriers," but it is by no means so well fitted for the diagnosis of acute or of subacute amoebic dysentery.

The recent Army Council Instruction (No. 78, of February 1st, 1919) on the treatment and disposal of convalescents from dysentery lays down amongst other things:

(a) The hospitals selected as dysentery hospitals should have on their staffs a competent bacteriologist and protozoologist, and the laboratory in which the diagnostic work is done should either be in the hospital itself, or in very close proximity to it.

(b) The dysentery cases should be in the charge of medical officers specially selected for their experience of, or aptitude for, the work, and as few changes as possible should be made in these appointments.

(c) The bacteriologist and protozoologist should be in intimate touch with the medical officer in charge of the cases, and should have full access to the patients and to their records.

With these admirable instructions I most cordially agree; experience in Liverpool, however, compels me to remark that it might be to the public advantage if those responsible for the instructions took steps to ascertain the manner in which their instructions are carried out.

On February 25th a patient was admitted to the Tropical School Hospital, Liverpool, suffering from acute dysentery. He was extremely ill, very emaciated, and passing daily fifteen to twenty stools consisting of little more than blood and mucus. On microscopical examination of the stools vegetative *E. histolytica* were found in large numbers: the case was obviously one of acute amoebic dysentery. The following significant history was obtained, partly from the patient's statements and partly from his records. On contracting dysentery in Mesopotamia in 1916 the man was sent to India, where he remained for two years, suffering from repeated attacks of acute dysentery. Towards the end of last year he was invalided home, and in December was admitted to one of the military hospitals in Liverpool. Specimens of the stools were sent four times to the Tropical School laboratory (at a distance of about two miles from the hospital), and on each occasion the protozoological report was negative. As at the end of three months, during which no diagnosis was made, the patient's condition was desperate, he was transferred to the Tropical Hospital. This hospital is practically adjacent to the laboratory, and, as I have mentioned, a diagnosis of amoebic dysentery was made immediately on the patient's admission by the very protozoologist who had returned four negative reports on the material sent from the previous hospital. The explanation is obvious: the specimens sent from the first hospital were old and unsuitable (a little bloody mucus mostly absorbed in a cotton-wool plug).

The history of such a case illustrates the desirability, from the patient's point of view, of a rigid application of the Army Council Instruction quoted above. If the organization designed for the diagnosis of dysentery is defective in the case of acute dysenterics who are still in the army it is not difficult to imagine what it must be in the case of pensioners and others invalided from the army for chronic dysentery and who are scattered all over the country. How many of such cases in the event of a relapse of acute dysentery are likely to have the benefit of the opinion of a skilled protozoologist?

Can *E. histolytica* be Distinguished from *E. coli*?

Before leaving the subject of acute dysentery I might refer very briefly to the difficulty of distinguishing the vegetative stage of *E. histolytica* from the corresponding stage of *E. coli*.

While there is little difficulty in distinguishing the encysted stage of *E. histolytica* from the corresponding stage of *E. coli* most workers will agree that the differentiation of the vegetative stages of the two entamoebae is a matter of the greatest difficulty. Wenyon and O'Connor, recognizing the practical difficulties standing in the way of accurate diagnosis, decided to call no infection one of *E. histolytica* unless at least some of the amoebae contained red blood corpuscles, or unless they could find definite cysts of *E. histolytica* associated with the amoebae in the stool. In order to determine whether *E. coli* ingest red blood corpuscles Wenyon and O'Connor mixed perfectly fresh faeces containing large numbers of *E. coli* with a quantity of finger blood; the mixture was placed at once in the warm incubator, and examined from time to

time, but no amoebae were found containing ingested red cells. From this experiment it is concluded that "*E. coli* does not readily ingest red blood corpuscles under the conditions of experiment." This is perfectly true, but does not exclude the possibility that under other conditions *E. coli* might ingest red cells. Dr. Macfie and I investigated the point in connexion with an amoeba of the *limax* type.

Large numbers of *Amoeba limax* were mixed with a quantity of finger blood on a slide which was placed on a warm microscope stage and carefully watched; no phagocytosis of red cells was seen to take place. When, however, the *Amoeba limax* was sown on Musgrave and Clegg's medium containing fresh blood, the organisms multiplied rapidly and an intense phagocytosis of red corpuscles took place.

This experiment shows that although under certain conditions *Amoeba limax* will not ingest red cells yet when the conditions are more favourable for the growth and activity of the organism it readily ingests red cells. It is possible that if an experiment could be devised under conditions more favourable to the activity and growth of *E. coli* than those obtaining in Wenyon and O'Connor's experiment it might be found that this organism also was capable of ingesting red blood cells.

My own view is that, at present, there is no character by which it is possible with certainty to distinguish the vegetative stage of *E. histolytica* from the corresponding stage of *E. coli*. I would therefore lay down as a general guide that if entamoebae are found in numbers in the stools of a person suffering from acute, or subacute, dysentery the case should, for purposes of treatment, be regarded as one of amoebic dysentery. *E. coli* may be present in the stools at the beginning of an attack of bacillary dysentery, but as the dysentery continues they rapidly disappear.

The Treatment of Acute Amoebic Dysentery.

In conclusion, I should like to draw attention to the value, in the treatment of acute amoebic dysentery, of bismuth subnitrate in massive doses, as recommended by Deeks from experience gained in the Panama zone. A combination of large doses of bismuth by the mouth, combined with hypodermic injections of emetine, gives much more constant and satisfactory results than emetine alone.

Details of the Treatment Recommended.

A preliminary saline purge is given unless the acute dysentery has already persisted for several days, in which case it is unnecessary.

Emetine HCl, gr. j, is injected subcutaneously, and bismuth subnitrate, 3 ij or iij, suspended in milk or water, is given by the mouth three or four times daily for a period of twelve days.

Occasionally a morning saline may be necessary if the bismuth causes constipation.

This treatment, in my experience, invariably clears the stools of entamoebae—a result which can by no means be claimed for emetine alone—and causes the disappearance of the symptoms of acute dysentery, the stools speedily becoming less frequent and free from blood and mucus.

I have ventured to introduce these brief remarks on therapy because it appears to me that during the past few years the mass of literature dealing with the use of emetine in dysentery has been so great that the practitioner is in danger of overlooking the value of a drug which, when properly administered in massive doses, is of the greatest value in the treatment of the acute, or the subacute, stages of amoebic dysentery.

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THE OBSTRUCTION OF MEDICAL RESEARCH.

THE "DOGS' PROTECTION" BILL.

THE passage through a Standing Committee of the House of Commons, without amendment, of the so-called "Dogs' Protection Bill" has rudely awakened, to a danger too lightly regarded, every one who in any way realizes the importance of the issues involved. In the *Times* of April 8th Sir Philip Magnus tells how the past master of parliamentary tactics who introduced the bill was able to bring it up for second reading unexpectedly, at the close of a sitting, and to secure, almost without discussion, its reference to a Standing Committee. The Committee was apparently composed in the usual way, mainly of members selected with reference to their political affiliations, without any regard to their competence to deal with an essentially scientific question; three or four medical members were added, and a contingent of nominees of the member in charge of the bill, who could be trusted to know his own supporters. In two short sessions, and with the help of the closure, the bill passed through this Committee without amendment. The next stage will be that it will come before the House for third reading at the next opportunity, which may occur any week.

The effect of the bill, if it should pass into law, is plain enough. It would render any one who made an experiment of any kind upon a dog liable to prosecution. Its enactment would cripple progress, so far as this country is concerned, in some of the most important fields of medical investigation. The whole weight of informed opinion must be brought to bear to prevent such a calamity. Letters of protest and warning have appeared in the *Times* of April 5th, 7th, 8th, and 9th from Sir Edward Sharpey Schafer, Dr. Thomas Lewis, Dr. Leonard Hill, Professor Langley, and Professor Starling. The *Morning Post* of April 7th published under the heading, "A Blow to Medical Science," an admirable statement of the case against the bill. The lay press is fulfilling a valuable function in thus enlightening general opinion.

So far as our own readers are concerned, we are preaching to those who need no conversion, but it may be doubted whether the medical profession as a whole has fully realized its responsibility to the public in this matter. The unscrupulous agitation, which has at length come so perilously near to achieving an instalment of its purpose, has been aided by the prevalent ignorance of the public, and by the power of appeal to a sentiment which is strongly developed in all Englishmen—in medical men as in others. The dog has established a proper claim on man's sympathy and affection, and the public have the right to inquire whether its use for experiment is essential for the progress of medical science, and to be satisfied that the practice involves no significant amount of pain. The materials for assurance on both points are in the hands of every medical man who has thought about the matter and has made himself acquainted with readily accessible facts. The Research Defence Society has done valuable work, but the ordinary man or woman has more confidence in the friend with expert knowledge than in the publications of societies. He has the right to expect that his feelings, harrowed by an insistent campaign of misrepresentation, shall

not be treated merely with good-humoured tolerance. The plain facts of the case are easily made clear, and would be accepted by the vast majority of laymen from the medical advisers whom they trust. If lay opinion had not been left so much at the mercy of a mendacious agitation, it is incredible that even a tired and apathetic remnant of the House of Commons would have allowed this bill to pass its second reading almost without discussion.

The part played by experiments on dogs in the building up of medical science, and the necessity of their use for its further progress, are made abundantly clear in the correspondence above mentioned. Each department of experimental medicine has its special needs in respect to the kind and size of animal subjects for experiments. For studying the transmission of infections and for the production of small samples of immune serums the rodents serve well, and are predominantly used. When large quantities of a serum are needed a horse must be used. For research in the domain of physiology, well called the Institute of Medicine, for it is the basal science on which the whole of medicine is built, the smaller animals have less value. For precise investigations into the functions of different organs, for studying the mechanisms of digestion, absorption, assimilation, and excretion, there are certain conditions which the animal subject must fulfil. It must be of suitable size, so that its organs and tissues are neither too small nor unmanageably large; it must be omnivorous, like man, and must resemble him sufficiently in the general structure of its alimentary canal and its digestive processes; it must, for reasons of humanity as well as of convenience, be an animal which can be kept in health, comfort, and cleanliness under the conditions imposed by laboratory investigation. The dog is the only available animal which fulfils these conditions or makes any approximation to fulfilling them.

A very large part of the exact physiological knowledge yet available is based on experiments on dogs, which have been used not because they were easily or cheaply obtained, but because no other available animal would have given the required information. Practically the whole of our knowledge of the function of the heart and circulation, of the formation and movements of lymph, of the secretion of the digestive juices, of the movements of the alimentary canal, of the absorption, assimilation, and metabolism of food-stuffs, of the excretion of waste products, of the function of the ductless glands—practically all had its origin in experiments on dogs. Dr. Lewis, in his valuable letter to the *Times*, shows how the whole of the recent advance in the clinical study of the diseased heart, in which he has himself played so important a part, would have been sterilized and frustrated if concurrent investigations on the dog's heart had not provided the key to the meaning of the complex curves traced by the new recording instruments. As another example, we may mention the recent advance in the treatment of diabetes, which resulted directly from a study of the means of controlling the condition as produced experimentally in the dog. Professor Starling, in a letter to the *Times* of April 9th, pointed out how the advance of surgery, no less than of medicine, has been dependent on experiments made on dogs. "By such experiments it was found possible to excise portions of the alimentary canal, to make openings from one part to the other in order to relieve obstruction, to implant bone or other tissues so as to restore defects, to deal fearlessly with the cavity of the chest, to sew up wounds in the living and beating heart, to restore continuity in wounded blood vessels, and to operate with success on the

brain itself." The number of lives saved and the amount of suffering alleviated during the war as the direct result of these discoveries are beyond all power of computation.

Even if no examples of such immediate application could be quoted, the justification of experiments on dogs would remain intact. So far as medicine is yet a science, it is based on exact physiological knowledge; this knowledge could not have been obtained without experiments on dogs in the past, and its future expansion will be immeasurably impeded if such experiments are now made impossible. That such a blind folly should be contemplated in this country has a peculiar humiliation; for the world has recognized its contributions to physiology, from the days of Harvey, of Mayow, of Stephen Hales, down to the present, as one of the brightest glories of British science.

Public opinion is probably more deeply concerned with the question of the pain, which is alleged to be involved in experiments on animals, than with the value of the information obtained from them. The general ignorance on this aspect of the matter is truly deplorable, for the campaign of calumny has been tirelessly carried on. Popular nomenclature and official formulae have been freely used as aids to misrepresentation. To many of the public "vivisection" means the merciless carving of a sentient creature. The lady who will placidly hand over her cherished cat to be castrated by the coachman or the vendor of cat's meat will denounce with horror the performance of a much less serious operation in the laboratory, with the greatest surgical skill and cleanliness, and under complete anaesthesia. The latter is undertaken for the pursuit of knowledge, and is therefore "vivisection," with all that that word implies. The public do not know that the "vivisection" of which they hear is often the mere feeding of an animal with an experimental diet, its exposure to the atmospheric conditions encountered by the airman or the mountaineer, or a hypodermic injection to which they would submit themselves without flinching. They do not realize that the large majority of the dogs subjected to experiment are killed while still under the full anaesthesia maintained during the whole time the procedure is being carried out, and meet an easier death than any of the thousands sacrificed every week in the lethal chamber of the "Dogs' Home." Certificate A is produced as evidence that "vivisection" without anaesthetics is permitted; and the public do not know, as their misleaders do, that this certificate has never been granted or sought for any procedure more serious than a hypodermic injection. It is surely the plain duty of the medical profession to see that no opportunity of informing them is wasted.

The threatened passage of this bill through Parliament, just as the country is emerging from the bitter years of war, is of ominous significance. Have we indeed learnt nothing, and are we still to be haters and despisers of knowledge? The nation, during more than four years, has given not only the flower of its young manhood, but horses and even dogs, to the daily torture of bombardment by the enemy's high explosive, of suffocation and burning by his poison gases. The immeasurable suffering thus imposed had its justification in the end in view. The medical profession has an end in view—the mastery of pain and disease by knowledge. Is this so mean an aim that it will not justify the sacrifice of a few dogs, with all the safeguards against pain which the existing law affords? Truly this is not a matter affecting only those who are devoting their lives to research; it touches closely the honour of every member of a humane profession.

It is a matter, as Sir Edward Sharpey Schafer points out, affecting the Government, which but a few years ago provided the means for a broad scheme of medical research.

When the bill, after passing through the Standing Committee, came before the House on the following day for third reading, the Under Secretary of State for the Home Department (Sir Hamar Greenwood) introduced an amendment which is calculated to mitigate the evil that would be worked by the bill if it were to become law as it left the Standing Committee. The amendment would leave out the words forbidding any person or place to be licensed for the performance of experiments on dogs, and would permit such experiments on the acceptance by the Home Office of an additional certificate showing "that for reasons specified the object of the experiment would necessarily be frustrated unless it is performed on a dog, and that no other animal is available for such experiments." The decision of the House on this amendment has not been taken because the debate was adjourned by the operation of the time rule. We are glad to see this evidence that the Government, and especially the Home Office, realizes its responsibility in the matter. The bill may come up again any week, and meanwhile it is the duty of the medical profession to make its disastrous significance clear to all concerned.

PROTEST BY THE SPECIAL CLINICAL AND SCIENTIFIC MEETING OF THE BRITISH MEDICAL ASSOCIATION.

The serious menace to the progress of medicine by research contained in the Dogs' Protection Bill was brought to the notice of the Special Clinical and Scientific Meeting of the British Medical Association in London this week. As there was no general meeting the opportunity of a joint meeting—with Colonel Haven Emerson, Medical Corps U.S.A., in the chair—of the Sections of Medicine and of Preventive Medicine and Pathology on Thursday, to discuss influenza, was taken to bring the matter forward.

The following resolution was moved by Sir William Osler, F.R.S., Regius Professor of Medicine in the University of Oxford, seconded by Professor C. J. Martin, F.R.S., Director of the Lister Institute, and supported by Sir George Makins, President of the Royal College of Surgeons of England. Colonel Emerson, in putting it, said that though the bill was British the success of faddists here would encourage their kind in other countries. The resolution was carried unanimously.

This meeting of the combined sections of Medicine, Pathology, and Preventive Medicine, of the British Medical Association learns with dismay of the possibility of the passage through the House of Commons of a bill to prohibit experiments upon dogs.

The anatomical structure and omnivorous habit of the dog, together with the fact that it can be kept in health and comfort under the conditions imposed by laboratory work, render the larger sort the only available subject for experiment in important fields of physiological and pathological investigation.

The prohibition of experiments upon dogs would, in the opinion of this meeting, have the deplorable result of hampering the progress of medicine and of rendering Britain alone, among the civilized nations of the world, unable to contribute to progress in a department of medical research in which it has hitherto played a distinguished part.

A resolution in similar terms was put to the Section of Surgery by the Chairman, Sir Anthony Bowlby, on the proposition of Professor Bayliss, F.R.S., seconded by Dr. H. H. Dale, F.R.S., and carried unanimously.

THE SECTIONS.

THE Special Clinical and Scientific Meeting of the British Medical Association in London this week is a success even beyond expectation. The numbers attending each of the three sections are large, and the debates well sustained, with that spice of frank criticism which gives life to discussion. On Wednesday the physical chemistry lecture theatre was quite filled by those attending the discussion on the dysenteries in the Section of Preventive Medicine and Pathology, while large and appreciative gatherings followed the discussions in the sections of Medicine and of Surgery, held respectively in the big chemical and physical theatres. The opening addresses in the three sections on the first day are published in our present issue, and we print below brief reports of Wednesday's discussions. Full reports will be published later in a special volume containing the proceedings of the meeting. The number of members and visitors who had registered in the Reception Hall at the Imperial College of Science on Thursday morning was over seven hundred.

WAR NEUROSES.

THE meeting of the Medical Section on Wednesday, under the chairmanship of Sir David Ferrier, F.R.S., was very well attended, Lieut.-Colonel Mott, R.A.M.C.(T.), introduced the subject of war neuroses in a paper printed in full elsewhere in this issue of the BRITISH MEDICAL JOURNAL. He was followed by Lieut.-Colonel Hurst, R.A.M.C.(T.), who gave a lucid analysis of the various emotional neuroses and added some results of his experiences at the Seale Hayne Hospital. The general trend of his observations was to show the preponderating part played by hysteria in the production of war neuroses; the test between organic and functional nervous disease should be the response to psychotherapy, and he had found that patients with such suggestive symptoms as urinary incontinence, constant vomiting, constant headache, and recurrent fits might all be suffering from functional disease, whether primary or secondary to cured organic nervous disease. He held most cases of epilepsy in soldiers to be functional. For treatment he advocated explanation and re-education, making the patient take an active part in his cure. Lieut.-Colonel Farquhar Buzzard laid stress on the similarity of the neuroses of peace and war, adding that those of war were easier to treat because their etiology was the more uniform. He proceeded to draw from experience in war lessons of value for peace, advising that the Minister of Health should institute both prophylactic and remedial measures—the training of medical officers to deal with neuroses, the provision of out-patient clinics and a larger number of institutions for its treatment—and he described labour unrest as the war neurosis of a community. Colonel Sir James Purves Stewart devoted himself to pointing out the importance of accurate clinical diagnosis and the clear definition of terms when dealing with that ill-named complex “shell shock”—a term never to be employed again; he gave a classification of neuroses into eight groups. On all hands the frequent occurrence of neuroses in the present war had excited comment; in previous wars our men had been trained and seasoned soldiers, and he expressed surprise that the number of cases of neurosis occurring in our armies during the last five years had been relatively so few. Dr. Yealland gave an account of his work in the National Hospital in Queen Square, and took the opportunity to decry the use of hypnotism and methods of psycho-analysis in the treatment of war hysteria, for the reason that so many patients thus treated arrived later for further treatment in the out-patient department of that hospital. Dr. Johnston gave an admirable account of his treatment of many thousand cases of war neurosis at a specialized casualty clearing station in the front area, and stated that only 1 per cent. of our men

fighting about Passchendaele between August and October, 1917, went sick as cases of neurosis. He described the methods of treatment adopted, emphasizing the importance of a healthy moral atmosphere, the segregation of the patients, and the inception of the appropriate treatment as soon as possible. Dr. Dundas Grant spoke of the difficulty of distinguishing organic from functional disease of the ear in many cases of neurosis, and said that he had met with very few cases of simulated deafness. Details of the elaborate system of dealing with cases of war neuroses in the American fighting forces were given by Colonel Zabriski and Major Hamilton, Med. Corps U.S.A.; and Colonel M. Macdonald, N.Z.M.C., gave an interesting analysis of the possible etiology of the contractures seen in patients with war neuroses. Major Ormond, R.A.M.C.(T.), gave an account of some interesting ophthalmological cases in which the diagnosis between functional and organic disease was obscure. Lieutenant Lumsden, R.A.M.C.(T.), laid stress on the importance of following up cases of war neurosis supposed to have been cured, and deprecated the use of the term “cure” until the passage of years justified it. Prevention of relapse was what the sufferers wanted rather than the removal of their neurotic symptoms; the epileptics and borderline mental cases were, in his experience, the most difficult to deal with. Colonel Gordon Holmes, speaking from two years' study of war neuroses in France, described the results of treatment of the functional cases as unsatisfactory on the whole, adding that at the present moment no fewer than 36,000 war-neurasthenic patients were awaiting re-educational treatment. He quoted cases to illustrate the unsatisfactory results obtained by the treatment of hysteria with psycho-analytic methods. Surgeon Lieutenant Beaton, R.N., said that hysteria had never got a footing in the navy, in which cases of neurosis had been rare. Captain Culpin spoke in favour of the use of psycho-analytical methods in the treatment of patients with war neuroses. In conclusion, Colonel Mott replied, commenting on the remarks made by many of the speakers; and so a very successful and illuminating discussion came to an end.

GUNSHOT WOUNDS OF THE CHEST.

At the first meeting of the Section of Surgery, which took place on Wednesday morning, Sir George Makins, G.C.M.G., President of the Royal College of Surgeons of England, was in the chair, and a discussion took place on gunshot wounds of the chest. The opening papers by Colonel T. R. Elliott, D.S.O., F.R.S., and Colonel G. E. Gask, C.M.G., D.S.O., are published elsewhere in this issue.

The discussion was taken up by Major J. E. H. Roberts, who said that his experience of thoracotomy in a quiet sector, when cases could be treated carefully, was that the results were very good; during a time of stress and with surgeons of limited experience in that class of case, the results were unsatisfactory. He found there was always some clot in the haemothorax; if this was turned out and the pleura cleansed, any sepsis that occurred was generally successfully treated by repeated aspirations, unless haemolytic streptococci were found. He objected to the method of artificially expanding the lung, because of the danger of septic material being driven into the other lung and setting up septic pneumonia.

Major Lockwood was an enthusiastic advocate of operation. In early cases, which formerly had a mortality of practically 100 per cent., he had seen it reduced to 28 and 34 per cent. He recommended that the methods adopted in these early cases should be applied to late cases where there was collapse from any cause, or where there was a chronic discharging fistula. Where the missile in the lung was not large the cases should be left alone. He made a plea for local anaesthesia, as it diminished the risk of shock. In these late cases, where the object was to

improve the general health, operation should not be too readily undertaken; the case should be carefully studied beforehand in conjunction with a radiographer.

Colonel Barling, C.B., felt certain, from experience of cases of septic haemothorax at the base hospitals, that by operation the period of convalescence was shortened. Unfortunately the great majority of cases had to be drained and the pleural cavity irrigated, generally for three or four weeks, before closure could be attempted. A small number of cases might be selected for primary suture; they could be recognized clinically by the fact that they ran a mild course, the temperature being the only indication of the presence of septic material. From the point of view of the bacteriology immediate closure could be done unless streptococci were present. These cases perhaps required a few aspirations afterwards. The problem at the base hospitals was largely one of overcoming pleural as contrasted with pulmonary sepsis.

Colonel A. B. Soltau, C.M.G., doubted whether the results of surgery were very striking. He did not think that the theory of Colonel Elliott with regard to bronchial spasm met the condition, for there were seldom any clinical signs of it. He offered the alternative suggestion of reflex paralysis of the muscles controlling respiration, and pointed out how often painful tonus of the abdominal muscles was found on the affected side. This tonus he regarded as an effort of nature to enable the lung to close down and arrest haemorrhage.

Sir John Rose Bradford dealt with the question of massive collapse. In the simplest form it occurred in contralateral collapse, in association with non-penetrating wounds of the chest, generally of an extremely trivial character. This occurred without serious symptoms, and developed quite early. In the first stage nothing could be elicited except weakness in the breath sounds. This was followed by loud tubular breathing, and in the third stage by the presence of adventitious breath sounds. It might last for a very considerable time without causing much trouble. There was no explanation available at present, but they trusted to laboratory research to settle the question. He considered that this massive collapse was present in every case of chest wound on the affected or unaffected side, or on both.

Miss Frances Ivens said that she had had experience of 166 cases, with a total mortality of 9 per cent. Of these 70 were perforating wounds and 96 penetrating; 84 were operated upon or aspirated. She found that by far the most successful cases were those in which complete and early operation was done on the lines indicated by Colonel Gask, with closure of the wound. A certain number of these cases, however, developed empyema, and she had adopted the plan of irrigation by the Carrel method until a bacteriological report was negative. The same treatment, in conjunction with large doses of antgangrenous serum, was adopted where anaerobic organisms were present. It was most important to have close co-operation between physician and surgeon.

Mr. Maynard Smith, C.B., contrasted the condition of chest cases as found at the base and the casualty clearing stations. The first success that surgery had was in dealing with sucking wounds, a condition incompatible with life. When the idea was adopted at the field ambulances of roughly suturing these wounds they arrived at the casualty clearing stations in an infinitely better condition, and later, with the removal of all damaged areas and the application of general surgical methods, there was no question that there was a considerable diminution in mortality.

Dr. Finzi said that the work of the radiologist consisted mostly in making screen observations of the movements of the diaphragm, the presence and movements of foreign

bodies, the position of the heart, and the presence and distribution of opacity in the chest. He gave a radiographic demonstration of various conditions found in chest injuries.

Sir Anthony Bowlby traced the progress of surgery of the chest during the war. It was not till 1916 that the treatment of wounds by excision was commenced, and not till 1917 that it was applied to chest conditions. There was no doubt of the great improvement that resulted by operation, especially when repeated aspirations were done after operation. It had to be admitted, however, that sometimes unsuitable cases were operated upon. In 1918 surgery of the chest was placed upon a sounder basis, and it was found that about one-sixth of all cases were capable of being improved by operation. Among 608 cases admitted to a special hospital at Rouen the mortality sank to 2 per cent., and very few previously operated upon at the casualty clearing stations had to be reopened for sepsis. He wished to learn the later effect of large and complicated haemothorax.

Colonel J. W. Smith, in reply to the request of the Chairman for experience at home of the later condition of cases with retained foreign bodies in the lungs, said that in the majority the discomfort and disability was not great, and removal of the projectile was not advisable.

Sir Berkeley Moynihan said that in many of the cases in which a projectile was retained in the lung the patients complained of pain, disinclination for active exertion, and sometimes haemoptysis. He decided to operate on some of these cases, and at first looked upon the removal of the foreign body as the prime object; that was easy, and the majority of missiles were sterile. Afterwards he found, however, that the great lesson to be learned was the advisability of the liberation of the lung from its embarrassing entanglement of adhesions. When the lung was thus freed the condition was undoubtedly immensely improved. He gave brief details of the technique adopted.

Sir George Makins, in closing the discussion, called attention to the fact that Sir William Macewen years previously had pointed out the principles on which thoracotomy could be done without having recourse to the cumbersome apparatus of closed chambers. In reflecting on the claims of foreigners to have advanced thoracic surgery it would be unbecoming not to pay to Sir William Macewen the credit due to him for his great pioneer work. With regard to the question of bronchial spasm in collapse, he threw out the suggestion that the condition of vascular stupor, so well recognized in the limbs, for example, might be reproduced in the conditions of pulmonary vessels in chest wounds. He had no doubt that immense advances had been made by surgery in cases of gross damage to the chest and in closing the thorax; but he was doubtful if a simple haemothorax of moderate size should necessarily be treated by operation.

THE DYSENTERIES.

At the opening meeting of the Section of Preventive Medicine and Pathology on Wednesday, Colonel C. J. Martin, F.R.S., took the chair in the absence of Colonel Cummins, A.M.S., detained by duty abroad. The subject was placed before the meeting by Colonel L. S. Dudgeon, C.M.G., who dealt with bacillary dysentery, and Professor Warrington Yorke, who dealt with amoebic dysentery in England. These papers are published in full elsewhere in this issue. There was a large attendance and the discussion discovered some differences of opinion, especially amongst the bacteriologists who have been working on different fronts, as to the variety of Shiga bacilli concerned; while Professor Yorke's investigations on indigenous amoebic dysentery amongst civilians and recruits raised important questions as to the possibility of an

epidemic arising in this country. Sir William Osler, referring to the mild character of the cases of amoebic dysentery admitted to English hospitals, said that hepatic abscess had been rare; this he attributed to the beneficial effect of the emetine treatment. Colonel Haven Emerson, Medical Corps, U.S.A., said that cases of amoebic dysentery or carriers discovered in the American Expeditionary Force were, with rare exception, men who had served in the Philippines or who lived in southern states, where amoebic dysentery was not uncommon. Among about 1,500 cases of clinical dysentery carefully studied for strains of bacilli, the same groups of bacilli were found in the main as were reported by the pathologists of the British Expeditionary Force. Captain Stokes, D.S.O., R.A.M.C., dealt with some points in the history of dysentery in France. He said that the infection in the Somme epidemic was from German sources; but there was a more generalized spread in 1917, especially in territory which had been occupied by the Germans. Lieut.-Colonel Duncan Graham said that he had found serum therapy more effective in dysentery due to the Shiga bacillus than in that due to the Flexner group. Captain Murray discussed the relation of dysentery bacilli, and Dr. F. W. O'Connor, of the London School of Tropical Medicine, dealt with the importance of incidence due to the fly. Major Ellis, C.A.M.C., questioned the value of the evacuation of diarrhoea cases from an army; and Colonel L. B. Wilson, Medical Corps, U.S.A., uttered a note of warning as to the risk of overlooking typhoid fever in searching for dysentery bacilli. Major-General Sir William Leishman, K.C.M.G., A.M.S., spoke of the importance of experience and new knowledge accumulated during the war in connexion with every branch of the subject. The discussion showed that there still existed considerable divergence of opinion on certain points, which could only be resolved by the final analysis and study of all the reports. Dr. Ramsbottom, O.B.E., stated that amoebic dysentery was probably endemic in Macedonia, though it had been believed to have occurred only in troops from Egypt or Gallipoli. He also discussed the treatment of cyst carriers; and Colonel Faichnie contended that more attention should be given to infection by means of the excrement of flies. Colonel Dudgeon and Professor Yorke replied briefly on the points raised in the discussion.

DEMONSTRATIONS.

NERVOUS DISEASES.

ONE of the first of a series of clinical demonstrations arranged in connexion with the Special Clinical Meeting of the Association was held at the National Hospital for the Paralysed and Epileptic, Queen Square, on Wednesday afternoon, April 9th. The medical staff of this hospital had collected a series of interesting and instructive cases, illustrating some of the rarer forms of nervous disease as well as certain nervous conditions produced by gunshot and other wounds.

Dr. Howard Tooth exhibited a long-standing case of tabes dorsalis in which extensive wasting of the shoulders and upper limbs had come on during the past six months; so that in addition to the ordinary signs of tabes there was extensive atrophy of the supraspinati, deltoids, triceps, supinator longus, and long extensors of the wrists and fingers, as well as of the intrinsic muscles of both hands. The amyotrophy consequently corresponded roughly to segmental distribution. Each of the two cases of syringomyelia shown also presented interesting features; that under the care of Dr. Risien Russell was in a relatively early stage, but Dr. James Taylor's case had been under observation at the hospital for many years; she is now bed-ridden, and has very little power of movement in the arms. In this woman the disease had extended to the brain stem, and produced extensive cranial nerve palsies

and very pronounced nystagmus. Cases of myasthenia gravis were also shown by Drs. Taylor and Russell. One of Dr. Taylor's patients was especially interesting, as in him this disease was associated with symptoms of exophthalmic goitre. In another case the disease was manifested chiefly by recurrent ocular palsies, which had repeatedly recovered spontaneously.

Tumours of the central nervous system were well represented. Dr. Farquhar Buzzard exhibited one of the fronto-cerebellar angle which probably grew from the acoustic nerve, and presented the characteristic symptoms of a growth in this region. In one of the patients shown by Dr. Gordon Holmes a large endothelioma had been removed a fortnight previously by Colonel Percy Sargent from the right fronto-central region. This woman's history was interesting as the first evidence of disease was a localized Jacksonian fit, which occurred as she was hurrying out of bed on the warning of an air raid in June, 1918. It was only later that she began to suffer from headaches, and developed optic neuritis and a slowly progressive left-sided hemiplegia, which was already beginning to disappear within a fortnight of the removal of the tumour. In another case, shown by Dr. James Taylor, the beneficial effects of decompression when the tumour is not removable was well illustrated.

Another happy result of surgery of the central nervous system was seen in a case exhibited by Dr. Grainger Stewart and Colonel Sargent. The woman had presented for eight months symptoms of slowly progressive paraplegia and deficient sphincter control; after the removal, five weeks ago, of a tumour which had compressed the first thoracic segment of the spinal cord the functions of the sphincters had become normal, and the patient was again able to walk. In a second case, which had been under the care of Dr. Hinds-Howell, the removal of a tumour from the same region by Colonel Sargent had an equal happy result.

The surgery of the peripheral nerves was represented by a series of cases, demonstrated by Colonel Sargent, of primary and later suture, and of the effects of the insertion of grafts when it was found impossible to bring the ends of the nerves together for end-to-end suture. The effects of various injuries inflicted during the war were also illustrated by cases demonstrated by Dr. Gordon Holmes. Of these perhaps the most interesting was a stab wound of the lower dorsal segments of the spinal cord, which produced an extraordinarily pure Brown-Séquard syndrome. The knife entered between the laminae of the ninth and tenth thoracic vertebrae and injured the right side of the cord, with the result that the man developed immediately paralysis of his right leg and of the lower muscles of this side of the abdomen, which is now recovering; on this side he had also, during the first four or five weeks, burning and lancinating pains and intense hypersensitiveness to all peripheral stimuli. The original sensory changes remain unaltered; his left leg is insensitive to all painful and thermal stimuli, while in the right limb the sense of position is lost, and the appreciation of vibration, of movement, of shape, and of the compass points in Weber's test is abolished. This is consequently one of the rare cases of stab wound of the spinal cord so valuable in enabling us to analyse and determine the intramedullary paths by which afferent sensory impressions are conducted through the central nervous system.

In a second case, shown by Dr. Gordon Holmes, the symptoms indicated a lesion of the left side of the mid-brain. The man, who was blown up by a shell explosion a year ago, had paralysis of the left superior oblique, and complete loss of pain and thermal sensibility on the whole of the right side of his body, while his left limbs were ataxic and tremulous in movement and at rest. There was, however, no paresis on either side, and the reflexes were normal. His gait had the drunken, staggering character that is produced by cerebellar lesions; his speech was indistinct and ataxic, and nystagmus developed in movement of the eyes in all directions. A radiograph

revealed a doubtful fracture of the posterior fossa of the skull. The lesion was probably due to a direct blow on the head. Dr. Gordon Holmes showed also a soldier who was wounded eighteen months ago by a fragment of shell that passed through the cerebellum. The case illustrated most of the symptoms of a cerebellar injury of moderate degree though he had no nystagmus. Among other interesting cases shown were two brothers with Leber's hereditary optic atrophy, under the care of Dr. James Taylor. In each of these, x-ray photographs of the skull showed considerable enlargement and other changes in the sella turcica; this is particularly interesting in view of Mr. J. H. Fisher's suggestion that such cases of optic atrophy associated with signs of retrobulbar neuritis may be due to enlargement of the pituitary gland.

In a few of the cases demonstrated a definite diagnosis had not been reached. In a boy who was shown by Dr. Risien Russell the chief symptoms were progressive stiffness and weakness of various groups of muscles; another member of this family was somewhat similarly affected. A case of Dr. Buzzard's was characterized by frequent or continual clonic and tonic spasms of groups of muscles on one side of the body, which began in the region of the head and spread gradually to the limbs and trunk of this side. These spasms ceased in sleep. As his condition had not been influenced by repeated and vigorous suggestions and other psychotherapeutic measures it is improbable that they are purely functional, as was at first suspected.

MINE GAS POISONING AT THE WESTERN FRONT.

ON Wednesday afternoon Lieut.-Colonel D. Dale Logan, D.S.O., R.A.M.C., gave a demonstration of mine gas poisoning at the Western Front, showed the rescue apparatus, and explained the organization. Most people, he said, associated gas poisoning with the second battle of Ypres, when drift gas was used for the first time, and the subsequent use of gas shells, which grew more and more intense and caused serious casualties to both sides. Few, however, realized that in the use of what might be termed the legitimate weapons of modern warfare, in which explosives were used, thousands of casualties resulted from poisoning by carbon monoxide. A very large proportion of these were due to shells, bombs, and aerial torpedoes bursting in dug-outs, subways, cellars, concrete structures, and enclosed places, but many cases occurred in mining. On the Western Front mining was started early in 1915; the great struggle round Hill 60 in April of that year was fresh in memory. By the autumn of 1915 mine warfare had made huge strides, and, with the great increase in size of the explosive charges used, more extensive mine systems, and the fact that thousands of men were employed underground, the casualties from gas poisoning assumed serious proportions. As many of the men were skilled miners, whose places it was almost impossible to fill at the time, the wastage was affecting the efficiency of companies.

From the early ages mining was common in siege warfare. After gunpowder was discovered and used in mining, about the middle of the sixteenth century, a train of symptoms following exposure to the fumes became recognized. In France these were grouped under the term *mal des mines*, and the peculiar mental condition met with in men who regained consciousness was graphically described as *l'enivrement par la poudre*. A German commission which inquired into the large number of casualties caused by gas poisoning in connexion with war mines reached no satisfactory conclusion regarding prevention and treatment, but it advised the use of pigeons as indicators of danger. It appeared to be quite unknown to the mining world that pigeons and rats were used as gas indicators centuries ago. [The speaker then gave a description of mining, of the ventilation of mines, and examples of the rescue of men who had been entombed for days.] He had, he said, been attached

by the D.G.M.S. to the staff of the engineer-in-chief in September, 1915, in order to organize a system of rescue work and of protection against gas in mining. The insidious nature of the poisoning and the serious number of casualties lent support to rumours floating round tunnelling companies about the enemy employing a new gas and forcing it through into our galleries. From investigations of conditions underground after a blow, the manner in which casualties occurred, the detection of CO in the blood of men a few minutes after they had been rescued, the *post-mortem* examination of a number of men, and of canaries killed by gas, there was no difficulty in coming to the conclusion that CO from the detonation of explosives was the poisonous factor in mine fighting. The opportunities the enemy could have to force CO gas successfully into our galleries were so rare that this source of poisoning could be ignored. Orders were immediately issued for avoiding the more obviously preventable sources of accidents. Some of these were due to ignorance of the action of CO. For example, a number of fatal accidents had occurred owing to men who had been slightly gassed making their way out by climbing the vertical ladder in the shaft or walking up a steep incline, thus greatly increasing the demand on the already impoverished content of the blood; this resulted in loss of consciousness and the men fell to the bottom. Orders were at once circulated that no man, however slightly gassed he might seem, should ascend the shaft without being roped and hoisted. The difficulties and dangers of this method of bringing up an unconscious man, the constriction of the chest and the serious effect this must have had in certain cases, the dangers of the rope slipping, and also the great exertion entailed in hauling a man along the galleries, led to the introduction of the mine stretcher, designed by Lieutenant Penman, which proved of such value.

The danger of entering an atmosphere in which a man could walk a certain distance before perceptible symptoms of poisoning developed was not appreciated. A considerable percentage of the casualties were among men who rushed in without apparatus to rescue their comrades. The restricted length of galleries as compared with collieries at home was a great temptation to the men to attempt rescue without apparatus. The order "No man is to descend the shaft without rescue apparatus till the mine is reported clear of gas" resulted in a noticeable decrease in the number of casualties. The fact that the knowledge of explosives possessed by most people was vague probably explained the wonderful stories of discoveries of new explosives of extraordinary power circulated from time to time, such as that which went the round in the first few months of the war, of a French explosive which detonated with such extreme violence that Germans within a few hundred feet were killed, their bodies being frozen stiff with not a mark to be seen. Soon after America entered the war we were regaled with stories of a new American explosive, a teaspoonful of which would uproot St. Paul's Cathedral. After the great battle of Messines, when nineteen huge mines were blown by the British, one famous war correspondent made the statement, which aroused considerable hilarity among tunnelling companies, that one pound of ammonol, the explosive used, could blow the Mansion House to atoms. Tales of a similar nature appeared during the Russo-Japanese war.

Colonel Dale Logan next discussed the constitution of explosives, the different types used in the war, and the products of combustion, with particular reference to those used in mining, and how gas poisoning was produced in mining. The intensity of the mine warfare waged could be gauged by the fact that in 1916 the enemy fired 700 mines and camouflets, and we fired nearly 750. At the battle of Messines, when mining contributed so much to the success of operations, some mines were charged with over 90,000 lb., and the total charge in all the mines was considerably over one million pounds. Several of the mines had been laid for twelve months and many for nine

months, and that they were still effective when required showed how carefully the charges had been laid. The result was due to many months of strenuous silent watching and working of a particularly nerve racking character, and in order to preserve the mines until the great moment arrived much underground warfare and crater fighting was waged and many mines and camouflages blown. The character of the work underground entailed considerable nervous strain both for officers and men. Listening under certain conditions was particularly nerve-wearing, and at the same time most hazardous. From the time the listener began work his nervous system was in a state of tension more exhausting than work. To this must be added the deadly monotony and loneliness of the work and the necessity for absolute silence. Few could realize what silent working meant, and it was difficult to estimate the strain on the men, more especially as they were carrying out very arduous work all the time. The slightest noise might result in such serious consequences and have such far-reaching effects that every man had to concentrate his attention on working in perfect silence. The effect of intense concentration of the mind in causing early fatigue was well understood; and when this acute concentration was carried on during working hours for many months, as it was in silent work in the mine, it must be considered an important factor in the incidence of nervous affections in the miners.

The possibilities of gas poisoning of the infantry in the crater fighting, which was one of the most important features of the stationary trench warfare of 1915 and 1916, were then discussed, and the methods adopted to prevent gas poisoning of the infantry who went through the huge craters at Messines battle a few minutes after they were blown, described. The gases from the detonation of a high explosive included CO, H, and CH₄, all combustibles, and, when present in the proper proportion, explosive. How these gases were produced, the phenomena of an underground explosion and its results, and the methods adopted to prevent them, were described. Lastly, the speaker gave a description of the rescue organization in France, the training in the schools, rescue work in the trenches, and its dangers and difficulties. Much useful work, he said, was done "after blows" by mine rescue men in restoring ventilation, clearing galleries which had been wrecked, taking out tamping, etc.; and two instances were cited in which mines were charged and tamped by men wearing apparatus. A demonstration of the use of mine rescue apparatus was also given.

INJURIES TO BLOOD VESSELS.

At the Royal College of Surgeons, on Wednesday afternoon, the President, Sir George Makins, gave an epidiascopic demonstration of injuries to blood vessels. The results of contusion of arteries with thrombus formation were shown macroscopically and microscopically, and the changes that occurred previous to and following secondary haemorrhage. Arterial haematomata or false aneurysms, true arterial aneurysms, aneurysms showing a blockage by surrounding structures, and arterio-venous aneurysms were very fully demonstrated.

BONE INFLAMMATION AND BONE REPAIR.

A collection of specimens of bone inflammation and bone repair, made by Major L. G. Rhea, until recently pathologist to No. 3 Canadian General Hospital, Boulogne, who has returned to Canada, was demonstrated on his behalf by Colonel J. G. Adami, F.R.S., C.A.M.C., at the Royal College of Surgeons of England on Wednesday afternoon. The bone lesions coming under observation had been minutely studied, and full clinical histories of each case were given. Observations of the position of the bone fragments at operation, in the laboratory, and in the *post-mortem* room were carefully detailed. This necessitated many photographs, accurate measurements, and drawings. Apart from the interest attaching to the work of specimen

making, these observations were calculated to further our present knowledge of bone inflammation and bone repair, particularly as to the paths of spread of infection in fissured fragments, as to callus formation, and the results of mutual pressure in apposed bones. Colonel Adami directed particular attention to those specimens illustrating fracture of the femur and inflammation of the knee-joint.

DISEASES OF THE RESPIRATORY SYSTEM.

A demonstration of cases of diseases of the respiratory system was given at the Brompton Hospital for Consumption and Diseases of the Chest on Wednesday afternoon. Dr. Dundas Grant showed cases of tuberculosis and other diseases of the air passages; Dr. Cecil Wall cases under treatment with breathing exercises, of chronic hydro-pneumothorax, and cholesterinous pleural effusion. Dr. Fenton demonstrated two cases of pneumothorax, and Mr. Warren cases of bronchiectasis after operation. Dr. Batty Shaw showed a series of cases, including one of dermoid of the mediastinum, an instance of cardiac hypertrophic osteo-arthritis, and a case of non-tuberculous apical disease. He and Dr. Melville also gave a demonstration in the x-ray department, and Dr. Inman in the pathological department. Dr. Burrell, among other cases, showed some of artificial pneumothorax.

THE POPULAR LECTURE.

THE CASUALTY CLEARING STATION AT WORK.

MAJOR-GENERAL CUTHBERT WALLACE, C.B., C.M.G., delivered the Popular Lecture of the British Medical Association, entitled "A Casualty Clearing Station at Work," at Queen's Hall on April 9th, when the chair was taken by Lieut.-General Sir John Goodwin, K.C.B., Director-General Army Medical Service, who said that General Wallace had been in France during practically the whole of the war, and few men had had as many opportunities of seeing the work of the Casualty Clearing Stations on the Western Front. The Clearing Station was probably the most interesting medical unit that had functioned during the war, because its work was so new; and General Wallace had seen it both under stationary conditions and conditions of advance and retreat.

Major-General Wallace first explained the reason for the constitution of the Clearing Station, and traced its history in the early parts of the war. During the retreat in 1914 it failed to function, but came into being again at about the time of the battle of the Aisne. Its modern history, however, commenced when the British armies moved to Flanders and the line became fixed. The function of the Clearing Station then began to change, and many alterations in equipment were made. At first only urgent surgery, such as a military surgeon thought possible at the front, was undertaken; it was interesting to note that antiseptics were used from the commencement. As time went on surgery passed more and more from the Field Ambulances to the Clearing Stations. This was a wise decision on the part of the authorities, because surgeons were very limited in number; in fact, many of them had to be trained during the war. It was necessary, therefore, to concentrate the surgery if it was to be done at all efficiently. In November, 1914, nurses and beds were added to the Clearing Station, and at about this time, too, dentists were appointed.

There was little further alteration until the spring of 1915, when wounds began to be treated by opening up and drainage. At the battle of Neuve Chapelle each Clearing Station only had one table, and the greater part of the wounded passed to the base without operation. The expectant treatment of wounds of the abdomen was the method followed, except in a few instances, down to June, 1915, when operation became more general. The number of operation tables had been doubled at this period, which saw also better surgery of wounds and the introduction of

the hypochlorites as antiseptics. Trial was made of a greasy antiseptic paste for application to the wound soon after its receipt, but it could not be said that this was a success. At the battle of Loos the number of wounded received was so large that the lessons learnt could not be put into practice, but one thing it taught was that more operating facilities must be arranged and more surgeons provided. During the winter of 1915-16 the wound treatment improved; wounds were more freely opened and the practice of excising the damaged tissues became general. June, 1916, saw the introduction of the Carrel method, and bipp arrived soon after. At the Somme battle most clearing stations had three tables, a staff of about sixteen medical officers, and as many nursing sisters. It was at this time that surgery of the chest commenced. Altogether it might be said that the wounded arrived at the base in a far better state than from any earlier battle.

Towards the close of 1916 primary suture of wounds was commenced in a quiet portion of the line, and gradually made its way until early in 1917 in quiet times it became the practice. April saw the battle of Arras and Vimy, and the introduction into front-line work of Thomas's splint, which had been used in Clearing Stations as early as the summer of 1915. Throughout 1917 the excision of wounds became better and better understood, and treatment was facilitated by the fact that the pathology of gas gangrene had been worked out. The same year saw also the introduction of flavine and the numerous aniline dye pastes. By that date nearly every conceivable antiseptic had been used up and down the line. The wounds had done better and better, but the one constant factor was improvement in the excision and mechanical cleaning of the wound. It was to this more than to any antiseptic that the better results were to be traced. The year closed with the battle of Passchendaele, in which the French introduced the delayed primary suture of wounds. This was an extremely successful experiment, and the results, it should be noted, were obtained without the use of chemicals. The Clearing Stations had become larger and larger, a stereotyped plan had been evolved, in which by the arrangement of lashed tents the work was greatly facilitated.

So big had Clearing Stations grown that attention had to be turned to the problems of moving warfare, which most people saw was inevitable. In the spring of 1918 came the great retreat, and during this time surgery was largely transferred to the base. With the stabilization of the line Clearing Stations again made their appearance. On August 9th commenced the British advance, and from that time to the end of the war a tremendous strain was placed on the medical organization to keep up with the retreating Germans. Bad roads, lack of transport, and the interruption of railway communication, rendered the moving of Clearing Stations extremely difficult, but on the whole they were kept within a fairly reasonable distance; in some cases they were actually ahead of the railhead, so that the patients had to be evacuated as far as twelve or sixteen kilometres to the ambulance trains. The need of mobility made it necessary to give up a great deal of the previously accumulated impedimenta, and it soon became obvious that the Clearing Station could do its work without all the elaboration that had grown up.

Major-General Wallace then gave some figures showing the number of men operated on, and how, owing to the dearth of medical officers, the desired percentage of operations had never been reached. He also gave some details about the number of medical units and medical officers, and explained the more intimate working of the Clearing Station at the period when the war ceased.

Finally, he declared that preventive medicine had really done much more for the soldier than surgery. If typhoid had raged in the armies of the combatants as it had in the British troops in South Africa, the Great War would have ceased long since. In South Africa there were 73,633 cases with 10,144 deaths; in the present campaign there

had been 7,423 cases and 266 deaths. There had been, therefore, fewer cases in France than there were deaths in South Africa.

The lecture was illustrated by lantern slides showing the details of transport and clearing of the wounded.

Lieut.-General Sir Charles Burtchell, D.G.A.M.S., France, proposed a vote of thanks to General Wallace, and said that the history of the Casualty Clearing Station was intimately bound up with the development and progress of medical and scientific knowledge during the war. From the time these stations began to be used on modern methods, they were the centres of scientific interest in the war area. Criticism had been passed upon what people considered the exorbitant number of medical officers who were required in France. But in times of battle it had been said truly that it was impossible to have too many surgeons, and in non-battle times the surgeons must almost necessarily be too many. That was a point which critics in this country did not understand. It was imperative in war to keep large numbers of medical men standing by in case of emergency. He paid a tribute to the medical officers of the army and also to the non-commissioned officers and men and nursing sisters, to the Red Cross and the Order of St. John, and to the Medical Research Committee. Never previously had the medical profession such freedom of action and such general support as it had enjoyed during this war, and it had taken full advantage of its opportunities.

The vote of thanks to General Wallace was accorded with acclamation.

RECEPTIONS.

BY THE METROPOLITAN COUNTIES BRANCH.

On the evening of Tuesday, April 8th, a very successful reception was held at the historic Guildhall in the City of London, kindly lent for the purpose by the Lord Mayor. This entertainment, provided by the Metropolitan Counties Branch of the Association, gave an opportunity for many visitors to renew acquaintanceships broken by the war, or meet the womenfolk of friends made on active service. The guests were received in the great hall by Sir T. Clifford Allbutt, President of the British Medical Association, and Dr. M. G. Biggs, President of the Metropolitan Counties Branch. After this they were free to enjoy themselves according to their bent. Two concerts were given in the Council Chamber, while throughout the evening there were to be found in the Art Gallery what the Victorian poet described as "the dancers dancing in tune," the tunes being provided by the Royal Artillery String Band. For those of an antiquarian turn of mind various attractions had been arranged. Mr. G. Q. Roberts, secretary of St. Thomas's Hospital, gave two lectures on "Old London," with special reference to the development of the London hospitals; they were illustrated by lantern slides from old prints and maps. Dr. A. C. Dove took parties on a tour of inspection of the Guildhall, pointing out the many features of historical and artistic interest. On the dais in the great hall were to be seen collections of surgical instruments used by John Hunter, John Abernethy, and Lord Lister, and other specimens, lent by the Royal College of Surgeons of England and the medical school of St. Bartholomew's Hospital. The visitor who took up a position at this end of the great hall looked down on a kaleidoscopic scene, in which uniforms and gowns of various kinds played a considerable part. The whole evening was greatly enjoyed, and praise is due in particular to Dr. Reginald Morton for his successful organization of the entertainment, which formed an agreeable introduction to the serious business of the three following days.

BY THE ROYAL SOCIETY OF MEDICINE.

On Wednesday evening a reception was given to those attending the meeting by the Royal Society of Medicine. The guests were received in the library by the President,

Sir Humphry Rolleston, K.C.B., and Lady Rolleston. The programme included music by Mr. Frank Ivimey's string band, and an entertainment by the members of the Savage Club, under the direction of Mr. Charles Collette, in the Robert Barnes Hall. During the evening rare books and objects of interest were displayed in the library; these had been arranged by the honorary librarians, Dr. Raymond Crawford and Mr. W. G. Spencer. In the west lecture hall Dr. George C. Peachey gave an interesting demonstration on book plates of medical men, illustrated by lantern slides. Subsequently Dr. Louis Sambon gave a cinematographic demonstration of films lent by Dr. Comandon of Paris, showing Brownian movements of colloids, and various tropical haematozoa.

THE EXHIBITION OF DRUGS AND MEDICAL APPLIANCES.

AN exhibition of surgical instruments, hospital furniture, drugs, foods, sanitary appliances, publications, and other things likely to interest the medical visitor has been displayed at the Imperial College of Science in the Physics Examination Hall. Sixty-five stands were allotted, and a few of the exhibits have overflowed into a waiting hall outside. The full and interesting and up-to-date displays are a tribute to the resourcefulness of the manufacturers and the recuperative power of British industry, particularly in glassware and fine work in metal. In these narrow aisles the visitor is less aware of curtailment and restriction of output due to war conditions than of a creditable adaptability to new occasions and a striking out upon fresh enterprise. This is particularly the case in two directions at least in which the war has suggested new developments or even demanded them. One of these is in the designing of orthopaedic appliances and artificial limbs, and in the furniture and fittings of the hospital ward and operating theatre. The other is in the manufacture of equivalents for German synthetic preparations.

One of the most interesting features of the exhibition, indeed, is a display revealing the stages in the manufacture of kharsivan and neo-kharsivan, which replace salvarsan and neo-salvarsan, and that is only one of several examples of the kind. On another stand is to be seen, for instance, a specimen of chloralformamide, together with its parent substances, anhydrous chloral and formamide; and on yet another a bacteriological peptone to take the place of Witte's peptone. It must be said that the manufacturers have spared no pains to demonstrate to the visitor as far as may be possible not only the product but also the nature of the process by which it is made. The fine chemicals and alkaloids replacing those of enemy origin are particularly prominent.

The x-ray and electro-medical apparatus occupies a considerable amount of space in the exhibition, although it is only contributed this year by seven or eight firms. Among so much that is bulky the eye is first captured by the smallest exhibit of all. This is the small Coolidge x-ray tube, the American introduction, with a bulb only $3\frac{1}{2}$ in. in diameter. Beside it is another standard type Coolidge of twice the diameter. The x-ray couch has been greatly modified as a result of actual experience in the field, both as to giving easy and full adjustments in the examination and to protecting the operator. It is gratifying to note the increasing prominence given to stereoscopic x-ray work. A large proportion of the stands is devoted to medical publications, including, at Stand No. 29, the publications issued by the British Medical Association. The relative scarcity of war literature and the number of new editions of standard works are striking. A tempting stand calls attention to the brine baths of Droitwich, under the legend "Now the German Bads are taboo, the English spas will come into their own"; and elsewhere in the exhibition the praises of Malvern waters are sung, and from across the Channel is to be caught the sparkle of Vichy-Célestins. The proprietary foods, sanitary prepara-

tions, sterilized dressings, and laboratory equipment appear in abundance, but all these, together with such exhibits as those of oxygen apparatus (including the Haldane apparatus for therapeutic administration) must be left for the detailed review of the exhibition which will appear in a later issue.

SIR AUCKLAND GEDDES.

THE acceptance by Sir Auckland Geddes of the invitation to become Principal of the McGill University was formally announced by the publication on April 5th of letters which have passed between him and the Prime Minister. In thanking Mr. Lloyd George for the confidence reposed in him, Sir Auckland Geddes said that he would never forget how in the anxious days of last year the Prime Minister appeared to rely implicitly on the judgement and efficiency of the Ministry of National Service. "That that reliance was not misplaced," Sir Auckland Geddes continued, "was not due to me, but to the capable and devoted helpers who surrounded me. . . . The country has not yet realized what it owes to them, but some day I suppose the story will be told." Mr. Lloyd George, in his reply, cordially endorsed everything Sir Auckland Geddes had said in regard to the Ministry of National Service, and added that despite the difficulties it had encountered the department had won "the confidence not only of the Government but of the people of the country. Sir Auckland Geddes will for the present continue his duties as Minister of National Service and Reconstruction, and has undertaken also to discharge those of President of the Board of Trade during the indisposition of Sir Albert Stanley. It is understood that Sir Auckland Geddes will begin his new duties in Montreal next autumn; his connexion with the university has never been severed, though he has been on leave from his chair since 1914. He served in the South African war as a lieutenant in the Highland Light Infantry, receiving the Queen's medal with four clasps. He began duty in this war on the east coast of England, served in France in 1915 and 1916, and was promoted brevet lieutenant-colonel for gallant and distinguished conduct in the field. When, in August, 1917, it was decided that recruiting should be placed under civilian control Sir Auckland Geddes was appointed to be Minister of National Service; he received the K.C.B. and was elected to represent the Basingstoke Division of Hampshire in the House of Commons. For a short time last year he held the office of President of the Local Government Board in addition to that of Minister of National Service. When Dr. Addison was appointed to the former office after the general election Sir Auckland Geddes, while continuing as Minister of National Service, became also Minister of Reconstruction. He was one of Sir William Turner's pupils at Edinburgh, became demonstrator and afterwards assistant professor there, was next professor of anatomy at the Royal College of Surgeons in Ireland, and then accepted the chair of anatomy at McGill.

DISABLED PENSIONERS: TEMPORARY AND PERMANENT.

THE Minister of Pensions (Sir Laming Worthington-Evans) announces that it has been decided to decentralize the administrative work as far as possible. In thirteen regions a self-contained administrative unit will be set up, with a director and an advisory council. Among the divisions of the regional office will be a medical service branch, under a regional commissioner of medical service. The medical staff has been taken over from the Ministry of National Service. Sir L. Worthington-Evans stated last week that pensions had been granted to nearly 600,000 disabled men and to over 12,000 disabled officers; about 20,000 new awards were being made each week to men as they were demobilized, and more claims

were to be expected from men now in hospital. At the time of the armistice there were 550,000 men in hospital at home and abroad; this number had been reduced to about 200,000,* many admitted for merely temporary ailments. Many, however, would become pensioners, and he estimated that there would be at least 700,000 temporary pensioners; of these an unknown number would become entitled to permanent pensions. The Ministry had arranged to take over the orthopaedic hospitals from the army and to establish out-patient clinics in surrounding towns and districts, under the direction of the surgeons attached to these hospitals; similarly, treatment would be provided in hospitals and out-patient clinics for cases of nervous disease. It was hoped in this way to make a resurvey of cases which would benefit from treatment by orthopaedic and nerve specialists and to give a further chance of treatment to those who had, for one reason or another, discontinued it. The nature of the problem was realized fully by his chief medical adviser and his assistants, and adequate arrangements were being made. It was estimated that the classes falling within the terms of the Pensions Warrant with regard to training numbered about 350,000 men; not all desired to receive or were qualified to receive training, but there would be, it was expected, a large number for whom training ought to be provided. The men who had lost a limb numbered 24,000, and those who had received some injury either to a leg or an arm not necessitating amputation 128,000; it was probable that a large number of these would not be able to carry on the same manual labour as before. The neurasthenics numbered 36,000, and many of them would require outdoor employment, as would also many of the 60,000 sufferers from chest complaints, including tuberculosis. The number of cases of rheumatism was 39,000; some had been cured, but others would require to find indoor work. Of the 54,000 men suffering from heart trouble many might have to change their previous occupation if it involved heavy physical strain. Many of the 10,000 men suffering from deafness would be unfit to go back to their previous employment. At St. Dunstan's and at Newington House, Edinburgh, 1,435 blind men had received training. Of the 350,000 men some had been cured, but a large number were still under treatment and not yet ready for training; many were capable of resuming their previous occupation, but many more had been attracted by high wages to occupations which might prove to be temporary. At present the Ministry of Pensions had trained, or had in training, 24,000 men. Arrangements had been made through local war pensions committees, which had 600 schemes, and instruction had been given at technical institutions, agricultural colleges, farms, and market gardens. In all the main industries trade advisory committees had been formed to advise the local committees, but new schemes and a great extension of the training facilities were required. It had been decided by the Cabinet that industrial training should be placed under the Ministry of Labour, and in future the Ministry of Pensions would confine itself to training during the time that a disabled man still required medical care and attention. For this purpose it would take over gradually many of the army hospitals, and in some a start had already been made in giving the men preliminary training while in hospital. It was proposed to set up six or eight convalescent centres into which men could be drafted from hospital; in each centre, which would be under the charge of medical men, small training shops covering a variety of trades would be set up, where the disabled man could make a choice of the class of training he might desire ultimately to undertake. The centres would be opened gradually as experience showed the need for them; a start was being made by the Hayes Filling Factory in Middlesex, which it was hoped would be in full working order within a few months.

SIR WILLIAM CROOKES.

SIR WILLIAM CROOKES, who died on April 4th in his 87th year, early won high distinction as a chemist, but it was chiefly in the borderland of chemistry and physics that his great work was done; it was, indeed, through the spectroscope, then a new instrument of research, that he was led in 1861 to the discovery of a new element, thallium. In the course of determining the atomic weight of this new metal he undertook experiments which aroused his interest in certain phenomena to be observed in a vacuum, and so in the study of the phosphorescent glow produced in a high vacuum tube when the current from an induction coil was passed through it. Crookes suggested that the facts might be accounted for on the hypothesis that from the cathode were expelled streams of particles which, travelling in straight lines at great speed, bombarded the glass side of the tube and so produced the phosphorescence. The glow could be made to change its position by a magnet, and Crookes explained this by the further hypothesis that the particles carried a charge of negative electricity. Through the work of Sir J. J. Thomson and Dr. Johnstone Stoney this hypothesis grew into the electronic theory of matter which has so profoundly influenced the thoughts of physicists in this generation. Lennard showed that certain rays could pass out of the tube through a thin plate of aluminium, and in 1895 Roentgen, a Swiss trained physicist working in Bavaria, made the accidental observation that rays passing out of the tube affected a covered photographic plate. The whole story is a good example of the way in which a scientific inquiry which may seem to have no possible relation either with practical affairs, or broad and fertile theory, may develop in both directions. Crookes's troubles in weighing thallium led by a side path to the contrivance he named the radiometer, which most people have seen. It consists of a set of light discs, black on one side and polished on the other, suspended on a vertical axis in a partial vacuum; the vanes are in almost constant motion owing, as was once thought, to the pressure of light, but now explained as due to stresses. To this succeeded the vacuum glow tube, and to that the x-ray tube which is to-day a common implement of diagnosis in medicine and surgery. In 1909 Sir William Crookes undertook experiments for the Glass Workers Cataract Committee of the Royal Society, with a view to preparing special glasses for the use of furnace workers. He succeeded in preparing suitable glasses by the incorporation of various metals; among these cerium gave a colourless glass with a high power of absorbing ultra-violet rays. To obviate the effects of glare it was, however, found desirable that the glass should be tinted, and glasses of pale green, yellow, and neutral tint were prepared, so that a choice of tints was available to suit individual requirements. For some reason or other full commercial use has not yet been made of this invention, but possibly with the cessation of the war more will be done to render the goggles made from glass of this kind less costly. Another matter related to medicine in which Sir William Crookes took an interest was the use of colloidal remedies in medicine. Much of the work was carried on by his son, the late Mr. Henry Crookes, under the general direction of his father. Crookes was also the first to inform the public of the possibility of obtaining nitrogen for manurial purposes from the air. The method has been largely used in Germany during the war for the production of explosive substances also. Sir William Crookes was the founder in 1859 of the *Chemical News*, and continued to own and edit it to his death.

RED CROSS AMBULANCES FOR HOME USE.

The Joint War Committee of the British Red Cross Society and the Order of St. John expects shortly to receive from abroad 500 of its motor ambulances in good running order, and has devised a scheme for their use in

civil life. The scheme has been worked out by a Home Service Ambulance Committee, and a letter has been addressed to the county directors asking them to organize the work in each county. It is intended to satisfy the needs of rural districts before considering applications from great towns. The county directors will decide in what towns or villages in their area ambulances should be stationed, the idea being that they should not be, as a rule, more than thirty miles apart. The ambulances will not be attached to hospitals, as it is intended that they should be freely available for the removal of sick or injured persons to the institutions most suitable for their treatment. The ambulance will be kept in a local garage, the managers of which will be responsible for keeping it in going order, under the control of the county director, who, it is suggested, should set up a small committee to assist him in local supervision. It is suggested that a charge should be made for the use of an ambulance, and although this must vary in different counties, a fee of 1s. 3d. a mile is suggested, the county director (or the county committee working with him) having power to remit the charge in cases of emergency, or when the circumstances of the patient make it desirable. The ambulances are fitted with the standard War Office type body, and are capable of taking four stretcher cases or eight sitting cases. Applications, which should be addressed to Mr. F. C. Davies, 83, Pall Mall, London, S.W.1, will be dealt with in the order of receipt. They will be satisfied as far as possible, but this will depend on the rate at which the ambulance cars arrive from overseas. The present scheme is to be in force for twelve months, during which it is expected that much valuable practical information will be acquired by the committee. From communications we have received from medical practitioners in rural districts since the scheme was mooted we have no doubt that it meets a real want, and we have confidence that through the existing organizations of the British Red Cross Society and the Order of St. John any difficulties which may arise in finding drivers will be overcome. We would advise doctors in rural districts to get into communication with the county director, and we shall be glad to receive any general suggestions on matters of principle.

Among the special honours announced on April 7th, the day on which the Grand Fleet was dispersed and the flag of the Commander-in-Chief hauled down, was the K.C.M.G. conferred on Surgeon Captain R. Hill, R.N., C.B., C.V.O., Principal Medical Officer of the Fleet through the years of its watch and ward in the North Sea.

Medical Notes in Parliament.

Dogs' Protection Bill.

THE Dogs' Protection Bill, which was introduced by Sir Frederick Banbury, came up in the House of Commons on April 4th as amended by Standing Committee on the previous day. The first clause read:

Notwithstanding anything in the Cruelty to Animals Act 1876 (hereinafter referred to as "the principal Act"), it shall be unlawful to perform any experiment of a nature calculated to give pain or disease to any dog for any purpose whatsoever, either with or without anaesthetics, and no person or place shall be licensed for the purpose of performing any such experiments.

Sir Hamar Greenwood (Under Secretary for the Home Office) moved to insert after the word "unlawful" the words "except as hereinafter provided." He explained that this was a drafting amendment to bring the bill into line with the governing Act, the Cruelty to Animals Act, which governed the whole question of experiments on animals.

Sir Frederick Banbury raised a point of order as to whether Sir Hamar Greenwood contemplated submitting sequentially on this amendment amendments which had been ruled out of order in Committee upstairs. The

Deputy Speaker said that the ruling of the Committee would govern the proceedings in the House.

Sir Hamar Greenwood then read the amendment which he proposed to move after the preliminary amendment. He would propose that, after the word "anaesthetics" in the clause, the remainder of the clause should be left out, and the following words inserted instead:

except on such certificate being given as is mentioned in the principal Act, stating in addition to the statements required by section 3 of that Act, that for reasons specified the object of the experiments would necessarily be frustrated unless it is performed on a dog and that no other animal is available for such experiments.

Sir Frederick Banbury submitted that that amendment would be out of order as going beyond the scope of the title of the bill. It was, he said, the same amendment as was moved in Committee and, after very careful consideration, ruled out of order by the Chairman. The title of the bill was "A Bill to prevent the Vivisection of Dogs." It was not a bill to alter the present law by substituting a different form of certificate from the form of certificate required now. In Committee the Government realized this, and proposed to put down amendments to alter the title. They proposed to leave out the word "prevention" and to insert the words "impose further restrictions on," so that the title would read "A Bill to impose further restrictions on the Vivisection of Dogs." Lieut.-Colonel Guinness urged that prevention did not necessarily mean complete prevention. According to the precedent which applied in such cases, prevention must be read as limited prevention, and therefore he submitted that so long as this Act provided in any shape or form for prevention, it would still be within the scope of the short title. The Deputy Speaker said he had had an opportunity of considering the amendment put forward by Lieut.-Colonel Guinness, and his ruling was that it came within the scope of the bill, and that accordingly it was in order.

The preliminary amendment having been carried, Sir Hamar Greenwood moved the sequential amendment as above.

Sir F. Banbury said he could not accept the amendment. In his opinion the Home Office did not take sufficient care in certificates. At the present moment any one could experiment on a dog if he obtained a licence from the Home Office and two certificates afterwards. All that was now proposed was to add another licence or certificate.

Sir Hamar Greenwood, interposing, said that Sir F. Banbury ought to be accurate; there was a licence and a certificate, and a subsequent certificate and a third. At this point the debate was automatically adjourned, it being 5 o'clock.

Sir Frederick Banbury has put down the bill for further consideration on a Friday in May when the Labour Party's Industrial Trades Bill is the first order. Sir Frederick's bill is the second order.

Ministry of Health: Scotland.

SCOTTISH BOARD OF HEALTH BILL THROUGH STANDING COMMITTEE.

The Scottish Board of Health Bill has passed the Standing Committee on Scottish Bills over which Mr. Rendall presided.

Proposal for a Separate Ministry Rejected.

Mr. Wm. Graham (Lab., Edinburgh Central) moved an amendment to establish a separate Ministry of Health for Scotland. The Scottish Office was grossly overloaded and there must be some decentralization.

Dr. Murray (Ind., Western Isles) said it was feared in Scotland that the bill might merely result in a change of name. England had found it necessary to have a separate Minister. Scotland, which had always been in the forefront of social legislation, should not lag behind in this. Scotland had a separate system of law, and he trusted the representatives of the law would apply to medical matters the same principle they applied to legal.

Mr. Mackinder (Glasgow, Camlachie) said that specialization in the minister who controlled the administration of health in Scotland was needed. There should be two under secretaries, one of whom ought to be in Edinburgh, and be concerned only with health. It was the best way by which 400 miles between London and Scotland should be annihilated.

Mr. J. Johnstone (Renfrewshire, E.) spoke in a similar strain. Mr. C. B. Murray (Edinburgh, W.) said that the demand for a separate minister in Scotland had been widespread, but lately there had been a great change in public opinion. The power to the Secretary for Scotland to appoint an under secretary should be mandatory, and the under secretary should be for health administration only.

Mr. Munro repudiated the suggestion that Scotland was behind England in administration, but it was necessary to ask whether it was there and then desirable to have a separate Minister. When Scottish Home Rule was an accomplished fact there would be separate ministers for all the Government services in Scotland. But with an imperial Parliament and the Secretary for Scotland spending most of his time in London, was it discreet to remove from his jurisdiction altogether all health matters? Scotland might be sure that it would not get two ministers in the Cabinet, and in Cabinet discussions the Minister of Health would have to get the Secretary for Scotland to act for him. He would not like to be in the position of a gramophone reproducing his master's voice. It was not the best foundation on which to build a strong structure. He could not accept this amendment.

Sir H. Dalziel objected that at present any minister who was not in the Cabinet but whose department was affected by any matter was called before the Cabinet and allowed to state his case before a decision was reached. The amendment was a step towards Home Rule.

On a division the amendment was lost by 28 votes to 12.

Proposed Suppression of Medical Research.

A motion to prevent "vivisection" in research was opposed by the Secretary for Scotland and lost.

Parliamentary Under Secretary for Health.

The Secretary for Scotland was "reluctantly" compelled to accept an amendment making definitive the appointment of a parliamentary under secretary "for health." Thus there will be a new Scottish parliamentary under secretary specifically for health.

Representation of Labour.

A determined effort was made by the Labour members to secure the appointment of a representative of Labour on the Board.

Mr. Munro reminded them that the Board was an amalgamation of two existing boards, and that the members would be civil servants who would represent no interest but public health. While he could not accept this amendment, he promised that when it came to the appointment of the consultative committees to make it clear that on these Labour should have a voice. The amendment was defeated by 24 votes to 13.

Medical Inspection of School Children.

An amendment seeking to transfer the medical inspection of school children to the Board forthwith was put forward by Sir J. Hope, who reminded the Committee that a universal demand had compelled this to be done in the English bill.

Mr. Munro thought it premature, as these powers were only recently conferred by the Education Act on the local education authorities in Scotland. Such transfer would only affect the central authorities, not the local authorities. It would be a retrograde step to take this matter out of the hands of the county education authority and hand it over to a district committee or isolated burgh.

Mr. Munro accepted an amendment, moved by Sir John Hope, to provide that from time to time, by an Order in Council, enactments relating to lunacy and mental deficiency might be transferred to the Health Ministry.

The bill passed through Committee.

Ministry of Health Bill (England, Wales, and Ireland).

THROUGH THE COMMONS.

The Ministry of Health Bill was considered on report, and read a third time in the Commons on April 9th.

The only important amendment on report was one submitted by Dr. Addison consequent on the decision in Standing Committee for the transfer, from the Education Board to the Health Ministry, of the powers for the medical inspection of children. It will be recalled that Dr. Addison objected to the immediate transfer, saying that there were practical difficulties to this addition to the work of the Ministry at first. He now proposed that this transfer should be qualified as under:

Provided that, for the purpose of facilitating the effective exercise and performance of these powers and duties, the Minister may make arrangements with the Board of Education respecting the submission and approval of schemes of local education authorities and the payment of grants to local education authorities, so far as such schemes and payment relate to, or are in respect of, medical inspection and treatment; and the powers and duties of the Minister may under any such arrangements be exercised and performed by the Board on his behalf and with his authority under such conditions as he may think fit.

The amendment was adopted.

MEETING OF THE PROFESSION IN EDINBURGH AND LEITH.

At a largely attended meeting of the medical profession in Edinburgh and Leith, attended both by members of the British Medical Association and non-members, to consider the Scottish Board of Health Bill, the following resolutions were unanimously adopted:

That even if it involves an addition to the membership of the Board, there should be two members representing the clinical side of medicine.

Having now considered the bill of the Scottish Board of Health, this meeting is strengthened in their conviction of the necessity for the establishment of a standing medical consultative council, the members of which should be elected directly by the profession, and should have powers to discuss and make representations to the Board on any matters which in their opinion affects directly or indirectly the health of the community, and this council should have power to meet jointly with any council, medical or lay, as occasion arises. This council should consist of at least eleven members, one of whom should be a registered dentist with a medical qualification.

Tuberculous Soldiers.—In a written reply to Sir Watson Cheyne, Major Astor stated, on April 3rd, that the number of men discharged from the army since August 4th, 1914, on account of pulmonary tuberculosis could not be precisely determined from the records of the Pensions Ministry, but it was estimated at 25,000. He was unable to say how many of these were considered suitable for institutional treatment or did actually undergo such treatment. The number undergoing residential treatment in sanatoriums and hospitals on March 1st, 1919, was approximately 3,150, and the number on the waiting list was 470.

Women Doctors and Nurses in Military Employment.—In the second reading debate on April 4th on the Women's Emancipation Bill, introduced by Mr. Adamson (the Labour leader) to remove disabilities still imposed upon women, Captain Elliot made a contribution which attracted attention for its freshness, originality and vigour. The bill proposes that no woman shall be disqualified by sex from civil or judicial office. Captain Elliot, in the course of his speech, regretted that the measure did not deal also with the disqualification of women from holding military rank. His opinion was that women doctors and nurses serving in the army should be allowed commissions. The bill was read a second time.

Medical Treatment of School Children in Ireland.—The Attorney-General for Ireland stated on April 7th that the vote for the medical inspection of national school children and the services auxiliary thereto in Ireland was first made in 1912. The amount was £7,500, and in 1912-13 the expenditure £263. In 1913-14 £5,000 was provided and £498 expended; in 1915-16 £2,000 was provided and £548 expended; in 1917-18 £1,030 was provided and £647 expended. In 1918-19 the provision was £1,500 and the expenditure £498.

The Demobilization of Army Medical Officers.—Mr. Churchill stated, in reply to Lieut.-Colonel Weigall, on April 8th, that the total numbers of medical officers released from the army during the months of January, February, and March were 403, 1,071, and 1,787 respectively.

Scotland.

HONORARY DEGREES AT EDINBURGH.

The University of Edinburgh intends to confer the honorary degree of LL.D. upon Emeritus Professor Sir Thomas Fraser, F.R.S., of Edinburgh, Major-General Sir W. G. Macpherson, K.C.M.G., A.M.S., Professor Rutherford Morison, F.R.C.S., of Newcastle, Professor D. Noël Paton, F.R.S., of Glasgow, and Brigadier-General A. E. Ross, C.B., Director Canadian Army Medical Service, France. It will confer the same degree on Mr. Wilson, President of the United States, on Cardinal Mercier, Archbishop of Malines, and on Admiral Sir David Beatty and Field Marshal Sir Douglas Haig.

SIR THOMAS R. FRASER.

Sir Thomas R. Fraser, Emeritus Professor of Materia Medica in the University of Edinburgh, in addition to the Honorary LL.D. from his Alma Mater, is to be honoured by having his portrait presented to him by the colleagues and students who during the forty-one years of his occupancy of the chair have acknowledged the inspiration of

his teaching. In a letter signed by Sir J. Alfred Ewing, the Principal of the University, by Sir Robert W. Philip, the President of the Royal College of Physicians, and Dr. McKenzie Johnston, the President of the Royal College of Surgeons, the intention of making the presentation has been brought before many of Sir Thomas's former students and already a number of subscriptions have been intimated. Since others, however, may wish to join in this expression of regard, Professor Hurvey Littlejohn has agreed to act as honorary treasurer, and to him contributions may be addressed at 11, Rutland Street, Edinburgh.

Correspondence.

THE NAVAL MEDICAL SERVICE.

SIR,—In the JOURNAL of April 5th Acting Surgeon Commander W. K. Wills, R.N.V.R., makes the following statement in a letter entitled "The Naval Medical Service": "During the influenza period an Admiralty weekly order arrived stating that an anti-influenza vaccine had been prepared, and would be available shortly, and directing that medical officers of ships should ask for volunteers for the prophylactic treatment. *No details were forwarded to principal medical officers of ships from the medical director-general's office, nor from the laboratory as to the composition of this vaccine, nor of the anticipated after-effects.*"

I am desired by the Medical Director-General to say that the latter part of this statement (here in italics) is incorrect. Full details as to the composition of the prophylactic influenza vaccine, and directions for its use, accompanied every bottle of the vaccine issued to medical officers of ships and of the Royal Navy in general. These instructions as to the composition, etc., of the vaccine (copy enclosed) are based on the recommendations of a conference held at the War Office on October 14th, 1918 (JOURNAL, October 26th, 1918, p. 470).—I am, etc.,

W. L. MARTIN,

Surgeon Commander, R.N.,

Assistant to Medical Director-General.

London, W., April 7th.

Instructions Issued with All Supplies of Navy Prophylactic Influenza Vaccine.

The following is the composition of the Naval prophylactic vaccine which is being supplied to ships and dépôts as required, together with the instructions given for its use.

	First dose.	Second dose.
<i>B. influenzae</i> (3-5 strains) ...	30 millions	60 millions.
<i>Streptococcus pyogenes</i> (3-5 strains) 40 ...	80	80
<i>Pneumococci</i> (3 strains) ...	100	200

The dosage was settled at a meeting of bacteriologists called by the Medical Director-General of the Army at the War Office, and under the presidency of Sir W. J. Leishman, K.C.M.G., C.B. In the case of persons under 16 years of age, half the above dose should be given.

The vaccine was to be polyvalent for each organism, and these were to be standardized by Dr. Douglas at St. Mary's Hospital before being passed on to the R.N. College, Greenwich, and the R.A.M. College, Millbank, when the vaccine is to be made in bulk.

The vaccine, if given as directed, is not likely to give rise to anything but slight inconvenience, and it is believed that it will give possible protection from influenza and most certainly will diminish the danger of the secondary dangerous sequelae.

Full records should be kept of results, and all demands must be forwarded to Greenwich stating the number of men for whom vaccine is required, which should always be called "N.P.I.V." (Naval Prophylactic Influenza Vaccine, not serum).

Directions for Use.

Dosage.—Persons over 16 years of age: First dose, 0.5 c.cm.; second dose, 1.0 c.cm. For children 16 years and under half the above dose should be given. Interval between doses, eight to ten days.

Period of twenty-four hours' light duty should be given after inoculations. Administration of vaccine should not be carried out in those suffering from pyrexia or acute catarrhal symptoms from any cause.

It is requested that statistics be kept dealing with the following points:

1. Reactions following inoculations.
2. Incidence of disease amongst those inoculated and those uninoculated.
3. If influenza occurs in those inoculated, whether it started after the first or second inoculation.
4. Severity of disease in those inoculated compared with those uninoculated.

(Sgd.) W. H. NORMAN,
Medical Director-General.

November 2nd, 1918.

NURSES' REGISTRATION BILLS.

SIR,—I trust that you will allow me, as honorary medical secretary of the Central Committee for the State Registration of Nurses, to offer a few observations upon the annotation headed "Nurses' Registration Bills" that appears in your issue of April 5th. In the first place, the scope of the Central Committee's bill is not limited merely to State registration, as is stated in the college memorandum quoted in the annotation. The bill deals with the whole subject of the control and standardization of the education of nurses, and in such a manner and to such an extent as will, in the opinion of those well qualified to judge, lead to a great improvement in the economic position of nurses generally.

Secondly, the financial basis of the Central Committee's bill is not inadequate. The number of trained nurses who are already upon the registers of the large nurses' societies which are supporting the Central Committee's bill (the Royal British Nurses' Association and others) leads the promoters of that bill to anticipate with confidence that the number of nurses who will register during the period of grace (two years) will be amply large enough to provide by their registration fees for the financial security of the Central Committee's scheme.

At a modest computation this number would be 50,000 for the first two years. After that period a sufficient yearly fund would be furnished by the examination and registration fees of new nurses. But the fees need not be high. The college has already appealed to the charitable for funds to carry out its scheme, and will doubtless continue to do so. But nurses as a body are averse from being dependent upon charity for what they can pay for themselves; and if it should come to pass that the fees paid by the nurses are not sufficient (an event the Central Committee does not for a moment anticipate), then the nurses would rather appeal to the State for a grant than to the charitable for alms.

Thirdly, one of the chief objects of the college bill is to establish the college by Act of Parliament. The Central Committee is of the opinion that while this aim may be quite praiseworthy, it ought not to be accomplished in and by an Act. They fear that by this incorporation of the college, or of any association of private persons, the General Nursing Council which the Act will set up will not be the independent body the nurses desire and should have.

In the fourth place, the difficulties of reconciling the two bills have not been due to conflict of personality but to differences on important questions of principle.

Lastly, I would point out that delegates of the British Medical Association have taken an active part in drafting the Central Committee's bill; and at a meeting of the Central Committee held a few months ago supported the resolution which the committee then passed, after a careful consideration of both bills, that the bill of the Central Committee was the better of the two.—I am, etc.,

E. W. GOODALL,

Grove Military Hospital,
April 7th.

Honorary Medical Secretary, Central
Committee for the State Registration
of Nurses.

THE MEDICAL PARLIAMENTARY COMMITTEE'S CONFERENCE.

SIR,—The Medical Parliamentary Committee appointed in October last, on the motion of Dr. Addison, to ensure that the considered views of the medical profession should be voiced by representative medical men in the House of Commons, has arranged to hold a conference to discuss the best method of constituting a permanent Medical Parliamentary Committee. The conference, to which all bodies or associations interested in health questions are being invited to send representatives, will be held under the chairmanship of Sir W. Watson Cheyne, Bt., M.P., at the Central Hall, Westminster, on Friday, May 2nd, at 3 p.m. If any medical organization with the objects indicated has not received a formal invitation, we shall be obliged if its secretary will communicate with us.—We are, etc.,

ARTHUR LATHAM,
CHAS. BUTTAR,

Honorary Secretaries of the Medical
Parliamentary Committee.

20, Hanover Square, W., April 7th.

Obituary.

SIR JAMES MACKENZIE DAVIDSON, M.B., C.M.ABERD.,
Consulting Surgeon X-ray Department, Moorfields Eye Hospital,
and Charing Cross Hospital.

THE death, on April 2nd, from heart failure, of Sir James Mackenzie Davidson in his 62nd year, will cause very great regret to all who knew him, and deprives the department of medicine to which he had devoted himself for over twenty years of one of its pioneers. He published in the *Archives of the Roentgen Ray*, as early as July, 1897, a radiograph of a bladder stone, and hinted at the importance of the x-ray diagnosis of kidney stones. From that date onwards he was a frequent contributor to both medical and scientific journals of papers, all of which indicated distinct advances in both method and diagnosis. One of his last publications was a book entitled *Localization by X Rays and Stereoscopy*, a subject on which he was an authority.

James Mackenzie Davidson's father had settled at Estancia Santo Domingo, Buenos Aires, and the son was born there and received his early education at the Scottish School, Buenos Aires. He studied medicine in Edinburgh, London, and Aberdeen, and graduated M.B., C.M. at the University of Aberdeen in 1882; that same year he started, along with another young doctor, an eye clinic in the east end of the city. He became assistant to the professor of surgery, Sir Alexander Ogston, and in the class of practical surgery gained experience in teaching which served him well in later years in his own special branch. In 1886, on the death of Professor Dyce Davidson, he succeeded him as ophthalmic surgeon to the Aberdeen Royal Infirmary, and filled this office till 1895. He was also ophthalmic surgeon to the Royal Hospital for Sick Children, and on his resignation from the infirmary staff in 1895 he amplified and elaborated the Eye Institute, and had it moved from the Dispensary Buildings to new quarters in King Street, where it still exists.

All this time Mackenzie Davidson was lecturer in ophthalmology in the University of Aberdeen, and continued to attract large numbers of students to his class and to his out-patients. He was a born teacher, and took a keen personal interest in all his students, while his relations with the rest of the profession were always most cordial. Not a few of his pupils have since distinguished themselves in ophthalmic work. With his patients he was very popular, being kind and courteous to a degree, and very often unostentatiously gave help to needy cases. He possessed an even temper, was deliberate in all his movements, and took infinite pains with his work, while his training under Ogston made him early take up the anti-septic methods and adapt and apply them to his eye work. He was careful, painstaking, and orthodox in his operating, and achieved renown far and wide, his practice being a large and increasing one.

Mackenzie Davidson had a natural bent towards physics, and spent much of his spare time while in Aberdeen carrying out physical experiments and designing apparatus, mostly in connexion with light and electricity, while he gave freely towards the education of the public by popular lectures, which were lavishly illustrated by costly experiments, and were always deeply appreciated by large audiences.

Immediately on the publication of Roentgen's paper early in 1896 Davidson, by one of those flashes of genius which occur sometimes to light the path to great eminence, intuitively recognized the importance of the discovery and its possibilities medically and surgically. With some difficulty he obtained a 10-inch coil and two Crookes's tubes, with which he immediately began to experiment, so that he was probably the first in Scotland to produce photographs by the new rays. He continued his trials and experiments in Aberdeen till 1897, when he removed to London. Aberdeen was very sorry to part with him, but it was realized at the time that he was destined to take a very high and important place in the then infant science of radiography, and there is no doubt that it is a fortunate thing for British radiography that he took up the subject when he did, and left Aberdeen for London, where he has continued to advance the science ever since. His contributions to the subject have been such that Aberdeen City and Aberdeen University are justifiably proud of having had him as a citizen and as an alumnus.

He had great inventive skill, and to the end of his life was interested in improving old, and in devising new, x-ray apparatus. In 1900 he described at the Röntgen Society a new rotary mercury break, afterwards known as the Mackenzie Davidson break, which came into almost universal use. At the same meeting he described for the first time a stereoscopic fluoroscope, and drew attention to the future possibilities of this as a method of examination. As early as February, 1898, he described to the Röntgen Society his "cross thread localizer." This was the first instrument which allowed of the exact localization of foreign bodies, and it laid down the principles of the triangulation method, on which nearly all the later methods are based. As applied to eye work the accuracy of localization is little short of marvellous, and Davidson's work on this subject has resulted in the saving of sight in innumerable cases. Perhaps that part of x-ray work which interested him the most was the stereoscopic method, and so great was his belief in its advantages, that almost all his examinations were made by means of stereoscopic plates. In the very early days he designed an x-ray couch, especially for use with the thread localizer, and one, the last of his inventions, was another localizing table, in which the tube underneath worked synchronously with the screen above; this table was designed especially for war work. Apart from x-ray work, he was one of the earliest workers with radium, and it was he who first pointed out that certain forms of x-ray dermatitis were benefited by radium treatment.

The telephone probe for the localization of metallic foreign bodies was another instrument which attracted his attention. He had devised an improved appliance while still in Aberdeen, and tested it in the Royal Infirmary there. Afterwards he still further perfected it, and, like his localization method, it was used both in the South African war and during the European war of 1914-18. In 1916 he became honorary consulting radiologist to the military hospitals of the London districts, although he did not receive a commission. He took to this work with his habitual keenness, and in his rounds of the x-ray departments scrutinized every detail, advising, encouraging, and instructing.

Mackenzie Davidson was consulting surgeon to the x-ray department of the Royal London Ophthalmic Hospital, Moorfields, and of Charing Cross Hospital; he was president of the Röntgen Society of London in 1912-13, and of the Radiology Section of the International Congress of Medicine in London in 1913. He was also an honorary member of the American Roentgen Ray Society. The x rays took physical toll of him, and after suffering for some years from x-ray dermatitis he had to submit his right hand to more than one operation; but he never lost heart, and continued the same eager ingenious investigator and inventor that he had always been.

He married in 1886 the daughter of Mr. William Henderson of Aberdeen, and to Lady Davidson, to his son and daughter, we venture to extend the sympathy of the medical profession.

Dr. Thurstan Holland, one of his successors in the chair of the Röntgen Society, writes: "Apart from his valuable and original work he will be missed by all of us interested in radiology. To my mind one of his outstanding characteristics was his keenness, and his interest never faltered right up to the end. Further, he was a man who always welcomed any one interested in x-ray work, and he was always ready and willing to show his methods and demonstrate his instruments, etc., to fellow workers. He is a very great loss to British radiology."

WILLIAM ALLEN STURGE, M.V.O., M.D.LOND., F.R.C.P.
In Dr. Allen Sturge, who passed away on March 27th after several years of cardiac instability and poor health, we have lost an accomplished physician and a distinguished archaeologist.

He came of a fine Quaker stock on both sides. He was born at Bristol in 1850, and began his professional studies at the Bristol Medical School, and continued them at University College Hospital, London, where he soon made his mark and gained the warm regard of his teachers and of his fellow students. He was a close and accurate observer, keen in reasoning and original in speculation.

After holding the post of physician's assistant he became a resident officer and subsequently registrar at the National

Hospital for Paralysis and Epilepsy. There he laid the foundations of a wide and thoughtful survey of nervous diseases. Having taken his M.D. at the University of London, he followed up his studies in nervous diseases by a lengthened stay in Paris in 1876. That was a time when Charcot, like a magnet, was attracting neurologists young and old to his clinic at the Salpêtrière. But Sturge did not limit his studies to neurology; he worked at general pathology and medicine, and followed closely Fournier's practice at the St. Louis. Both Charcot and Fournier bore generous testimony in after years to Sturge's critical acumen and originality.

When in 1877 he returned to London he was appointed physician and pathologist to the Royal Free Hospital, and one of the lecturers to the Women's Medical School. His strong liberal sentiments made him an early and warm supporter of women's medical education. He was married to a talented lady doctor—Miss Emily Bovell—and they started in practice in Wimpole Street. There seemed a distinguished career opening for Sturge as a neurologist, a general physician, and a clinical teacher. He had the gift of fluent and luminous exposition, and was eagerly listened to, not only by his students, but by the members of the London medical societies. Unfortunately there only remain four of his medical papers available. Of these, in every way the most important and characteristic is one in the fifth volume of the *Proceedings* of the Medical Society of London, p. 357, on the study of muscular atrophy as an aid to the physiological investigation of the spinal cord. In this paper there are some original clinical observations of considerable interest, but there are also very lucid and discriminating statements on the physiological grouping of muscular atrophies and their diagnostic importance which are valuable still as sound and helpful generalizations.

His three papers in the twelfth and fourteenth volumes of the Clinical Society's *Transactions*, on a case of erythromelalgia, on a case of spondylitis, and on nerve stretching are good examples of Sturge's gift of not only narrating the salient features of any case, but of setting forth its general bearing. Sturge was exceedingly humane. From his studentship onwards he took the deepest interest in the welfare of his patients. He never spared his efforts, especially for poor chronic nervous cases, to make the best of their condition, and he was so well read and wide in his intellectual sympathies that it was no wonder that many educated men and women found in him a tower of strength, especially in conditions of overstrain. But in 1880 his wife's health began seriously to flag, and he came to the conclusion that for her sake he ought to seek a milder climate. He determined to settle in Nice, and he made it his home for twenty-seven years during the late autumn, winter, and spring months. By degrees he gained one of the best professional positions on the Riviera, and he secured the esteem of his English and French brethren and of the municipal authorities as well as the confidence of residents and visitors. The success of Queen Victoria's four spring holidays at Cimiez was in no slight degree due to the care and forethought which Sturge gave to securing the safety and the amenities of her residence. He had a bad attack of rheumatic fever in 1894 and another in 1899. In 1907 he determined to relinquish practice and return to England.

He had given considerable attention in his holidays to early Greek art, and had acquired a valuable collection of Etruscan vases; but for some years his summer leisure had been largely devoted to prehistoric archaeology. He gradually collected large and important groups of palaeolithic implements, and when he settled in England he chose his home at Icklingham Hall, Suffolk, in the very centre of this special field of archaeological research. He was enabled during the twelve years of his residence there to create the finest private museum in the world of flint implements, because his untrifling local investigations and findings supplemented the very varied and extensive collections which he had previously acquired. His aim was always to make a minute study not only of the human chippings but of glacial and other markings on his flints—and of their patination, and he made the most careful note of their provenance. His study of detail was combined with much reflection and investigation of cognate problems as to antiquity and altered physical conditions.

Sturge stimulated his fellow-workers by upgrudging advice and demonstrations. He was one of the founders and the first president of the Society of Prehistoric Archaeology of East Anglia, to the *Transactions* of which he contributed several papers, and with rare generosity he bequeathed his splendid educational collection of more than 100,000 pieces to the nation.

Sturge married for his second wife, in 1886, the daughter of Mr. A. C. Sherriff, M.P. for Worcester. She was his devoted fellow-worker in his archaeological and many other activities, and she survives him. He left no children to carry on his name, but he will live in the memory of his friends as an inspiring personality and a generous soul, and his wide outlook and passionate love of knowledge will never be forgotten. THOMAS BARLOW.

EDWARD LIVEING, M.D.CANTAB., F.R.C.P.,
Emeritus Registrar, Royal College of Physicians.

By the death of Dr. Edward Liveing, which occurred on April 2nd in his 88th year, the medical profession loses one of its oldest members. He was born at Nayland in Suffolk in 1832, the second son of Mr. Edward Liveing, a medical practitioner who had long been settled in that district. After obtaining his preliminary education at King's College, London, he began to study medicine at King's College Hospital, and obtained the diploma of M.R.C.S. in 1854. After this he entered at Caius College, and in 1858 graduated in the mathematical tripos, obtaining the thirtieth place among the senior optimes. In the following year Dr. Liveing took the degree of M.B., and passed the newly instituted examination for the membership of the Royal College of Physicians of London. In 1870 he graduated M.D. Cambridge, and in 1874 was elected a Fellow of the College. He was, besides, a Fellow of King's College, for a time assistant physician to King's College Hospital, and examiner in medicine at Cambridge in 1870-71.

In 1886 Dr. Liveing was appointed Assistant Registrar of the College of Physicians, and, on the resignation of Sir Henry Pitman in 1889, Registrar. This important post he held for twenty years, and throughout the whole time he conducted the work of his department with ability and invariable courtesy, which earned him the respect of all with whom he came in contact. On his retirement from the post in 1909, the honorary distinction of Emeritus Registrar was conferred upon him. Dr. Liveing's only publication was *On Megrim: a Contribution to the Study of Nerve Storms*, a book which was much esteemed in its day. His younger brother, Dr. Robert Liveing, died a few weeks ago, well over 80, and his eldest brother, Professor G. D. Liveing of Cambridge, still survives, having attained the age of 92, a remarkable record of longevity in a family.

The Services.

HONOURS.

THE King has conferred the honour of K.C.M.G. upon Surgeon Captain Robert Hill, R.N., C.B., C.V.O., P.M.O. of the Grand Fleet, in recognition of services rendered during the war.

The following appointments to the Most Excellent Order of the British Empire (Military Division) are announced:

To be Knight Commander.

Surgeon Rear Admiral George Robertson Turner, C.B., for valuable services as Consultant Surgeon, Royal Naval Hospital, Plymouth.

To be Commanders.

Surgeon Commander Charles Kendal Bushe, R.N., for valuable services as Officer in Charge of His Majesty's W.T. Station, Bathurst, Gambia.

Honorary Surgeon Lieutenant J. Donald Pollock, R.N.V.R., for valuable services at H.M. Naval Base, Granton.

Surgeon Lieutenant Evelyn Dennis Scott, R.N., for valuable services at Queen Mary's R.N. Auxiliary Hospital, Southend-on-Sea.

ARMY OF OCCUPATION BONUS.

THE Army Council has been notified by the Board of Inland Revenue that the bonus issuable to officers and other ranks selected for retention for military service, and to those who have not been released from military service by May 1st, is subject to income tax.

Medical News.

LIEUT.-COLONEL NATHAN RAW, M.D., M.P., has been appointed a member of the Committee of Inquiry into rates and qualifications for old age pensions.

SIR ARCHIBALD GARROD, K.C.M.G., physician to St. Bartholomew's Hospital, after three years' service abroad as temporary Colonel, A.M.S., has returned to civil practice in London.

THE Rockefeller General Education Board has set aside £80,000 as an endowment for a department of obstetrics in the Johns Hopkins Medical School, Baltimore.

THE Silvanus Thompson Memorial Lecture of the Röntgen Society will be delivered by Professor W. M. Bayliss, M.A., D.Sc., F.R.S., in the Barnes Hall of the Royal Society of Medicine on Tuesday, May 6th, at 8 p.m.

THE house and library of the Royal Society of Medicine will be closed from Thursday, April 17th, to Tuesday, April 22nd (both days inclusive), but members of the R.A.M.C. and other medical services will be admitted except on Good Friday and Easter Monday.

IT has been decided to resume the annual dinner in London of the officers of the Indian Medical Service. The dinner will be held this year at the Trocadero on Wednesday, June 11th. Further information can be obtained from Colonel J. J. Pratt, I.M.S. (ret.), 63, Addison Road, Kensington, W.14.

ON February 27th a marble plate, to which is fixed the medal of honour of the Assistance Publique, was awarded to the Lariboisière Hospital by the municipality of Paris in commemoration of the services rendered by the staff of the hospital to the people of Paris under bombardment, especially after the great explosion of the Courneuve, when it admitted more than four hundred casualties. Certain other hospitals were damaged; in 1918 bombs fell on the Saint-Antoine, Broca, Cochin, Claude-Bernard, and the Maternity, causing considerable loss of life.

IT was reported to the London Insurance Committee, on March 27th, that 512 discharged soldiers, entitled under the special arrangements to priority, and 473 of the ordinary insured population, were at present undergoing residential treatment in sanatorium or hospital, and that the waiting list of applicants for sanatorium benefit for whom beds were not available was reduced to twelve.

THE first Spanish National Congress of Medicine, which was to have been held in October last but had to be postponed on account of the epidemic of influenza, is to be held in Madrid from April 20th to 25th. The Congress is under the patronage of King Alphonso, who will be present at the opening meeting. The number of members already registered is 2,970. Receptions will be given by the King and the Municipal Council of Madrid. Occasion will be taken to found a Spanish Medical Association for the protection of the interests of the profession.

A GENERAL meeting of the National League for Health, Maternity and Child Welfare, and of its constituent sections, will be held in the Council Chamber, Guildhall, London, on Monday, April 14th, at 3 p.m., under the chairmanship of the Lord Mayor. Major Waldorf Astor and Viscountess Rhondda will discuss the Ministry of Health, and Lady Ampthill the proposals of the Red Cross Society for helping the civil population in peace. The annual report for 1918 has now been issued. The aim of the League is to form a link between the many voluntary national organizations concerned in safeguarding the health of the nation at large and of mothers and young children in particular. The office of the League is at 4, Tavistock Square, W.C.1.

A CONFERENCE was held on April 2nd, at the Local Government Board, with representatives of the port sanitary authorities of the principal English ports and their medical officers, to consider preventive measures against the importation of infectious diseases into this country from abroad owing to the resumption of passenger sea traffic. In view of the prevalence of typhus, small-pox, and other infectious diseases on the Continent, particularly in the east of Europe, the medical advisers of the Local Government Board regard it as essential that the utmost vigilance should be exercised, and the Board will take steps to strengthen the powers and duties of port sanitary authorities. The conference also discussed the arrangements for medical examination of aliens in connection with proposed legislation. On the establishment of a Ministry of Health steps will probably be taken to combine the present medical work of the port sanitary authorities with the medical examination of aliens.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

THE postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Aitologu*, *Westrand*, *London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, *London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscera*, *Westrand*, *London*; telephone, 2634, Gerrard. The address of the Irish Office of the *British Medical Association* is 16, South Frederick Street, Dublin.

LETTERS, NOTES, ETC

THE SPREAD OF RABIES.

THE Rabies Order recently issued for Monmouthshire and portions of the counties of Glamorgan, Brecknock, Gloucester, and Hereford, has raised the question of what a medical man should do in case he is called to a person in these areas who has been bitten by a dog suspected to be rabid. The Local Government Board issued a memorandum some time ago advising that any person bitten by a dog in areas in which rabies in dogs is suspected should have the wound treated as soon as possible with undiluted carbolic acid, or with undiluted izal or similar disinfectant, which should be allowed to come into contact with all parts of the wound; it should then be washed out with water or dilute disinfectant. If the dog is pronounced, on competent veterinary authority, to have had rabies, the person bitten should be urged to secure specific antirabic treatment as soon as possible, no matter what local treatment has been applied to the bite. The specific treatment can be given at Plymouth with material supplied for the purpose by the Director of the Pasteur Institute in Paris. The treatment is given for the Local Government Board by Dr. W. L. Pethybridge, Pathologist of the South Devon and East Cornwall Hospital; communications for him should be addressed to 11, Whitefield Terrace, Plymouth. Pending the decision as to whether the dog is rabid, the medical officer of the district in which the bitten person lives should be informed, and the person should be told to be prepared, if so advised, to go to Plymouth for antirabic treatment on receipt of a telegram.

IODINE IN INFLUENZA.

DR. W. THOMAS (Rhyll, North Wales) writes: I note with pleasure in your last issue that Dr. Andrés Sobrino of Madrid speaks enthusiastically of the efficacy of the tincture of iodine in influenza. The authorities of a dimmer therapeutic age than the present condemned it as unsuitable for internal administration because of its liability to produce iodism. There never was a greater error, but such is the power of tradition that when I try to persuade my brother practitioners to use it I am speaking to deaf ears. For many years I have prescribed the drug extensively in many conditions, and I owe much of the success I have achieved as a practitioner to its efficacy. The pharmacopoeial dose is practically useless: it must be given in doses of from 10 to 60 minims, well diluted. I have often taken 5j in a tumbler of water, and have averted many a threatening cold or an attack of influenza by so doing. It is excellent, combined with an alkali, in acid dyspepsia. I have never known it to produce the bugbear "iodism," and my own experience fully justifies Dr. Sobrino's enthusiastic praise. It is one of the best drugs in the *British Pharmacopoeia*, either externally or internally used.

SUPERANNUATION OF MEDICAL OFFICERS.

"EFFICIENCY" writes: As a strong committee is about to be formed in favour of legislation for superannuation of Scottish Local Government officials, including parochial medical officers, I hope the special claims of the medical officers of the Highland and Island parishes will receive the consideration they deserve. The medical officer who has served for fifteen or twenty years in these isolated parishes, doing Government and national work, ought to be eligible for pension.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

A Lecture

ON

THE PHYSICS OF THE CHEST,

AND THEIR RELATION TO DISEASES AND INJURIES OF THE THORACIC ORGANS.

INTRODUCTORY TO A POST-GRADUATE COURSE IN CONNEXION WITH THE 1ST WESTERN GENERAL HOSPITAL, DELIVERED AT THE LIVERPOOL ROYAL INFIRMARY.

BY

LIEUT. COLONEL SIR JAMES BARR, M.D., LL.D.,
F.R.C.P., F.R.S.E.

I PROPOSE to deal to-day with the physics of the chest and their relation to the diseases and injuries of the thoracic organs. This is a subject equally important to the physician and the surgeon, and, it seems to me, often one of vital importance to the patient. Excellent surgery in severe chest wounds was carried out by many surgeons in casualty clearing stations, whereby many lives were saved. They quickly removed as far as practicable all foreign bodies, dead tissue, blood clots, and every possible source of sepsis; and then closed the chest wounds, thus restoring the function of the injured lung. During the operation collapse of the lung was prevented as far as possible. A moderate amount of air left in the pleural cavity does not matter much, as it soon gets absorbed when the chest is closed.

In *British Medicine in the War* there is an article on gunshot injuries of the chest, with special reference to hæmothorax, which almost completely fails to recognize the physical principles which are so important in such injuries. It is only from a clear appreciation of basic principles that real advancement can take place.

In my Bradshaw lecture¹ on the pleurae, pleural effusion and its treatment, I dealt fully with the physics of the chest, and I must now refer to many of the experiments I then conducted. A good schema of the physical working of the chest is to be found in Sir Douglas Powell's work on *Diseases of the Lungs*. He aptly says:

It would be impossible truly to comprehend the manifold incidents and conditions of asthma, emphysema, pleuritic effusion and pneumothorax without a working knowledge of those static and dynamical conditions of respiration in health.

Within the thoracic cavity there are two pleural cavities and the pericardium, in health these are potential rather than real cavities; the blood-vascular cavity which is constantly varying in capacity and in the amount and distribution of its contents; the gullet, nerves, and lymphatic spaces; and, lastly, the aerial cavity within the lungs which in health is the only one in direct communication with the atmosphere.

INTRATHORACIC PRESSURE IN HEALTH.

The intrathoracic pressure in health is usually negative—that is, less than the atmosphere—though under varying conditions it may, and often does, become positive. In carrying out the Valsalva experiment I have often raised my intrathoracic pressure 100 mm. of mercury above that of the atmosphere. This is sufficient to shut out all blood from entering the chest; if the chest were laid freely open under such conditions the lung would bulge through the opening. After a few beats the pulse disappears in all the superficial arteries although the vessels remain full, and it is very interesting to watch through the x-ray screen the reduction in the size of the heart until finally it does not appear half its former size. Only those with good vital capacity can successfully carry out this experiment. Some have thought that this is a very risky experiment, lest you should stop the heart altogether, but there is not the slightest danger, as no one could keep up the pressure long enough to do so.

In order to keep up a positive pressure within the thorax while operating on the pleura, an American surgeon many years ago devised a cabinet in which he could vary the pressure. He and the patient's body were in the cabinet under negative pressure, while the patient's head was in communication with the external atmosphere. This ingenious device was too expensive and troublesome to become popular. A more simple method is to supply the patient through a closely fitting facial apparatus with air

or oxygen under moderate pressure above that of the atmosphere.

The negative pressure within the thorax is due to the elasticity of the lungs, and to the slight tendency of the chest walls to recoil beyond their greatest capacity in inspiration. The intrapleural tension is equivalent to the intrathoracic, and due to the same causes. This negative pressure under normal conditions is slight, constantly varying in amount, and always sufficient to act as a respiratory pump, which not only aids in the gaseous changes within the lungs, but renders great assistance in carrying on the pulmonary circulation. The lungs, even in expiration, are in a state of elastic tension, so that during quiet respiration the respiratory pump is more or less constantly in action.

The amount of the elastic force of the lungs has been determined by connecting a mercurial manometer with the trachea in the cadaver, and then puncturing the thorax so as to allow air to enter the pleura and cause the lung to collapse. This procedure, which gives a record of only 2 to 5 mm. of mercury, does not allow for the elastic recoil of the thoracic walls, and, moreover, in the cadaver the lungs have lost a great deal of their elasticity. Donders calculated that in health the elastic pull of the lungs in the expiratory period was 7.5 mm. of mercury. After an ordinary inspiration the negative tension is increased to 9 mm. of mercury, and after the deepest possible inspiration to 30 mm. In Müller's experiment I have often raised the negative pressure within my thorax to over 80 mm. of mercury.

The intrathoracic pressure is constantly varying during the respiratory phases, and the difference in individuals is often very great, so that experiments on the dead body are not of much value except for the establishment of general principles. So unsatisfactory did I consider these experiments that in 1907, when I was writing my Bradshaw lecture, I conducted a large number of experiments on myself and healthy friends. It is needless to say that I did not carry out the experiments with mercurial manometers tied in our tracheas. Even in the cadaver the manometer has the very serious fault that with the collapse of the lung the pressure of air in the trachea is raised, which of course raises the column of mercury, but at the same time prevents further collapse of the lung.

The method I adopted can be practised by any one on himself. A little intelligent practice is required to convert the mouth, the nares, the larynx, the trachea, and the intrapulmonary cavity into one aerial space having as nearly as possible the same pressure throughout. When taking the pressure in this cavity during oral breathing the mouth is open and the shut nares connected with a manometer. When the pressure is taken during nasal breathing, one or both nostrils are open, and the tube of the manometer lies in the shut mouth. In these observations it is essential that all respiratory movement be performed by the thorax alone, and that the mouth and nares be held in absolute repose. Any sucking or other movement of the mouth or nares destroys the uniformity of the cavity; of course, there is a second line of obstruction at the glottis, and the variation in pressure must be greater beyond the obstruction than in the mouth and nares. This obstruction cannot readily be removed in the human subject, but with the avoidance of all excitement it is reduced to a minimum.

I give you the following observations made on myself, because I can vouch for their accuracy, and I think my lungs and thoracic walls are still fairly elastic. I know many who would give a better record, and many who would give a worse. The lower pressures were made with a water manometer, and the higher with a mercurial; as mercury is 13.6 heavier than water it is easy to convert the readings into water or mercury, as you prefer.

Millimetres of Water.

1. Quiet oral breathing:
Inspiration -5 to -8; expiration +3 to +5
2. Deep oral breathing:
Inspiration -24 to -34; expiration +20 to +30
3. Quiet nasal breathing, two nostrils:
Inspiration -10 to -16; expiration +6 to +10
4. Quiet nasal breathing, one nostril:
Inspiration -16 to -22; expiration +12 to +16
5. Deep nasal breathing, two nostrils:
Inspiration -40 to -60; expiration +30 to +40
6. Deep nasal breathing, one nostril:
Inspiration -180 to -200; expiration +160 to +180

Müller's Experiment.—After deep expiration expanding the chest with the mouth and nostrils closed, -80 mm. of mercury.

Valsalva's Experiment.—After deep inspiration forcible compression of the chest with the mouth and nostrils closed, 100 mm. of mercury.

These experiments show the great variations in intrapulmonary pressure which take place, and the more active the respiratory pump the greater the variations.

All these observations on the thoracic cavity are equally applicable to the healthy pleural cavities, but textbooks seem to infer that the elasticity of the lungs and the recoil of the chest walls are constant dragging forces trying to separate the two layers of the pleura. If such dragging were the result of these forces we ought to find some evidence of its existence. As a matter of fact there is no traction but perfect equilibrium, as the elasticity of the lungs is counterbalanced by the intrapleural tension, which is equal in force and opposite in direction—the former positive and the latter negative. The elasticity of the lungs tends to separate the pleural surfaces, and the intrapleural tension, which depends on the elasticity and to a much less extent on the tendency to recoil of the chest walls, holds the surfaces together. When the lungs are stretched in inspiration the elasticity of the lungs is increased, and so also is the intrapleural negative tension by an equal amount. Sir Douglas Powell has shown:

that in quiet inspiration there is no inertia or elastic resistance of the chest walls to be overcome, but that, on the contrary, the thoracic elasticity is a reserve force of appreciable power constantly tending to enlarge the thorax and therefore acting in favour of inspiration.

In great emphysema of both lungs the chest enlarges to its greatest possible extent and becomes barrel-shaped, consequently this elasticity is abolished. Even without enlargement of the chest a similar condition appears in advancing years when the costal cartilages become calcified. I have seen such calcification in a young woman of 26, induced by the chest being long fixed with a spinal support or saddle.

Intrapleural Tension.

The external surface of the pleura is protected from the atmospheric pressure by the comparative rigidity of the chest walls and the tension of the diaphragm—it is like a membrane lining the inner surface of a metal ball, consequently the two surfaces of the pleura are pressed together, and both layers are pressed against the interior surface of the thoracic walls by the atmospheric pressure within the lungs.

The elasticity of the lungs and the elastic tension or recoil of the chest walls maintain a negative pressure within the pleura, or an intrapleural tension, equal in amount and opposite in sign or direction to that of the elasticity of the lungs, so long as there is no fluid in the pleura sufficient to overcome the elasticity, or as long as the pressure within the lungs, *minus* their elasticity, does not exceed the pressure of the atmosphere. When the intrapulmonary pressure exceeds that of the atmosphere, the lung elasticity remains a potential but not an active force.

If we take Donders's figures of 7.5 mm. of mercury or 102 mm. of water as equivalent to the elastic pull of the lung during the expiratory period, it would require a fluid pressure of 102 mm. of water all round the lung to abolish the negative tension.

In pleural effusion gravitation carries the liquid to the most dependent part of the sac, and as the pressure of a liquid is as its depth, the lower and posterior part of the lung collapses first, and the non-collapsed portion is pushed upwards and to the front.

On the other hand, in cases of pneumothorax the pressure is fairly equal at all points, and the pressure rarely rises so high as to cause complete collapse. When the general intrapleural tension becomes positive—that is, higher than the atmosphere—the lung must collapse. On the other hand, if the intrapulmonary pressure exceed that of the atmosphere by 102 mm. of water—a condition which exists in my chest during expiration through one nostril—then the intrapleural negative tension is abolished during expiration, and any further rise in the intrapulmonary pressure would keep the pleural surface closely glued together, so that the external layer of the pleura might be laid freely open without any risk of air entering the sac. We have seen that great intrapulmonary pressure only

occurs when there is some obstruction to forcible expiration, such as using only one nostril, or in Valsalva's experiment. It therefore follows that the best way to expand a collapsed lung is to increase the intrapulmonary pressure until the elasticity of the lung has been restored, and then, and not till then, to increase the intrapleural negative tension.

Owing to these marvellous provisions in Nature the two lubricated pleural surfaces can move freely over one another, but any force which separates them must be greater than the atmospheric pressure in the lungs; during inspiration this is less than the external atmosphere, and during expiration rather more. Moreover, the warming of the air in the lungs from 57° to 93° F. would make it expand about one-twelfth of its bulk, and this would increase the pressure in the alveoli. It thus takes at least an atmosphere (about 760 mm. of mercury) to separate the two pleural surfaces; when the surfaces are separated by fluid it must have been secreted at a greater pressure than the atmosphere. Thus any traction from the elasticity of the lungs can have no effect in separating the two pleural surfaces; any such effect is transferred to the walls of the thorax, seeing that there is often a difference of pressure on the two sides of the thorax. In the intact chest you could never lower the intrapulmonary pressure sufficiently to separate the two pleural surfaces, but in Müller's experiment the intrapulmonary pressure can be lowered sufficiently to make its dragging effect readily felt on the walls of the thorax.

If the smooth surface of a sixpence be attached with a little vaseline to the bottom of a metal piston of a syringe the sixpence can be easily moved about over the flat surface of the piston; but even when the nozzle is down and the sixpence only suspended by the lubricant (the object of which is to get rid of the air between the piston and the sixpence) the piston can be drawn up to the top of the syringe with the nozzle blocked, and a large, though imperfect, vacuum made without detaching the sixpence. The elasticity of the lungs and the atmospheric pressure are Nature's method for keeping the two lubricated surfaces together and enabling them to move freely over one another, and not for separating them, as is often supposed.

Molecular Cohesion.

A very distinguished surgeon and Fellow of the Royal Society has asserted that the force holding the pleural surfaces together is molecular cohesion, and has nothing whatever to do with atmospheric pressure. It will not be difficult to show that this assertion evinces a lack of knowledge of molecular cohesion and of the force of atmospheric pressure. Fellows of the Royal Society are not as a rule more ignorant than other people, but when found tripping, as they occasionally are, their delinquencies become more apparent, because less expected. The first essential for molecular cohesion is that the molecules must be in contact, and it is impossible for such contact to take place between two surfaces separated by a thin layer of fluid, even if that layer were only a ten thousandth part of an inch in thickness. Chemists and physicists may tell us that molecules are free to move about among one another, but in solid bodies they cannot move very far, and contact is absolutely necessary for cohesion. In the case of the pleura the surfaces glide over one another very easily. The only difficulty is in the separation of the surfaces, but if there were molecular cohesion it would be much more easy to tear the membrane than to move the surfaces.

Professor Donnan once told me that the surfaces of two pieces of steel have been cut so true that when they were brought into perfect apposition a much greater force than would be accounted for by atmospheric pressure was required to separate them. This is molecular cohesion; nothing like it occurs between any surfaces in the body. If there were molecular cohesion over such a large surface as the hip-joint, the junction would be so perfect that it would be much easier to smash the shaft than move the head of the bone the hundredth part of an inch.

Surface Tension.

Another force which some have imagined to play an important part is surface tension, a force which has engaged a great deal of attention in recent years; in this connexion it proves a very insignificant force. I have made many experiments on this subject, but the following

should suffice. The surface tension of a serous effusion having a specific gravity 1025 will support about 6 grains to the square inch; a transudate of a specific gravity of 1010 will support about 3 grains to the square inch. While the normal thin serous fluid of the pleural cavity may be an excellent lubricating material, its surface tension will not support more than 2 grains to the square inch; therefore as a force in holding the two pleural surfaces together it is scarcely worth computing.

I have shown the experiment with the sixpence attached with a little vaseline to the bottom of a metal piston of a syringe; much heavier metals can be suspended, but when the influence of gravity exceeds the atmospheric pressure plus the surface tension in the partial vacuum the weight drops off. In the open air very heavy weights, such as 56 lb., can be suspended from a smooth bookshelf with only a thin layer of vaseline intervening. No one could imagine that there was any molecular cohesion between the metal weight and the polished bookshelf, or that the surface tension of vaseline would support 56 lb. On the other hand, the atmospheric pressure is about 15 lb. to the square inch, and the attached surface of the metal is about 36 square inches, therefore the atmosphere would support a much greater weight with the same surface. The use of the vaseline is to prevent the air entering between the metal and the board; it allows the board to be moved freely over the metal, but so long as no air enters between the surfaces when the board is raised the weight follows it.

In the intact chest no air can get between the chest wall and the external layer of the pleura, consequently the two layers of the pleura are pressed together by the atmospheric pressure within the lungs. Even in Müller's experiment there is a pressure of over 13 lb. to the square inch pressing the two layers together. In most conditions it takes more than the pressure of an atmosphere to separate them; it is therefore no wonder that they often remain glued together even in punctured wounds of the lung.

It is very easy to raise the intrapulmonary pressure above that of the atmosphere, and under such conditions there would be a tendency to bulging of the lung through the external opening rather than separation of the pleural layers.

HAEMOTHORAX.

Sir John Rose Bradford says:

Haemothorax is the most common result of a chest wound; both pneumo-haemothorax and pneumothorax are relatively rare, and in a series of 328 cases of gunshot wounds of the chest only 8 cases of the former and 4 cases of the latter were observed.

This statement gives no indication of the relative number of cases of simple haemothorax. In dealing with infection he says:

In a series of 450 cases observed by Bradford and Elliott infection was present in 117—that is to say, roughly, in 25 per cent.; and Captain H. Henry, who carried out the bacteriological investigation, found that lung organisms, such as the pneumococcus, *B. influenzae*, and *M. tetragenus*, were present in some 20 per cent. of the infected cases, and that in the remaining 80 per cent. streptococci, staphylococci, and anaerobic gas-forming bacilli were found.

I will now deal with the physics of haemothorax. In the vast majority of cases the blood comes from the lungs and naturally gravitates to the most dependent part of the pleural cavity; this pressure first causes collapse of the lower part of the lung. If the wound be low in the chest, the collapse of the wounded portion of the lung may quickly arrest the haemorrhage, so that the negative tension is not abolished, but even increased, on account of the collapsed lung leaving a potential or actual cavity which is filled up by the effused blood. Elevation of the diaphragm, collapse of the lower part of the chest walls, and emphysematous expansion of the non-collapsed portion of the lung. The negative pressure may be so great as to draw over the mediastinum—including the heart—to the affected side. When the wound is in the upper lobe the haemorrhage is likely to continue until the intrapleural tension becomes positive, when collapse of the greater portion of the lung ensues. When the external wound closes, as it, as a rule, quickly does in cases of gunshot wounds, and the wounded lung collapses, no more blood or air can get into the pleural sac, and the air is quickly absorbed, so the negative tension is maintained or even increased. An estimate of the amount of blood effused

can easily be formed by the evidence of the tension, negative or otherwise. When the diaphragm is very high and immobile, and the chest flattened in the lower part, it is readily perceived that the amount of blood is slight and can be left alone if there be no evidence of infection.

In my Bradshaw lecture (1907) I rather forestalled many of the observations on the chest wounds in the present war. I said, *inter alia*:

With care atelectasis is easily differentiated from pleural effusion even when the dull percussion is absolute and the respiratory and vocal phenomena absent. In atelectasis of one lung the affected side is smaller than the other, the ribs are closer together and more sloping, the costal angle more acute, the diaphragm raised, the dull percussion barely reaches the middle line in front, while the sound lung passes beyond the medial line, the heart is either not displaced or slightly pushed over by the sound lung.

PLEURISY.

In pleurisy there is no sudden arrest of the effusion as in haemothorax; it accumulates gradually, and as the pressure becomes positive collapse occurs from below upwards, but there can be no general collapse of the lung until the intrapleural tension becomes sufficiently positive to overcome the intrapulmonary pressure minus the elasticity of the lung. Even before there is any general positive pressure, if there be a difference of pressure in the two pleurae the heart may be pushed or drawn over to the side where the negative tension is the greatest. As the effusion increases the tension becomes more and more positive, and eventually there is not only complete collapse of the lung, but the heart and neighbouring organs get much displaced, and the diaphragm pushed down so as to depress the abdominal organs. If the effusion be withdrawn and fluid air substituted for the liquid the pressure can easily be regulated, as it then becomes equal all round the lung and not according to the depth of the liquid. If care is taken to leave a pressure in the pleura less than that of the atmosphere in the intrapulmonary air sacs, the gradual expansion of the lung and the restoration of its elasticity are encouraged. On the contrary, in haemothorax the tension rarely, if ever, becomes positive, hence there is sinking in of the chest walls and a rise in the diaphragm, which becomes fixed in its elevated position. Owing to the complete collapse of the lower lobe there is no intrapulmonary pressure to assist in the expansion of the collapsed lobe. In empyema the pressure is frequently higher than in serous effusion, and when the tension is very high there is not only complete collapse of the lung, but you may have the pulsations of the heart communicated to the liquid giving rise to a pulsating empyema.

ATELECTASIS.

The lung is kept expanded by the negative tension within the pleura, and the greater and more active the inspiration the greater the negative tension, but not infrequently, especially in many wasting diseases where the demand for oxygen is not great, this negative pressure may fall to a very low ebb or may disappear, especially at the bases and posterior surfaces of one or both lungs, the inspiratory movements being confined to the upper part of the thorax. In such cases partial atelectasis of one or both lungs, or almost complete atelectasis of the lung of the side on which the patient has mostly lain, is not at all uncommon. Massive collapse mostly occurs in the lower lobes, and is especially apt to occur in young flat-chested individuals with pliant chest walls.

I have seen a greater number of these cases than has fallen to the lot of most men, for the simple reason that I have been on the look-out for them for many years. They are frequently overlooked because usually the subjective chest symptoms are negative, and so the lung is often allowed to remain so long collapsed that it never completely expands, and afterwards the deficient expansion of one side of the chest is ascribed to some old pleural effusion of which the patient has no recollection. When these cases are discovered in the early stages they are frequently mistaken for pleural effusion—an error which is apt to remain uncorrected if an exploring needle be not inserted into the chest. The careful physician should avoid exploratory operation until all other methods of diagnosis have failed him. In massive collapse the signs I have before mentioned should clear up the case. I have seen cases in which, after tapping with negative results, the physician in charge had diagnosed sarcoma of the lung,

unresolved pneumonia, etc. My opinion that the conditions were simply due to atelectasis which could be removed by respiratory gymnastics was at first received with incredulity, but the subsequent improvement in the cases, and the non-fulfilment of the grave prognostications proved the correctness of my views.

The Lung Reflexes.

In the early stages the diagnosis is at once cleared up by the excitation of the lung reflexes of Albert Abrams. If you rub the affected side briskly with the hand the collapsed lobe expands, the percussion note clears, you can hear the air entering the alveoli accompanied with some dry fine crepitations. If you keep up this friction for a length of time the collapsed lobe may almost attain its former dimensions, and the edges of the enlarging lung find their way between the arch of the diaphragm and the thoracic walls. If when the lobe is expanded the chest be struck firmly several times with the ulnar side of the closed fist the lobe collapses again.

The lung reflexes are largely responsible for the contralateral collapse which frequently occurs in gunshot wounds or other injuries of the chest. By these lung reflexes also collapse can be distinguished from hypostatic congestion. In those cases respiratory gymnastics should be practised, and the patient told to change his position frequently and to lie on the sound side.

In advanced cases of mitral stenosis collapse of numerous lobules on the posterior surface of both lungs frequently occurs, the oxygenating surface being greater than that demanded by the small quantity of blood passing through the lungs. These cases usually pass on to more or less permanent collapse with brown induration of the lungs. Apart from cases associated with mitral stenosis, atelectasis, partial or complete, when early recognized is very amenable to treatment; but when long neglected permanent damage to the lung results. In such a neglected case seen ten years ago I effected considerable improvement. He has since carried on hard laborious work without further medical advice until he consulted me a few days ago. There is still considerable deformity, but his vital capacity is sufficient.

Treatment of Pleural Effusion.

Fluid in the pleura lessens and finally abolishes the intrapleural negative tension, but so long as it is not sufficient to cause collapse of the lung and displacement of other organs it is often rapidly absorbed without any special medication after the febrile stage has passed. The effusion is a natural process which, if it continue till after the inflammation has subsided, lessens the risk of pleuritic adhesions; it also keeps the more or less collapsed lung quiet, which is very desirable if there be any active tuberculosis in it. A very large proportion of cases of pleurisy are tuberculous, and the early withdrawal of the fluid causes vascular turgescence of the lung, and thus often hastens the dissemination of the tubercle bacilli, and kills the patient. Before I began the substitution of one fluid for another by the introduction of filtered air into the pleural cavity, I was much more chary of early tapping than I am at present. I can now remove the whole of the effusion, even in tuberculous cases, at an early stage with perfect impunity.

A considerable number of deaths have followed the complete withdrawal of the effusion in elderly persons with rigid chest walls. The danger in such cases lies in establishing too great a negative pressure, which leads to hyperaemia and oedema of both lungs; this can be obviated by the introduction of air. I prefer air to oxygen, as nitrogen is not quickly absorbed.

When you remove, say, three to five pints of serous fluid from a pleural sac there is a potential or actual cavity which cannot be easily filled. Such a cavity cannot exist in the human body with a surrounding atmospheric pressure of 15 lb. to the square inch. It is filled by: (a) the carbonic acid gas which escapes from the serous fluid as the pressure is lowered; (b) by the more or less expansion of the collapsed lung; (c) by the return of the mediastinal contents, which were pushed to one side, and the further expansion of the other lung; (d) by increased quantity of blood in the chest; (e) by elevation of the diaphragm; and (f) by falling in of the chest wall. All these events may not suffice to fill the cavity if the amount of fluid withdrawn has been very great and the lung so

collapsed and bound down that it cannot expand. The great danger arises from the collateral congestion and oedema, not only of the expanding but also of the healthy lung.

The best way to lessen this extreme negative pressure is to substitute filtered air for the fluid withdrawn. I recommend the complete withdrawal of the effusion in all cases where tapping is considered necessary, but before any great negative pressure is established, and before the patient feels any discomfort, I stop the siphon and introduce air in about equal amount to the fluid withdrawn. I then re-establish the siphon, and complete the removal of the effusion. When all the liquid is withdrawn I inject 4 c.cm. of adrenalin solution (1 in 1,000) diluted with 8 or 10 c.cm. of sterile normal saline; and, if I think it necessary, I introduce more sterile air so as to make the total amount equal to half or three-fourths of the bulk of the fluid removed; the larger quantity of air is introduced in tuberculous cases. By this method the patient suffers no discomfort except from the thrust of the trocar, and runs no risk. I prefer the siphon to the aspirator, because the force of the suction can readily be regulated, and as the tube can only reach to a receptacle on the floor practically the suction never exceeds 1 lb. to the square inch; this force is greatly exceeded by the aspirator; and the greater the negative pressure the greater the risk of hyperaemia and oedema. When introducing the air into the pleura it may be an advantage to place a manometer on the circuit so as to obviate any risk of the production of a positive pressure in the pleura, but when the operation is intelligently carried out such refinements are scarcely necessary.

The pleura is a very vascular membrane; its blood vessels belong to the systemic system, and are innervated by the sympathetic, hence the adrenalin solution causes them to contract and lessens any further secretion. When the use of adrenalin is supplemented by the introduction of air, the negative pressure is lessened or abolished but rarely becomes so positive as to cause much collapse of the lung; as the air gets absorbed the lung gradually expands and the negative pressure is re-established. By this combined method it is easy to operate in any case, even during the febrile stage, though as a rule I prefer to let that stage pass. In no circumstances should the fluid be allowed to accumulate to such an extent as completely to collapse the lung; tapping should be performed before the patient suffers any respiratory distress. By the removal of the effusion numerous micro-organisms are often removed, and by the introduction of sterile air a light innocuous fluid is substituted for a heavy deleterious one. The history of the introduction of air into the pleural cavity, in which I took a prominent part, is recorded in my Bradshaw lecture.

Drugs.

I rather hesitate to say anything about drugs in this lecture, but, as surgeons as a rule know very little about physics and less about physics, while every fool considers himself a physician, I may venture on a few observations which may contribute to the restoration of the function of the damaged lung. There is one drug—common salt—which should, as far as possible, be eliminated from the diet, especially in cases of sero-fibrinous pleurisy, on account of its high osmotic equivalent. When there is a large quantity of effused fibrin, as occurs in pneumococcal pleurisy, decalcifying agents, such as lemons, citric acid, the citrates of ammonium, potassium, and sodium, may be used. It is, however, well to reserve their use until the acute stage of the accompanying pneumonia has passed, as the lime salts are the most important drugs in the treatment of that disease.

In order to hasten the solution and absorption of the effused fibrin there is no objection to the introduction of a small amount of trypsin into the pleural cavity. The injection of a few ounces of sterile liquid paraffin, which has a lower specific gravity but a higher surface tension than the normal lubricating fluid, lessens the liability to pleural adhesions.

When the pleurisy is practically cured you will find plenty of scope for ingenuity in trying to restore the function of the lung to its pristine vigour. For such purposes the conditions of the intrapulmonary pressure in the various phases of respiration should be studied; there are numerous respiratory exercises which can be brought into play.

EMPHYSEMA.

In the case of a child with elastic chest walls it is not easy to mismanage a case of emphysema. A considerable number of cases get well in spite of treatment. When a surgeon has to deal with a purulent effusion in the chest, his idea is free drainage, and forthwith out comes a piece of rib and in goes a large drainage tube; he expects it to suck up the liquid from the most to perhaps the least dependent part of the cavity, reckless of whether the collapsed lung ever expands or not.

In emphysema the lung is always more or less collapsed, and in any operation the object should be to avoid any further collapse and to make the lung expand so as to drive the purulent fluid out of the chest. A local anaesthetic should be used, but if, in any particular case, a general anaesthetic is deemed necessary, the anaesthesia should be very light, as pointed out by Mr. Arthur Edmunds, so as not to abolish the pleuro-laryngeal reflex, and thus the vocal cords are enabled to play their part in maintaining the pressure within the lungs.

A free incision should be made in a very dependent spot, about the eighth intercostal space, in a line with the lower angle of the scapula. If the ribs be close together it will be well to take out a long piece of one rib, and then make a very free incision into the pleura. An assistant should firmly compress the side, so as to drive the purulent matter out and allow as little air as possible to enter the pleura. A strip of gauze may be inserted into the wound to prevent it closing, but no tube should be introduced; then a large piece of sterile oiled silk should be applied over the wound to act as a valve, so as to allow the discharge to escape and no air to enter. Large aseptic dressings should be applied over the valve, and the affected side may be well strapped to prevent movement. The patient should lie on or towards the affected side, so as to lessen movement and encourage drainage; he should avoid deep inspirations, and make deep nasal expirations, so as to expand the affected lung and drive the purulent matter out of the pleural cavity. He should be instructed to inspire through the mouth and expire through the nose. He should also frequently practise the Valsalva method, or blow through a small tube. If the pus be very offensive or not draining well, the patient can be treated in a continuous saline bath and then no dressings will be required; not infrequently the surgical wound becomes infected, and then a previous afebrile temperature becomes febrile. The surgeon often ascribes this to the retention of matter in the chest, oblivious of the dry glazed condition of the wound which he inflicted. The wound is enlarged or a counter opening made, and in goes a large tube. The best treatment for such cases is to keep the patient in a warm saline bath for four or five hours daily, as long as required, during the febrile period, which is usually the afternoon.

In emphysema the pus is usually fairly liquid, is neutral or may be even slightly acid in reaction, contains some peptone and a ferment which seems to have the power of digesting fibrin, and thus the lung is not likely to be irreparably collapsed or bound down by adhesions; there is, therefore, a good chance of success if the operation be adopted early and the after-treatment be intelligently carried out.

An appropriate vaccine is often very useful. Tuberculous cases are the most troublesome, and usually when the fluid becomes purulent there is a mixed infection. Cases of pyopneumothorax are best treated by drawing off the liquid and filling the cavity with sterile air or oxygen. When the emphysema is loculated the surgeon may remove a piece of rib and insert a drainage tube if he choose; he cannot do much harm. Unfortunately, Estlander's operation is often necessary, partly owing to early mismanagement of the cases. There should be some effort to place the treatment of this disease on a more scientific basis than that on which it has hitherto rested.

PNEUMOTHORAX.

When the air enters the pleural cavity from the lung the exit is usually not so free as the inlet, so the intrapleural tension, both in inspiration and expiration, becomes positive; then the lung collapses, and does not get a chance of expanding again unless the perforation heals and the air becomes absorbed. In these cases, if there be much respiratory distress, part of the air should be withdrawn.

VISCERAL HERNIA INTO THE THORACIC CAVITY.

In a case of hernia of the whole stomach into the left thoracic cavity Captain Arthur Evans made an incision into the diaphragm, brought down the stomach, stitched the aperture in the diaphragm, and the patient made an uninterrupted recovery. This shows what good surgery can accomplish.

EMPHYSEMA.

In emphysema the chest becomes barrel-shaped (except in the senile type) and the costal cartilages rigid; so the chest walls assume their largest possible dimensions, the lungs lose their elasticity, the recoil of the chest walls and the intrapleural negative tension disappear. Consequently the only part of the respiratory pump which remains in action is the diaphragm, which is a very poor affair compared with the movement of the pliant chest walls; thus the vital capacity is much diminished. If the pump action be completely abolished the blood can only enter the chest under positive pressure, the veins of the neck remain full and tense even in inspiration, and the right side of the heart does not receive any respiratory assistance.

Recently I drew the attention of a medical man to the fullness of the veins of his neck and wished to know what had become of the negative pressure within his thorax. He seemed to think, though he was too polite to say, that I did not know what I was talking about, as he never felt better in his life, and the swelling must have been due to a tight collar. Of course I was glad to hear it, and if he were satisfied there was no reason why I should be otherwise, but if the veins of my neck were prominent I would quickly get rid of tight collars, and as soon as possible I would re-establish the negative pressure within my thorax, even if it should cost me a visit to the Alps.

If you wish to retain a healthy chest you must maintain a good vital capacity, for which purpose pliant chest walls are essential; you must not allow any calcification of costal cartilages to take place. In the respiratory pump action which maintains the vital capacity the movements of the chest walls are equivalent to more than double that of the diaphragm. Every one should be taught chest breathing and leave the diaphragm to look after itself; it is an adventitious aid which will come naturally into play when required. In emphysema the difficulty is not so much in getting air into the chest as in driving it out; hence an elastic band worn moderately tightly round the chest assists expiration, and gives much work on inspiration, which helps to re-establish a negative pressure within the chest. This band should not be worn when asleep.

ASTHMA.

In asthma there is a temporary emphysema of the air cells, and even violent expiratory efforts cannot expel the air through the contracted bronchi, but once the spasm is relaxed the normal function of the lungs is restored. In these cases there is always an excess of lime in the system, hence decalcifying agents should be used and the intake in the diet diminished.

BRONCHITIS.

Bronchitis is usually the forerunner of emphysema, the vital capacity diminished, and the respiratory pump thrown out of gear. A dry atmosphere, to get rid of the moisture in the lungs, is essential, alkaline treatment is necessary, while decalcifying agents are only requisite in the dry spasmodic type. When the expectoration is profuse, lime, adrenalin, and atropine are beneficial.

PNEUMONIA.

On the affected side the movements are diminished, the negative pressure is lessened and gradually becomes positive, but not to such an extent as to cause displacement of the heart and other organs. At first the loss of elasticity of the lung may be greater than that of the chest expansion, so that the intercostal spaces are depressed in inspiration. However, the affected lung may become so large as to abolish the recoil of the chest wall and the lung be marked by the pressure of the ribs.

When the lower lobe only is affected it may become so enlarged as to compress the upper lobe to half its size and depress the diaphragm. The blood is often badly oxygenated, but this is rarely, if ever, a cause of death; while, on the other hand, the greater percentage of

carbonic acid in the blood stimulates the respiratory centre and keeps up the pump action.

INFLUENZA.

Some of the most prominent features of the late epidemic of influenza, especially in those cases accompanied by bronchopneumonia, were extreme nervous prostration, loss of the knee-jerks, and a paretic condition of the chest walls, so that the patients became very livid without much respiratory distress. The best results were attained by respiratory stimulants, such as strychnine and atropine, and the lime salts.

LARYNGEAL DIPHTHERIA AND CROUP.

When there is any acute obstruction to the entrance of air to the chest the negative pressure becomes so great that the pliant chest walls are driven in, the diaphragm raised, and the lower end of the sternum caved in.

ADENOIDS.

In this case the obstruction is a slowly increasing process, which leads to defective development of the chest, high palate, and narrow throat.

WHOOPIING-COUGH.

This resembles the Valsalva experiment carried out in spasmodic efforts, and when the spasm is over the long crowing inspiration to fill the expanding chest represents a modified Müller's experiment. The result is that the lower part of the chest is pulled in during the expiratory phase and driven in during inspiration; in the pliant chest walls of children we may thus get permanent deformity.

MEDIASTINITIS.

In this condition we get a modified Müller's experiment, with a diminution in the volume of the pulse at the wrist during inspiration—the so-called *pulsus paradoxus*. When the chest is expanding, the adherent lungs cannot fill up the vacant space in the mediastinum, hence it is filled by the blood being retained in the great veins, the right side of the heart and the lungs, and the amount passing through the left side of the heart is temporarily diminished. I dealt very fully with this subject in the *BRITISH MEDICAL JOURNAL* of April 20th, 1907.

REFERENCE.

¹ *BRITISH MEDICAL JOURNAL*, November 9th, 1907.

WAR HEADACHE AND ITS SURGICAL TREATMENT.

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In the *JOURNAL* of May 4th, 1918, I published an article on Cerebral Oedema (excess cerebro-spinal fluid) the material for which was based on experience derived from the many cases of headache, severe and persistent, that came under my care when serving in India.

In some cases, influenced by the gravity of the headache and by my inability to bring about any appreciable relief in other ways, I advised operation. This procedure was followed by such immediate improvement and by such generally satisfactory late results that, although these operations were conducted on patients invalided from Mesopotamia for heat-stroke and cerebral malaria, I retained an open mind as to the benefits that might result from a more general use of decompression in the treatment of other types of war headache.

Since my return home, a year ago, some hundreds of cases suffering from head injuries have passed through my hands, and at the present time I have over 250 in my wards. A large proportion of these cases have open wounds—from slight to the most severe—and nearly every patient complains of headache and giddiness. However, my remarks in this paper apply solely to the more chronic cases of headache, all head wounds having been healed for months or years.

It is necessary, however, to recapitulate some points raised in my previous paper, for, although my remarks then applied in the main to headache of malarial and heat-

stroke origin, further experience shows that they possess a far wider bearing.

With regard to those patients subjected to operation in India, all ordinary measures were carried out previous to undertaking operative measures. The first patient was in so miserable a state by reason of the severity and persistency of his headache that he eagerly accepted the chance of cure by other methods. I carried out subtemporal decompression; cerebral oedema of a marked degree was found at the operation, and the headache was practically cured within two days, and this in spite of the fact that the symptoms had persisted for many months, originating from the day of the injury. The relief was fully maintained during the remainder of his stay in India. In six cases cerebral oedema of a marked degree was found, and the diminution of intracranial pressure afforded by the operation resulted in the almost immediate relief of all headache, with no recurrence in India, and with no serious relapse since—carrying on the history of the cases for a period varying from one and a half to two years.

Two explanations were advanced to account for the excess cerebro-spinal fluid, with the following fact as a basis. Cerebro-spinal fluid is secreted continuously, and, under normal conditions, it is absorbed at the same rate, into the cerebral venous system in the main, more especially through the Pacchionian bodies into the superior longitudinal venous sinus, these bodies acting as a kind of filter for the absorption of the fluid. First, under abnormal conditions—for example, heat-stroke and malaria, in both of which states the absorptive capacity of the surface cerebral vessels might well be expected to be markedly impaired—cerebro-spinal fluid is being secreted at a normal rate without absorption in direct ratio. In consequence, it accumulates in the subarachnoid spaces, bogs the surface of the brain, and even forces its way into the adventitious subdural space. Secondly, the diseases mentioned lead to excess secretion, the absorptive capacity of the cerebral vessels remaining as usual. The fluid, therefore, collects in excess. The first explanation was the one accepted, for reasons which it is not my purpose to repeat, and the evidence supplied by the cases of war headache, as here narrated, adds confirmation to the hypothesis.

With these facts behind me, and with the great material to hand, I approached the broader question of war headache and its surgical treatment with considerable confidence.

All the cases of war headache here recounted were secondary to gunshot wounds, concussion, fractured base, etc. However, out of the maze of injuries certain facts appear.

1. The more severe headaches are associated with an intact skull (closed box) or with small defects. With large deficiencies headaches are less frequent.
2. Frontal and temporal injuries are more commonly accompanied by headache than injuries in the parietal, occipital, and cerebellar regions.
3. Wounds near the vertex, in relation to the superior longitudinal sinus, are frequently associated with a severe type of headache.
4. The presence of foreign bodies within the skull is commonly accompanied by chronic headache, more especially when the foreign body is situated in relation to the ventricles of the brain.

Origin of Headache.

In the great majority of cases the headache dates from the moment of recovery from unconsciousness, either from the injury itself or from the operation carried out for the injury. The very first thing that the patient remembers is headache, at first very severe. In many cases special note is made of that point, and in some cases lumbar puncture was carried out for its relief. Previous to transference home the pains abated somewhat, and soon after arrival reached a certain standard. It is on this standard that I gauge the diminution, chronicity, or increase of the pains.

In view of the extreme severity of headache in the Mesopotamian cases, reported in my previous paper, it is interesting to note that of the twenty additional cases now reported seven came from Eastern fronts.

Severity of Headache.

This varies greatly, from mild and inconstant attacks through every degree and grade of headache to the most severe and persistent pains. Perhaps the most common type is as follows—a "cyclic" headache. Two or three days' comparative immunity, followed, without warning, by an attack severe even at its inception. This culminates

within a few hours with more or less complete prostration, the patient retiring to bed completely bowled over. This exacerbation terminates within twenty-four hours, leaving the patient still suffering from some degree of headache, perhaps a sense of oppression only. Further improvement then takes place, bringing the patient back again to the period of comparative immunity.

In explanation of this "cyclic" headache, it would seem probable that the cerebro-spinal fluid, by reason of insufficient absorption, slowly increases in quantity, finally arriving at a certain maximum, this coinciding with the period of maximum intensity of headache. By this time the fluid leads to such increase of intracranial pressure that some relief takes place automatically, the various channels being opened up whereby some excess fluid can escape. The intracranial pressure is correspondingly relieved and the symptoms diminish proportionately.

In other instances the pains show little variation in degree, persisting both day and night without intermission; the patient is never free from some degree of headache, varying from "dragging," "weight," "tearing" sensations to a constant dull ache. To these pains, after months and even years of suffering, some men seem to become accustomed, despairing of cure, procuring temporary alleviation with aspirin, etc., and regarding the headache as a thing that must be endured. I have had patients under my care who have put up with these miseries ever since 1914.

Position of Headache.

Wherever the injury, these headaches tend to become localized to the frontal region—behind the eyes—perhaps more acute on the side injured. Often, also, reference is made to the temples. Sometimes also there is a maximum "bursting" pain over the summit of the vertex. Local tenderness over the wound must not be confused with the site of headache proper. Severe occipital headache, with stiffness of the nuchal muscles, is altogether apart from these chronic headaches; such symptoms are more suggestive of a spreading cerebritis, ventriculitis, or meningitis.

Time of Onset.

In addition to the fact that mental or bodily exertion, noises, joltings (motor bus drives), concerts, and especially cinematographs, all tend to start the headache or add to its severity, there appear to be two special times of headache development—in the early morning on awaking, and in the evening between tea and bedtime. In most cases, as stated previously, the onset is rapid, the pains soon reaching their maximum.

Association with other Symptoms.

As space is limited, and as I am dealing essentially with headache, I must confine myself to a mere enumeration of associated symptoms. The complete syndrome is seldom present. Headache may be the sole evidence of the conditions existent.

1. Slowing of the pulse-rate, with but little raising of blood pressure.
2. Marked giddiness.
3. Elevation of temperature frequent, 99° to 100°, night after night. This may persist for months on end.
4. Insomnia.
5. Slow cerebration. Listlessness, anxiety, uncertain temper, depression. Patient unable to undergo any exertion, all attempts being f. flowed at once by headache exacerbation.
6. Tendency to exaggeration of all reflexes.
7. Nausea uncommon. Vomiting rare.
8. Slight blurring of the discs—retinal veins engorged and tortuous. Diminution of the visual fields. True papilloedema rare, unless the case is complicated by the presence of foreign bodies in the brain substance, especially when related to the ventricular spaces.
9. Bowels natural, except for some constipation. Urine normal.
10. Appetite good, except during an extra severe attack.
11. Fits, generalized, epileptiform.

Causation of the Headache.

These headaches are dependent on some general increase of intracranial pressure, and this in turn is due in the great majority of cases to excess cerebro-spinal fluid—cerebral oedema. I think that this, without question, is the correct interpretation—the oedema is very apparent at the decompression operation, and the symptoms are relieved or cured within a few hours of the drainage supplied by the decompression. In some few cases, even where a

diagnosis of cerebral oedema was made, no oedema has been found—merely a tense dura mater and a brain under pressure. It is to be presumed that, in these somewhat exceptional cases, there is a condition of ventricular distension due probably to interference in the normal channels at the base of the brain, with perhaps some ventricular hypersecretion. So far as my present experience goes, there are two points in the differential diagnosis between headache due to cerebral oedema and headache dependent on ventricular distension. In the later condition true papilloedema is more likely to be present, and the patient evidences more marked apathy and somnolence—a more defined state of slow cerebration. However, operative measures are indicated in both conditions, and the results obtained by operation (decompression) are almost equally favourable.

Treatment.

This may be considered under three heads: Rest, with dietetics and drugs, lumbar puncture, and decompression. Unless the conditions are exceptionally severe, the routine course adopted occupies about three months, the patient first passing through a probationary period of rest in bed, with careful dieting and with such medicinal treatment as seems fitted to the case. The results obtained are often very disappointing, for, although the patient may keep fairly comfortable so long as he is in bed, no sooner does he get up than the old headaches recur immediately. However, during this period full opportunity is afforded for the framing of a sound opinion as to the genuine character of the symptoms complained of, together with a record of the temperature changes, blood pressure, pulse rate, ocular conditions, etc.

Even when this course is only moderately successful in its results, it is customary to discharge the patient from the army and to give him instructions as to mode of living, together with advice as to reporting back in the event of relapse, etc.

Lumbar puncture has been carried out frequently. It would be expected that excess cerebro-spinal fluid, as represented by cerebral oedema, would be capable of confirmation by means of lumbar puncture. This, however, is by no means the case. Lumbar puncture may show a fluid of considerable excess and at high pressure with a perfectly dry cortex, as revealed by subsequent decompression operation. In other cases a puncture yielding negative results may be associated with a high degree of cerebral oedema. When considered also from the point of view of headache relief, lumbar puncture is equally unreliable. Sometimes it brings about alleviation, even marked relief, but this endures for a short time only, the headache soon returning, often more severe than before. Sometimes also the effect of lumbar puncture is to produce immediate exacerbation of headache. Consequently, from both points of view, diagnosis and treatment, lumbar puncture has proved, in my hands, unreliable. I obtained the same general results in the cases treated in India.

After all, cerebral oedema is primarily a cerebral manifestation, and, if my views as to causation are correct, cerebral symptoms may become manifest previous to any real increase of fluid in the spinal canal.

Rest, dietetics, drugs, and lumbar puncture failing, is there any hope of relief for this intolerable and persistent headache? The answer to this question is that sub-temporal decompression will almost certainly bring about relief or cure within forty-eight hours of the operation without in any way risking the patient's life and well-being.

I do not propose to enter into details of the operation, which will form the subject of a future paper. It suffices to urge:

1. That all other measures should be given free and fair trial, with a probationary period of about three months, unless urgency prevails.
2. That operation should be reserved for the more acute cases, and for those more severe chronic cases where the patient is rendered miserable by reason of headache and associated incapacity.
3. That the operation should be so conducted as to provide adequate decompression effect, and that the trephining should be carried out under cover of the temporal muscle. There should be such removal of bone and such dural incision as shall allow of the escape into the temporal tissues of the excess cerebro-spinal fluid, sufficing to lower adequately the intracranial pressure.

The question of surgical treatment is put before the patient, together with the statement that, so far as my personal experience goes, these more severe cases of war headache do not undergo spontaneous cure, and that the operation, besides being devoid of any serious risk to life, is almost certain to bring about alleviation or cure within twenty-four to forty-eight hours.

Warning is also given as to the "new" pains which may develop as the immediate result of the operation, and as to their gradual disappearance subsequently.

Results of Operation.

Within twenty-four to forty-eight hours or so of the operation it is customary to find that the "old" headache, however many months or even years it may have existed, has completely disappeared or else that it is of so mild a description as to be almost negligible. The immediate effect of the operation is most marked. During the next three weeks or so, in the convalescing stage, mild recurrences of the "old" headache have been observed, of short duration and readily controlled by aspirin, etc. The patient becomes bright and cheerful, full of gratitude for the relief obtained. It is quite common, however, for the patient to complain within a day or two of the operation of a "new" pain, sometimes quite severe, neuralgic in type, in the temporal region, with some stiffness in the masticatory muscles, and a "thumping" pain in the immediate vicinity of the decompression opening. These new pains are obviously associated with the operation directly, dependent on the division of the temporal muscle, interference with the nerves of the region, and the trephine opening itself. Any sudden exertion may bring on the "thumpings." It is quite unusual, however, for these "new" pains to persist for more than a few days. In the few cases in which the "new" pains have proved unusually severe there has been some trouble at the operation from bleeding, or else the patient has suffered from vomiting after the operation. In these cases, also, palpation over the decompression opening has shown a degree of tenseness which should not be present in the ordinary straightforward case. This tenseness is either due to an effusion of blood or is dependent on the free escape of cerebro-spinal fluid and a too slow absorption thereof. Within three weeks both "old" and "new" pains should have disappeared, the patient being bright and cheerful, hopeful of the future.

On following up these patients, in their after-history it has been found that, taking all in all, the late results are equally encouraging, as can be seen from the summary given below. Any real relapse is very rare, though now and again complaints are made of mild recurrences, both of the "old" and "new" pains. All patients have expressed themselves in terms of gratitude for the relief or cure obtained.

The following is a brief summary of twenty cases of subtemporal decompression carried out for the relief of headache, chronic and severe, the result of gunshot wound or other injury of the head, the headache leading to total incapacitation and rendering the sufferer utterly miserable. In the majority of cases the patient has himself requested operative measures, all other remedies having failed.

ABSTRACT OF CASE HISTORIES.

1. Gunshot wound, left temporal, August, 1916. Constant headache. Decompression two years after injury.
2. Gunshot wound, frontal, July, 1917. Constant headache. Decompression eight months after injury.
3. Gunshot wound, orbito-frontal, and "buried," October, 1917. Headaches ever since. Decompression five months after injury.
4. Gunshot wound, frontal, November, 1917. Headaches severe and persistent. Decompression three months after injury.
5. Gunshot wound, occipital, April, 1918. Headaches constant. Decompression four months after injury.
6. Gunshot wound, frontal and hernia cerebri, June, 1918. Headaches severe. Decompression four months after injury.
7. Gunshot wound, temporo-occipital, numerous small foreign bodies in brain, November, 1917. Persistent headache. Decompression five months after injury.
8. Gunshot wound, frontal, and "blown up," November, 1917. Persistent headaches. Decompression ten months after injury.
9. Head injury in 1910, followed by headache and fits. Much worse after service in India. Decompression twelve months after going to India. Invalided home.
10. Gunshot wound, frontal, April, 1915. Headache and fits ever since. Decompression three and a quarter years after injury.
11. Gunshot wound, mastoid, in Palestine, May, 1917. Headaches incessant. Decompression seven months after injury.
12. Injury to head in 1910. Headache and fits ever since; worse after service in India. Invalided home. Decompression fourteen months after proceeding to India.
13. Injury to head in 1915. Occasional headaches at first; after service in the East, headaches continuous. Invalided home. Decompression after one to two years' service.

14. Gunshot wound, fronto-parietal, April, 1918. Never free from headaches. Decompression three weeks after injury.
15. Fractured base, August, 1917. Headaches persistent. Decompression ten months after injury.
16. Gunshot wound, orbito-frontal, August, 1917. Persistent headaches. Decompression, right and left, six and sixteen months after injury.
17. Gunshot wound, frontal, May, 1918. Headaches very severe. Decompression five months after injury.
18. Gunshot wound, parieto-occipital, July, 1918, foreign body in cortex. Headaches severe. Decompression four months after injury.
19. "Blown up," concussion, August, 1918. Headaches persistent. Decompression two months after injury.
20. Gunshot wound, frontal, October, 1918. Headaches very severe. Decompression two weeks after injury.

INFLUENZA AMONG POISON GAS WORKERS.

BY

FRANK SHUFFLEBOTHAM, M.D.

(A Report to the Medical Research Committee.)

THE general impression which has been created that workpeople employed in the various processes connected with the production of poison gases enjoy a large degree of immunity from influenza has led me to make an investigation at the various factories, filling stations, and stores where poison gases are manufactured or handled, with a view to ascertaining the prevalence of influenza and the severity of the symptoms among this class of worker, and I am much indebted to the medical officers of these factories for valuable information which they have placed at my disposal.

I will deal first with a factory situated in a large Midland town where influenza was very prevalent during the two last epidemics. At this factory workers were engaged in processes in which sulphuretted hydrogen, chloro-picric and chlorine were involved. On the sulphuretted hydrogen and chloro-picric plants twenty-seven workpeople were employed; during both epidemics only one man was reported as suffering from influenza, and this case was very mild. With this exception, the health record among these workers was extremely good. On the chlorine plant 142 girls were employed, working on three shifts, and out of this number only six cases of influenza arose, and all of a mild form.

The medical officer of this factory has been good enough to give me details with regard to the incidence and severity of influenza among his own private practice in the same town. Out of a panel of 1,143 insured persons, no fewer than 802 contracted influenza, of whom 42 suffered from pneumonia as a complication, and of these pneumonia cases 6 were fatal. Three of these cases were men over 60 years old, two were men aged 31 and 24 respectively, and the remaining one suffered from tuberculosis of the lung. Apart from the panel practice, the same medical officer was called in to see 177 private cases of influenza. Pneumonia supervened in 14 of these cases, and there were 4 deaths, 3 in children; the fourth case was a man aged 74. With regard to the complications of this epidemic, pneumonia was not only the most frequent but the most serious. The other complications were: rheumatism, otorrhoea, severe neuralgia, pleurisy, colitis, gastritis in various forms, and one case of melancholia.

From these figures it is abundantly clear that poison gas workers were practically immune from influenza in this district, as only 4 per cent. of this class of worker contracted influenza of a very mild type, while 68 per cent. of the medical officer's panel patients were attacked, and the various complications indicate that the epidemic among these persons was of a serious character.

The second example I shall give will be taken from the workpeople employed in a factory in Staffordshire where similar poison gases were dealt with. In this case about 200 men and women were employed, and during the two epidemics there were only two cases of influenza. One of these contracted the disease on the way from Scotland; the second was fatal owing to the man insisting on returning to work before recovery. The medical officer of this factory reports that in his private practice in the same district, out of a panel of 2,500 he had 620 patients suffering from influenza, of whom 18 contracted pneumonia, with 5 deaths. In addition, he attended at home 150 private patients, of whom 13 had pneumonia as a sequela; one of these cases was fatal. The complications of the epidemic in this district were pneumonia, pleurisy,

bronchitis, gastritis, colitis, haematomesis, bleeding from the bowel, acute and persistent vomiting, acute and persistent diarrhoea, dacryocystitis, conjunctivitis, albuminuria, and hysterio-epilepsy.

In these epidemics poison gas workers show a very great degree of immunity from influenza, as only 1 per cent. were affected, while in the panel practice of the medical officer to the factory no less than 24.8 per cent. were victims during the two epidemics.

In three other centres where workpeople are engaged in chlorine processes it was found that influenza during the last epidemics was practically a negligible complaint, although, as in the previous instances, it was very prevalent in these districts among the general community. The conclusions arrived at by medical officers attached to these three factories were that not only was the disease very rare among this class of workpeople, but that when cases were contracted they were of a mild type.

Chloro-picrin workers are also found to be less susceptible to infection than the general community. In the North Midland district there are two factories, employing about 650 workpeople, where this substance was manufactured, and where filling was also carried on. Among this number only one or two cases of influenza arose in each district, and these were of a very mild type. Without exception, each person was able to return to work after being absent for eight or not longer than ten days.

Other lethal compounds were manufactured or handled in five different centres, and the information I have from these districts tends to show that workers in these compounds also are practically immune from influenza. At a large factory where upwards of 3,000 people were employed, and to which whole-time medical officers were attached and full records kept, it was found that while the general body of workpeople suffered from influenza to the extent of 50 per cent. in each epidemic, among the poison gas workers only 13 per cent. were reported as incapacitated on this account. At a second factory where similar bodies were manufactured not a single case of influenza arose. At the other three centres where these compounds were made comparatively few cases of influenza were found, and not a single case of pneumonia arose among any of this class of workpeople.

Among workpeople employed in the production of mustard gas the records show that the amount of absenteeism during the two epidemics was not increased beyond normal. The medical reports of over 1,000 workpeople indicate that in the production of mustard gas the average weekly percentage of absenteeism from all causes is about 13 for man and woman alike, and during the recent epidemics of influenza this figure remained practically stationary.

It has been found, however, that workpeople engaged in the production of phosgene gas are more prone to influenza infection than other classes of the community, although pneumonia does not arise more frequently among these workers than among other classes of patients. When bronchitis arises as a complication of influenza among phosgene workers it is invariably of a severe type, and may develop into bronchopneumonia.

The information with regard to influenza among poison gas workers has been collected from twenty different sources in different parts of the country; it all points in the same direction—that, with the exception of phosgene gas, workers engaged in the production of other poison gases have enjoyed a very high degree of immunity from influenza infection. It is agreed, on the other hand, that phosgene workers are peculiarly susceptible to influenza, and that the disease, when contracted, assumes a serious course.

At a recent meeting of the Société de Thérapeutique, Paris, Dr. G. Rosenthal commented on Rénon and Mignot's recent communication, in which they stated that injections of saccharose had no action either on human tuberculosis or on the experimental diseases in the guinea-pig (vide BRITISH MEDICAL JOURNAL, March 15th, p. 308). This objection, he said, was only applicable to hypodermic injections, which, as already stated, possessed little value. On the other hand, a daily intravenous injection of 5 to 20 c.cm. of Lo Monaco's solution (equal parts of saccharose and water) was efficacious in states of malnutrition, and indirectly had a favourable action on tuberculosis. The improvement was usually rapid, being well marked after ten to fifteen days' treatment.

ANTIMONY IN THE TREATMENT OF AMERICAN LEISHMANIASIS OF THE SKIN.

BY

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It is unnecessary to enter here into the history of the introduction of intravenous injections of antimony (tartar emetic) in leishmaniasis and other tropical diseases. I would refer those interested in the subject to a paper by myself published in the *Transactions of the Society of Tropical Medicine and Hygiene*, December, 1916, and to one by Jemina in the *Journal of Tropical Medicine and Hygiene*, January 1st, 1918.

Cases of American dermal leishmaniasis are not commonly seen in England, and that here recorded is of special interest because of its long duration and because no secondary buccal lesions have developed, a contingency always to be dreaded.

History of the Case.

The patient was born in Scotland, and served in the Indian army for thirty-three years (1876-1909). After leaving India he went to Portuguese West Africa for a trip; in 1909 and again in 1910 he visited Central America, travelling on the frontiers of Guatemala and British Honduras. He returned to England in July, 1910, and remained until October, 1910, when he went to Portugal. Since that date he has been in Portugal for the greater part of every year till 1917; he visited San Thome for a trip in 1912. From 1917 to the present date he has lived in London.

Previous Illnesses.

When in India he suffered from dysentery (1877-78) and from malaria in 1903. In 1880, when at Secunderabad, he had two sores on the left hand between the ring and middle fingers. They were of chronic type, and lasted for about a year, finally disappearing when he left Secunderabad. In Burma, in 1884, he had "mud sores" on the ankles. In 1889 and 1890 he was back in Secunderabad; sores on hands again. Their nature is doubtful. They disappeared without treatment. He had an attack of quartan malaria in British Honduras, 1910. He has never suffered from syphilis.

Present Illness.

When in British Honduras he was constantly travelling in the jungles and forests and was much exposed to the bites of all kinds of insects. Between April and July, 1910, he developed *Gusano del monte*—that is, an infection with the larvae of *Dermatobia cyaniventris* (= *D. noxialis*). Thirty maggots were removed from various parts of his body.

In October, 1910, when in England, he noticed a horny, oval, yellowish scale, $\frac{3}{4}$ in. by $\frac{1}{2}$ in. on the pinna of the right ear. He picked it off, leaving an open sore which showed no signs of healing. In January, 1911, he suffered from influenza followed by pneumonia, and at this time the sore became larger. Mercurial ointments were then tried, but did no good. Although the Wassermann test gave negative results in 1912, he took a course of mercury and potassium iodide spread over a period of five months (during his stay in San Thome of three months and the voyages out and home), with no result, the sore continuing to perforate the ear till it formed a complete passage, when it continued to spread round the edges. In 1911, when in Portugal for the winter, the sore became much worse and the lower part of the ear became very much swollen. The condition was then diagnosed as malignant disease, rodent ulcer, and syphilis by different observers.

In May, 1913, the patient saw Professor Simpson in London. Dr. Wenyon, at the London School of Tropical Medicine, was requisitioned to make cultures from the sore for leishmanial parasites, and *Leishmania americana* appeared after a long period of incubation. Sir Ronald Ross then tried radium, but this failed to cure the condition. On the patient's return to Portugal in 1914 Dr. Pereira da Silva cauterized the lesion and some superficial ulcers around it. Professor Kopke later recommended antimony, but this treatment was not carried out. From that date (1914) till the present time the condition has remained more or less unaltered, but a portion of the ear has been gradually eaten away. In June, 1918, the part became inflamed and the sore threatened to spread again. Antimony ointment was applied locally. It did good, the sore drying up considerably. Apart from this he has never had any other antimony; the ointment was applied from July 1st to 22nd, 1918.

In August, 1918, Professor Simpson suggested that he should be given antimonium tartaratum intravenously and asked me to give the injections. For this purpose I took the patient to the London School of Tropical Medicine and gave him a course, the result of which will be seen later.

Condition on Examination.

About an inch of the pinna of the right ear was gone; the area was dry except at the top, where, and also at the lower margin, there were signs that the disease still existed and was spreading. The part was tender and red. The diseased margin was punctured, and smears and cultures made from the serum and blood withdrawn. The results of both were

negative, but owing to the facts that leishmanial bodies had been found before, and that clinically the condition was characteristic and active, the injections were proceeded with. Besides the finding of the leishmanial bodies, the diagnosis was supported by the fact that the case originated in Central America, and assumed the form characteristic of the disease in those regions (*oreja de los chileros*). See descriptions by H. Seidelin (*Yellow Fever Bulletin*, vol. ii, No. 9, 1912), quoted by Julian Arce, *Dermal Leishmaniasis of Peru (Boletín de la Sociedad Geográfica de Lima*, xxxiii, 1916), and Rodríguez Arjona (*Rev. Med. de Yucatan*, vol. x, April-May, 1915), quoted in *Tropical Diseases Bulletin*, vol. vii, No. 2, 1916. No signs of any implication of the mucous membrane of the nose or mouth could be detected. The Wassermann reaction was negative.

Table showing Number and Results of Intravenous Injections of Antimonium Tartratum.

Date.			Date.		
Aug. 12, 1918	...	gr. $\frac{3}{4}$	Oct. 28, 1918	...	gr. 2
" 15 "	...	gr. $\frac{3}{4}$	" 31 "	...	gr. 2
" 19 "	...	gr. 1	Nov. 4 "	...	gr. 2
" 22 "	...	gr. 1	" 7 "	...	gr. 2
" 26 "	...	gr. 1	" 11 "	...	gr. 2
" 29 "	...	gr. 1	" 14 "	...	gr. 2
Intermission.			" 18 "	...	gr. 2
			" 21 "	...	gr. 2
			" 25 "	...	gr. 2
			" 28 "	...	gr. 2
Second Course.			Dec. 2 "	...	gr. 2
Oct. 3, 1918	...	gr. 1	" 5 "	...	gr. 2
" 7 "	...	gr. 1	" 9 "	...	gr. 2
" 10 "	...	gr. 1	" 12 "	...	gr. 2
" 14 "	...	gr. 1	" 16 "	...	gr. 2
" 17 "	...	gr. 1			
" 21 "	...	gr. 1			
" 24 "	...	gr. 2	Total	...	gr. 47

Remarks.—There was a slight rigor after the first dose on August 12th. On August 29th the ear looked better and was much drier. On October 3rd, at the commencement of the second course, the improvement was maintained; there was no sign of spread. All signs of inflammation had gone by October 14th. There was a rigor after the injection on November 4th; on the 18th the ear looked as if it were cured.

The injections were given by the late Dr. Cockin and myself. The tartar emetic was dissolved in 2 oz. of normal saline, sterilized, and run into the vein as near as possible at body temperature. The intermission in the course was due to the illness of Dr. Cockin and to my absence from London. It was not intended for any curative or other reasons. The injections were well borne, and, apart from a rigor twice, probably due to the solution being a little cold, there were no untoward symptoms.

The effect upon the lesion was striking; a very distinct improvement was noticeable on August 29th after the fifth injection. For all practical purposes the ear was cured on November 18th, but to make certain the injections were carried on for another month, to December 16th; a total of 47 grains in all having then been given.

Since that date I have examined the condition from time to time and no signs of any recrudescence have appeared. On January 2nd, 1919, the ear looked perfectly well, the margins were fibrosed, he could stand the part being pinched, and could sleep on it, a thing he could not do before. I saw him again on February 17th, when the part was still well; on March 6th it was evidently quite cured. All the mucous membranes are healthy.

ANTIMONY TARTRATE IN BILHARZIOSIS AND TACHYCARDIA.

BY

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I HAVE been told that, in some cases which have undergone courses of treatment by the intravenous injection of antimony tartrate, "tachycardia" was noticed; this suggested that antimony tartrate for bilharziosis was a dangerous remedy because it produced cardiac symptoms.

Sweeping general statements such as this are often made by people who have not given the remedy a real trial. They are inclined to attribute any unexpected symptom which occurs in the course of treatment and after to the action of the drug. Many mistakes are made in medicine by such hasty conclusions.

I have always advised that antimony tartrate should be given in both bilharziosis and leishmaniasis with circumspection, and with due appreciation of the fact that it is

a powerful agent for good or evil, according to the skill and acumen of the operator; but nevertheless it may be administered safely by the circumspect* doctor in his out-patient clinic with sure effect in the ordinary uncomplicated case of bilharziosis.

Tachycardia, or rapid heart (accelerated beat), is quite common amongst Egyptians, as is well known to doctors who do insurance work, and I have no doubt that some of the cases treated with antimony tartrate have tachycardia. But this symptom is not due altogether to the remedy.

The patients referred to above were Egyptian army soldiers. I am told that tachycardia is a common cause for the rejection of recruits for the Egyptian army, so possibly the tachycardia had nothing to do with the antimonium tartrate; indeed, it was first noticed some weeks after they had been discharged from hospital, and other possible causes of rapid heart had not, in this particular instance, been investigated. Many soldiers are excessive cigarette smokers; some of them have hypertrophy of the left ventricle, with a certain amount of heart strain, owing to military exercises. Here are two explanations which might account for the tachycardia, and they should be, in my opinion, excluded before antimony is blamed. Now I come to a third possible cause. The Egyptian soldier is—though big and muscular—sallow-skinned and anaemic, and this condition is due to the parasites he harbours in his intestines and elsewhere. *Schistosomum haematobium* is only one of the most common of them. *Ankylostoma duodenale* is equally common. *Amoeba dysenteriae*, *Taenia nana* and other tapeworms, *Ascaris lumbricoides*, threadworms, *Heterophyes heterophyes*, *Lambia intestinalis* and other flagellates, bacteria, and micro-organisms—any, some, or all together may be present in the bowel of the Egyptian—and more than these. The Egyptian soldier is no exception; he is infested with intestinal parasites.

Until intestinal parasites are looked for systematically and as a routine practice in hospitals, the list of obscure fevers, undiagnosed diseases, puzzling anaemias, mysterious enlargements of organs, such as Egyptian splenomegaly, will remain as long as ever, and will be a stumbling-block to medical men who write about them, label them with local names, or call them after their own or somebody else's name. "Simple fevers," "continued" or otherwise, are, in my opinion, frequently due to intestinal parasites—to intestinal sepsis in other words.

The bearing of these remarks on the treatment of bilharziosis by the intravenous injection of antimony tartrate is that symptoms such as tachycardia arising in the course of treatment by the drug may be due not to antimony tartrate at all, or at most only secondary to it; they may be due to a totally different cause—to other parasites for instance—although at the same time bilharzia may be present. The faeces should always be examined in hospital cases for parasites whilst antimony treatment is on its trial, and in private practice also if circumstances render it desirable. It should be borne in mind that in Egypt the intestine is infested with parasites, and it is best to get rid of these before commencing the treatment of bilharzia by antimony tartrate.

Mr. Newlove, pathological assistant at the Khartoum Civil Hospital, has often found in the faeces of Egyptians literally hundreds of *Taenia nana*, the small tapeworm which is so common an inhabitant of the Egyptian intestine. Thymol is no good, nor eucalyptus, but *Filix mas*, given on an empty intestine, will nearly always settle it. It may be that in order to cure an Egyptian of all his parasites, a series of courses of treatment is necessary—emetine for *Amoeba histolytica*; thymol for ankylostomes; *Filix mas* for *Taenia nana* and other tapeworms; then antimony tartrate for bilharziosis; and, at intervals, laxatives (white mixture), enemas, intestinal antiseptics such as bismuth for the micro-organisms, and lavage for lamblia (flagellate) and rectal parasites.

The faeces should be examined and the usual methods used to rid him of his parasites other than bilharzia, but there should be no abuse of the antimony treatment until those sources of trouble have been investigated in cases of bilharziosis.

Incidentally I may emphasize the necessity of the routine examination of the faeces in hospitals in tropical

*Circumspect = cautious and attentive.

countries. However irksome and unpleasant, such examinations are absolutely necessary for the diagnosis and treatment of tropical diseases.

A helminthologist should be part of the establishment of every hospital in the tropics, and he should be there to assist the doctors to carry out their own examinations. Few doctors know enough about the examination of faeces by microscope to make their knowledge of any practical value; how can they, since they never practise it? I would go so far as to say that a doctor who cannot himself intelligently examine faeces and translate into practical values what he sees should not be doing medical work in the tropics. A whole volume of medicine remains unknown to him. He is groping in the dark.

A NOTE ON THE VARIETY AND LATENCY OF ORGANISMS ON MISSILES IN THE TISSUES.

BY

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It is well known that organisms may remain in certain cavities and tissues of the body. Perhaps the best recognized examples of this persistence are the presence of the enteric bacillus in the gall bladder and the staphylococcus in the bones, months or years after the initial infection has died down. A similar condition has frequently been noted in war wounds, both of the bones and soft tissues; after varying periods of quiescence a "flare up" occurs and acute symptoms again supervene. This recrudescence of activity has also been noted to occur with foreign bodies lying apparently quiescent in the tissues.

It seemed that useful information on this subject might be gained by systematic examination of missiles removed from the tissues. To achieve this, missiles apparently sterile, or at least giving no clinical indication of infection, were sent for bacteriological examination. The missiles were removed with the usual surgical precautions and were dropped into a sterile tube. In some cases they were shelled out of the fibrous tissue capsule in which they lodged, in others the foreign body was removed in the capsule, which was removed before culture. The missiles were extracted for varying reasons, either because they were subject to pressure or caused pressure on nerves, or interfered with movement. Forty-four specimens were sent for examination; nearly 50 per cent. were sterile.

Varieties of Organisms Present.

Number of examinations ...	44
Number sterile ...	21=50%
Number giving cultures ...	23=50%
Varieties of organisms:	
Staphylococcus ...	10%
Streptococcus (never in pure culture) ...	2%
Bacillus perfringens ...	1%
Tetanus bacilli ...	2%
Putrefactive bacilli ...	6%
Leptothrix ...	1%
Number of bullets (sterile) ...	4
(with organisms) ...	11
Shell fragments (sterile) ...	16
(with organisms) ...	11

Time of Latency.

Staphylococcus ...	3-4.5 months
Staphylococcus and putrefactive bacillus ...	7 "
Leptothrix ...	1 month
Gram-positive bacilli ...	3-15 months
Bacillus perfringens ...	7 "
Staphylococcus and diphtheroid bacillus ...	30 "
Streptococcus pyogenes and tetanus bacillus ...	6 "

Of twenty-three missiles from which cultures were obtained, the staphylococcus was present in ten cases. Putrefactive bacilli, in six cases, were next in the order of frequency. In two cases the tetanus bacillus or organisms of that type were found. The analysis shows that shell fragments, contrary to what might be expected, are more often sterile than bullets. The length of time the missile remained in the tissues varied from one to thirty months. This examination has shown that the *Bacillus perfringens* may survive a period of seven months. In

this case the bullet was removed from the tibia, where it was lying without causing any apparent lesion in the surrounding cancellous tissue, as visible from an x-ray plate. After removal no ill effects followed, and the wound healed by first intention. In a second case a fragment of shell was removed from the forearm; streptococci and the tetanus bacillus were found. The wound suppurated, and immediately on receipt of the bacteriological findings antitetanic serum was administered; no symptoms presented themselves.

From a surgical point of view the following conclusions may be drawn:

1. That most pyogenic organisms can persist in the tissues for periods up to at least thirty months.
2. That they may at any time give rise to inflammation, and that this is possible in at least 50 per cent. of cases.
3. That prophylactic measures before removal might be useful.
4. That if possible the missile be removed complete in its fibrous tissue capsule.
5. That if such be impossible, careful disinfection of the cavity be carried out.

We are indebted to Brevet Colonel T. Gowans, R.A.M.C.(T.), for permission to publish this paper.

INUNCTION OF CREOSOTE IN PNEUMONIA AND INFLUENZA.

BY

JOHN E. B. WELLS, M.R.C.S., L.R.C.P.,
MAJOR R.A.M.C.(T.).

I WAS led to try the axillary inunction of creosote in pneumonia and in influenza and some allied conditions by several circumstances. My father, the late J. R. Wells, F.R.C.S., used creosote in his prescription for coughs and colds with success. Sir Leonard Rogers, in 1895, described in the BRITISH MEDICAL JOURNAL the use of an axillary inunction of creosote in cases of malarial pyrexia. On referring to a standard textbook of physiology I found it stated that the inunction of creosote produced sweating and lowered the temperature, but was not used for that purpose. In 1898 I used the axillary inunction of creosote in a severe case of pneumonia. Within half an hour the patient sweated, and the temperature fell from 104° to below 100°; uninterrupted recovery followed. Since then I have made frequent use of this method with almost unvarying success; the results have been too constant to admit of the change in the patient's condition being merely a coincidence with the crisis occurring at the time of the administration of the treatment.

The method of administration is simple. For adults, 10 minims of pure creosote are gently rubbed into the right axilla with the finger. If necessary, which is very rarely the case, a second dose may be given, this time in the left axilla for fear of blistering. The patient must be dressed in woollen or flannel and placed between blankets so as to avoid a chill after the sweating. Only slight discomfort attends the treatment; a slight burning of the skin, which passes off in a day or two without vesication, is the only disagreeable effect. For children I have diluted the creosote with soap liniment, reducing the proportion of creosote according to the age of the patients. For infants, in place of the axillary inunction, I have at times substituted rubbing the back and front of the chest with a liniment containing creosote.

Practically all cases of influenza under my care have been treated by rest in bed (most of them a soldier's bed—that is, on the ground), plenty of fresh air, and the administration of creosote by the mouth. Half a minim of creosote shaken up with half an ounce of water is the simple mixture—the addition of half a minim of oil of peppermint makes it more palatable, but it is not very unpalatable without it. Very few cases treated in this way develop pneumonia. When signs of pneumonia developed the axillary inunction of creosote was nearly always followed by its abortion, or it was so modified that the patient recovered. When the pyrexia of influenza has gone, quinine or strychnine or both may be necessary.

Several cases of meningitis due to infection by *Micrococcus catarrhalis*, and one by meningococcus, recovered

after axillary inunction. I believe further trial of this remedy would show good results in cases of these infections.

I believe creosote to be particularly detrimental to the pneumococcus, the *Micrococcus catarrhalis*, and the influenza germ (whatever it is finally decided to be), and that creosote administered by axillary inunction enters the blood stream through the lymphatics, and is taken direct to the lung tissues by the pulmonary circulation, possibly taking a short cut into the blood stream by the lymphatic duct. Its diaphoretic action helps to relieve the hyperaemia of the lung tissues, and thereby removes the nidus for the pneumococcus which might be formed by an exudate; its antiseptic action is brought to bear directly on any germs that may have gained access to the air spaces of the lungs.

The action of creosote when administered by the mouth is, I believe, mainly that of a local antiseptic and sedative to the fauces, but its action is also felt by the upper air passages. Whatever its method of action, I can say that the methods of administration I have described have been successful in the vast majority of cases in my own hands, and will, I believe, prove equally so in the hands of others who may try them.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

APPARENT CURE OF A CASE OF TWO RODENT ULCERS IN THE SAME PATIENT.*

ON April 15th, 1918, Mrs. G., aged 57, was sent to me by Dr. Napier with two rodent ulcers. One was situated on the cheek below the centre of the right eye, the other was about $\frac{3}{4}$ inch from the first, and involved the outer portion of the right lower lid to its extreme edge. There was a history of about ten years during which these lesions had been slowly progressing, and at the time I saw the patient the diagnosis was quite beyond doubt, the lesions presenting the rolled edges of characteristic appearance, with ulcerated bases, typical of rodent ulcers of considerable standing. Following my usual routine I gave this patient a course of therapeutic x rays, concentrating them on to the ulcers, and protecting the surrounding skin with sheet lead. There was a cessation of the active ulceration and a general improvement of the lesions under this treatment. At the appropriate stage I followed up the x-ray treatment with an application of solid carbon dioxide snow, accompanied with considerable pressure, to each ulcer separately. A very brisk reaction ensued, so much swelling occurring that the patient was unable to see out of the eye on the affected side. This gradually went down and a violent inflammatory reaction supervened, which took three to four weeks to subside. The patient then went away and I did not see her until about a month ago, when some difficulty might have been encountered in locating the sites of the ulcers that formerly existed. A thin, supple scar took the place once occupied by the growths, which appeared to be cured. I cannot venture to say that recurrence may not take place, but experience teaches that if a rodent ulcer that has not been treated by other methods, or insufficiently treated by the means I mention, is subjected to the combined influence of therapeutic x rays and solid carbon dioxide snow, recurrence is rare. After previous treatments, however, a satisfactory result is more difficult to obtain.

In the early days of x rays, some seventeen years ago, I had a good opportunity in London of testing the action of therapeutic x rays alone upon rodent ulcers, and my experience was that improvement might be obtained up to a point short of a complete cure, but that they invariably got worse again and progressively became more intractable. The solid carbon dioxide treatment, however, supplied just that additional therapeutic measure that was necessary, and it is now possible to treat this disease in its earlier phases with a prospect of very good results.

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Reviews.

EQUILIBRIUM AND VERTIGO.

ALL who are concerned with diseases involving the labyrinth and the central tracts in connexion with it will find Dr. ISAAC H. JONES'S book on *Equilibrium and Vertigo*¹ of great service. The methods of testing for lesions are described in great detail, and the conclusions to be drawn from the results as to the nature and situation of such lesions, whether in the receptors themselves or in their central connexions, are discussed and clearly explained. The illustrative cases analysed by Dr. Fisher serve a further instructive purpose.

The work is copiously provided with excellent photographs, some of them stereoscopic. The latter, given separately as duplicates, will be useful in obtaining a better comprehension of the anatomy of the parts shown. There are numerous valuable diagrams of the tracts in the central nervous system which convey impulses from the labyrinth and bring into relation the various centres which take part in the complex and widespread reactions that result from stimulation or paralysis of the different parts of the mechanism.

The normal anatomy and physiology of the labyrinth are well described. It is interesting to note that the distinction between the static sense of position, obtained from the utricle and saccule, and that of sudden movement, obtained from the semicircular canals, is pointed out. The functions of the nerve centres and tracts, although their anatomy is given in great detail, receive comparatively little attention. No doubt the difficulties are great, but even hypothetical suggestions would be welcome. The description of the functions of the cerebellum is not quite up to date. The fundamental work of Dr. Gordon Holmes was probably not accessible to the author. Improvements in the Bárány turning chair, which plays so large a part in the various tests, are described. In the use of this chair for testing the vertical canals it would seem more appropriate to arrange it, if possible, so that movements could be made also in a vertical plane with the patient's head in normal relation to his body. When the neck is bent in order to bring the vertical canals into the horizontal position for the purpose of the test, it must not be forgotten that the stimulation of proprioceptors of the muscles and other parts of the neck plays a large part in reactions to movements of the head, as shown particularly by Magnus and De Kleijn. A remark may be made with respect to the "caloric" test of Bárány. It would have been useful if some further explanation of the way in which the semicircular canals are stimulated by the cold douche in the auditory meatus were given.

The first part of the book describes how study of the labyrinth is of importance to the general practitioner, the neurologist, the surgeon, the ophthalmologist, and the otologist, as well as in relation to the testing of aviators. It is also shown that sea-sickness is due to movements of the endolymph. As regards the testing of aviators, it may be pointed out here that experience has indicated that the labyrinth does not play so preponderant a part in the appreciation of changes in direction of movement as might be supposed. It appears that differences of pressure on the skin, in the various situations in contact with the seat of the aeroplane, are of great importance.

The second part is devoted to the anatomy, physiology, and pathology of the labyrinth and its central connexions. The method of making systematic records of tests, as used by the author, is deserving of general consideration.

The way in which the book is got up is excellent, almost luxurious. Whether it might not have a wider circle of readers if somewhat more condensed is perhaps a matter of opinion, but it may be said to be indispensable to those who have to devote attention to the questions discussed. Although, of course, affections of the auditory apparatus are frequently associated with those of the labyrinth, they do not, strictly speaking, belong to the subject matter of a work dealing with the latter.

W. M. B.

* Being a case shown at the meeting of the Witwatersrand Branch of the British Medical Association at Johannesburg, South Africa, on December 19th, 1918.

¹ *Equilibrium and Vertigo*. By Isaac H. Jones, M.D. With an Analysis of Pathologic Cases by Lewis Fisher, M.D. London and Philadelphia: J. B. Lippincott Co. 1918. (Med. 8vo, pp. xv + 444; 130 figures. 21s.net.)

MANUALS FOR X-RAY WORKERS.

THE second edition of CHRISTIE'S *Manual of X-Ray Technic*² follows the same lines as the first. A few illustrations have been added, and a description of the Coolidge tube; the chapter on gastro-intestinal examination has been rewritten, that on diseases of bone made more comprehensive, and a description of the technique of x-ray therapy embodied. The author adopts the American terminology throughout, using the terms "röntgenology," "röntgenogram," "röntgen dermatitis," and so on. This cumbersome and irrational terminology, absent from the first edition, cannot be looked upon as an improvement, and the coinage of such hybrid words is to be deprecated. As is usual in manuals of this type, the first part—which constitutes more than one-third of the whole—is devoted to physics, instrumentation, the x-ray tube and its management, and the photographic procedures. After a chapter on the use of the screen, stereoscopic radiography, and the localization of foreign bodies, the author deals with x-ray diagnostic work in a series of chapters in each one of which his intention is to outline the radiographic technique and the results which may be looked for in making the examination of special parts or organs. Naturally in a small book of this kind everything has to be compressed into very little space, but this can be overcome, and when, as is the case, method and differential diagnosis of disorders of the urinary system are compressed into five pages of letterpress, little more is done than merely to indicate the x-ray possibilities. Not enough care has been used in making the choice of illustrations, and we venture to suggest that if dental radiography were carried out in the manner shown by Fig. 24, with no fixation of the patient, the results would be both blurred and distorted. In a book which is intended to be a guide to beginners it is essential that the greatest care should be taken to make sure that the description of technique should be strictly accurate. The purely radiographic illustrations are practically limited to those of the gastro-intestinal tract, and these are far from being up to the standard of modern work, and do not therefore set to the beginner the ideal at which he should aim. Apart from these criticisms the book appears to fulfil its purpose.

The second edition of PRINCE'S book on *Roentgen Technic (Diagnostic)*,³ except for a few additions and corrections, is practically a reprint of the first. The author's design has been to supply a small volume particularly for general practitioners who have installed their own x-ray plant and who are using an interrupterless transformer. It should be noted that work with the ordinary induction coil is not dealt with at all. An outstanding feature is Chapter V, illustrating by means of photographs the exact positions of tube and patient for the making of radiographs of all the different parts of the body. These illustrations are good and demonstrate the matter of position very vividly. The same chapter also states in tabular form the essential details for each examination, including the spark gap, milliamperage, and time of exposure suitable for each radiograph. Perhaps too little stress has been laid upon the method of radiography in the upright position, and it is unusual, as is described, to make examinations of the thorax and of the oesophagus with the patient lying down. There is an illustration and description of an apparatus for serial radiography which enables sixteen separate views of the pyloric end of the stomach to be made on a 14 by 17 plate, and the photographic part of x-ray work in general is well described.

ITALY IN THE WAR.

MR. G. M. TREVELYAN is a living representative of the long line of British gentlemen and scholars who from the sixteenth century onwards have drawn inspiration from the scholars, the artists, and the political thinkers of Italy. No one therefore could have been better prepared to be the interpreter to us of Italy's effort in the war, now ended or suspended, and in writing *Scenes from Italy's War*⁴

he has been able to draw upon his experiences when in command of a unit of British Red Cross ambulances carrying sick and wounded from the Italian advanced dressing stations.

Italy came into the war on May 24th, 1915, and after many turns of good and evil fortune brought her chief enemy, Austria, to sue for an armistice on November 2nd, 1918. How great the effort made by Italy is shown by the fact that, according to a recent calculation, she mobilized 15.1 per cent. of her total population, and lost 1.32 per cent. in killed and missing. Great Britain, excluding the Dominions, mobilized 12.6 per cent. of the population and lost 1.5 per cent. in killed and missing. France mobilized 20.4 of her population and lost 3.37 per cent. in killed and missing. The United States mobilized 4.1 per cent. of the population and lost 0.13 per cent. in killed and missing.

The ambulance unit Mr. Trevelyan commanded was formed by him in August, 1915, with the assistance of Mr. Geoffrey Young, poet and Alpine climber, and Mr. P. J. Baker, a Cambridge athlete, both of whom had had experience in Flanders. The unit was financed and administered in London by the British Committee in Aid of Italian Wounded, but served under the British Red Cross as the first Italian unit of that society. A convoy of twenty-six cars drove across France, entered Italy on the evening of August 29th, and worked in and for the Italian armies to the end. It began service with the 6th Italian Army Corps in the zone of Cormons and Gorizia. It was based on the Villa Trento, in this region, but for the operations on the mountains about Gorizia had its main advanced station at Quisica. One of the first Italian misfortunes was an outbreak of cholera in November, 1915; of its severity, and the way in which it was controlled and the disease finally altogether prevented, an account has been given by Sir Filippo de Filippi, K.C.I.E., to the Royal Society of Medicine. It was conquered with the help of the engineers, who achieved many wonders in establishing water supplies, in road making, and in carrying aerial railways to mountain fastnesses no path could reach. In the handling of the sick the British Red Cross unit had its large share, and also in succouring, on June 29th, 1916, the sufferers from the first gas attack the Italians experienced. For two years and more the field hospital at Villa Trento, under Dr. Brock of Rome, formed part of the unit; among those who served in that unit was Sir Alexander Ogston. To him, to Dr. Brock, and to Dr. W. E. Thompson, Mr. Trevelyan pays graceful compliments. It grew eventually to a field hospital of 180 beds, with a nursing staff of a score of British sisters and V.A.D.'s. At first the Italian authorities objected to women nurses near the front, and it was only by the personal exertions of the Duchess of Aosta that their position was established. Working in association on the Italian front in 1916-17 was the radiographic unit of Countess Helena Gleichen and Mrs. Nina Hollings, of which so graphic an account was given a few months ago in *Blackwood's Magazine*. When the Italians captured Gorizia Italian field hospitals were set up in the town, although it was commanded by the enemy artillery, and the Red Cross unit established itself in the northern outskirts. The unit was, in fact, often venturesome, and suffered accordingly. Some of its members were killed, and several, including Mr. Geoffrey Young, lost a limb. In the Bainsizza offensive, which kept us all breathless in August, 1917, the unit pushed far forward over shell-swept roads, and accomplished much admirable work, carrying many patients to the Italian Red Cross advanced surgical station, Città de Milano, under the direction of Professor Baldo Rossi.

The chapters on Caporetto and the retreat (October, 1917), and on the rally in the following month, the high Alpine warfare of the spring, and the battle on the Piave in June, 1918, contain a sympathetic study of the causes of the collapse of the north-eastern part of the Italian line in 1917. The so-called phalanx strategy of the bull's charge brought the German generals some spectacular successes. The advance to the Marne in 1914, the overrunning of Serbia, and the defeat of the British Fifth Army, which brought the Germans so close to Amiens in March, 1918, may help us to understand what happened in Italy. In 1914 there was no failure of leaders or men, and in March, 1918, the failure seems to have been in leadership and preparation. Mr. Trevelyan analyses acutely the causes

² *A Manual of X-ray Technic*. By Major A. C. Christie, U.S. Army. Second edition. Philadelphia and London: J. B. Lippincott Co. 1918. (Med. 8vo, pp. x + 152; 48 figures; 12s. 6d. net.)

³ *Roentgen Technic (Diagnostic)*. By Norman C. Prince, M.D. Second edition. Henry Kimpton, 1918. (Med. 8vo, pp. 142; 7s. 6d. net.)

⁴ *Scenes from Italy's War*. By G. M. Trevelyan. London: T. C. and E. C. Jack, Limited. 1919. (Medium 8vo, pp. xvi + 240; frontispiece and 12 maps. 10s. 6d.)

of Caporetto, and says that, apart from some want of foresight of the leaders, the cause was enemy propaganda, working upon the special temperament and conditions of parts of the Italian forces. The war was decreed by the towns; the inhabitants of the rural districts did not understand its objects, and nobody seems to have taken any pains to enlighten them. The peasant soldiers were homesick and ready to listen to the agitators, who told them they were fools to fight for the townsmen and the capitalists. Mr. Trevelyan is not only sympathetic, but reserved; occasionally, however, he lets himself go. He writes:

Suddenly, as by a flash of lightning, men and women in Turin and Florence, and in the remotest villages of north and south, saw what they had done by their murmurings, their cryings for peace when there was no peace, their sympathy with deserters, their discouraging letters to the front. Even in clerical circles in Rome fashionable ladies admitted "the thing had gone too far." The over-practical pacifists of Caporetto, instead of being in favour with the nation whom they had striven to release from the obligations of further self-defence, were everywhere cursed as traitors.

One of the ways in which Italy was aroused was the propaganda of the mutilated. A few wounded officers in hospitals formed themselves into a committee, and were joined by many privates and officers who had lost eyes and limbs.

In one industrial village in the Milanese, the mayor and population refused the missionaries a hearing; but the paralysed Lieutenant Paulucci, held up on a table by his soldier friend, began to speak, and in an hour had converted them all, and drove off amid a frantic ovation. But the most effective speaker was said to be a blind private.

The ambulance unit in the retreat had to abandon stores and lost half its cars, but got away all its nurses and men, besides saving all the British sick and wounded from General Hamilton's batteries. Mr. Trevelyan is chary of praise, but he says:

Not a man or woman in the retreat, whether British army or British Red Cross, but rose to the height of the occasion. Ours was not a grumbling unit, as English people go, but it was the only week in the war when no one grumbled about anything.

On this note of praise and on the note of final victory in the epilogue we may take grateful leave of a book which once taken up will not easily be put down. A set of excellent sketch maps in the text makes it easy to follow the story of the military operations.

NOTES ON BOOKS.

WE have read with enjoyment Dr. BERKART's well written and judicious essay on the *Treatment of Gout*.⁶ Without adding anything especially new to the discussion of an endless topic, he invests it with much common sense and clinical wisdom. In his view gout is not a specific form of disease primarily and essentially due to errors of diet, but a complex process brought about by a congenital and often inherited abnormality of development. Since all gouty persons are not addicted to dietetic excess, it is vain, he argues, to raise high hopes based on the assumption that a simple life and moderation in eating and drinking—useful as these are—will altogether prevent gout. He is caustic on the subject of dietetic prohibitions, while recognizing that a suitable diet here, as in all other chronic affections, is one of the most valuable elements in treatment. Each case, he says, presents its own problem, which must be solved in accordance with existing circumstances and upon rational principles. Two more quotations will serve to show the spirit of Dr. Berkart's teaching: "A diagnosis of gout should not invariably be the signal of interfering with the patient's habit of living unless it is clearly unsuitable." "The object of a rational diet for the gouty is best attained if the patients are not nervously apprehensive whether the necessary articles are digestible or not." He discusses medicinal agents from the same critical standpoint, and finds most of them wanting. Dr. Norman Moore has written of John Mirfield, the fourteenth century physician, that, "like a large part of the public of our day, he was satisfied as to the value of a remedy when patients could be found who said they were better after employing it." This attitude of mind is, we fear, not confined to the lay public. To those of our profession who are at all that way inclined Dr. Berkart's little treatise should prove a useful corrective.

⁶The *Treatment of Gout*. By J. B. Berkart, M.D. London: H. Milford. Oxford University Press. 1919. (Pp. 21, price 1s. 6d. net.)

SMALL-POX AND VACCINATION.

A REPLY TO DR. McVAIL.

BY

C. KILLICK MILLARD, M.D., D.Sc.

MEDICAL OFFICER OF HEALTH FOR LEICESTER.

THERE has been so little small-pox in this country in recent years that many medical men take but little interest in it, especially those of the younger generation, of whom not a few have never even seen a case. This fact makes the Milroy Lectures on "Half a Century of Small-pox and Vaccination," by Dr. J. C. McVail, one of our greatest living authorities, all the more welcome. There are certain points, however, raised by Dr. McVail, more especially where he refers to Leicester's experience and the question whether infant vaccination is still necessary, which are of such great and far-reaching importance that I beg leave to be allowed to deal with them.

In his first lecture Dr. McVail gave some very striking figures showing the truly remarkable reduction which has taken place in the mortality from small-pox. Thus, in successive decades the deaths have been:

1867-76	58.614
1877-86	18.026
1887-96	4.892
1897-1906	4.763
1907-16	139

Dr. McVail sums up as follows:

During the last half-century there has been . . . a great diminution in the fatality and in the infectivity and the prevalence of small-pox. This diminution has progressed at an increasing rate of speed. In the latter part of the half-century . . . the country has shown an unparalleled freedom from the disease. . .

I rather gather that Dr. McVail is coming to think it probable that small-pox, following the precedent of certain other diseases, is dying out so far as this country is concerned, and with that view I entirely concur.

I note with interest that Dr. McVail does not suggest that this is due to the practice of infant vaccination, and, in view of the fact that infant vaccination is being more and more neglected, such a thesis would now be very difficult to sustain. Yet in Dr. McVail's classical work, *Vaccination Vindicated*, published in 1887, he made use of the following table, taken from the Registrar-General, showing the small-pox mortality per million in successive periods, the object being to show that with the progressive efficiency of infant vaccination, small-pox had progressively diminished:

	Small-pox Mortality, all Ages.
(1) Vaccination optional (1847-53) . . .	305
(2) Vaccination obligatory but not efficiently enforced (1854-71) . . .	223
(3) Vaccination obligatory and more effi- ciently enforced by vaccination officers (1872-80) . . .	156

Dr. McVail quoted with approval the Registrar-General's commentary on this table:

The figures show conclusively that coincidently with the gradual extension of the practice of vaccination there has been . . . a gradual and notable decline in the mortality from small-pox at all ages.

And again:

The hypothesis that would explain the great fall in small-pox mortality by referring it, not to vaccination, but to general sanitary progress, must be rejected as utterly untenable.

If it could have been foreseen that at a later period a still more marked diminution in small-pox would have coincided with a greatly decreased efficiency of infant vaccination, the whole effectiveness of the table would have been completely destroyed. Yet at the time this table did seem most convincing; and I well remember in my early days making a lantern slide of it in order to illustrate an orthodox pro-vaccination lecture. From the propaganda point of view it was most "telling."

Dr. McVail has a good deal to say, favourable and unfavourable, about Leicester. He refers to the famous prophecy he made thirty-two years ago in *Vaccination Vindicated*, shortly after the town had decided to set the vaccination laws at defiance and to abandon infant vaccination. In that prophecy he not only foretold a repetition of seventeenth century experiences, when the time arrived, but called upon the Government to study and record the "catastrophe." How completely that prophecy was

mistaken Dr. McVail now, of course, admits. Small-pox has been repeatedly introduced into Leicester, sometimes in virulent form (in one outbreak there were 5 deaths out of 16 cases), and there have been three major epidemics; yet a reference to the figures given in Dr. McVail's first lecture will show how favourably Leicester compares with most other large towns, in spite of the fact that some 90 per cent. of the children born are not vaccinated. In one of the epidemics no less than 157 cases occurred in the short space of four weeks, scattered all over the town in 103 different streets. Dr. McVail says that we have never had a really infectious type of small-pox to deal with in Leicester. Surely that was a sufficiently severe test! Yet the outbreak was quickly got under control, and subsided almost as quickly as it arose. Again, in the peroration at the end of *Vaccination Vindicated* Dr. McVail wrote:

Among medical men there is, as has been well said, no vaccination question. They know the truth . . . so that it becomes the duty of those who know the value of vaccination, who understand the danger against which it protects . . . to teach their ignorant and misinformed neighbours what is in fact the truth about vaccination . . . the truth about a duty which cannot be neglected except at the price of infinite suffering and loss of life. Again I plead for instruction of the people in the matter of vaccination . . . but not . . . by leaving helpless children to die by thousands from small-pox, as assuredly they will die if a large unvaccinated community be permitted to grow up in our midst.

Dr. McVail observes that I have quoted from *Vaccination Vindicated* on more than one occasion, and it may be asked: Why rake up thirty-year-old prophecies which we all know now have not been fulfilled? The answer is: Certainly not in order to score off Dr. McVail, for whom I have the deepest personal respect, and who, after all, was only giving eloquent utterance to views which were held and expressed by almost the whole of the medical profession at that period. I frankly admit that at one time I myself was as firmly convinced of the danger of neglecting infant vaccination as any one. My real reason for recalling these mistaken prophecies is because, had it not been for prophecies such as these, confidently made and reiterated again and again by the highest medical authorities, the successive Vaccination Acts would never have been passed. It was because the magistrates of Leicester at one time firmly believed in such prophecies, whilst "ignorant and misinformed" people did not, that 1,154 prosecutions took place in Leicester in a single year, and that many people had their goods sold or went to prison. Altogether, in Leicester, until the town rose in revolt, over £2,300 was levied in fines, mostly from poor persons, for resisting the vaccination laws which were passed on the strength of these prophecies. I say unhesitatingly that if we had known then what we know to-day—if Dr. McVail's Milroy Lectures could have been published fifty years ago instead of yesterday—I do not believe that any of those people would ever have been prosecuted or penalized. And let us not forget that on the strength of those prophecies people are still being prosecuted to-day.

In his second lecture Dr. McVail deals with my contention that infant vaccination tends to spread small-pox by "masking" the disease. He does not deny this tendency or attempt to controvert it, but suggests that it would not be fair to allow children to be exposed to the risk of small-pox merely for the sake of possibly making it easier to control the spread of the disease. My answer to this is:

1. Laws passed by the State are for the sake of the community as a whole and not for the sake of the individual. If it should be true, as I suggest it is, that the balance of advantage so far as the community is concerned is against infantile vaccination, then although a private medical attendant might be justified—if the danger of small-pox were very real—in advising that an infant should be vaccinated (just as in the old days he might have advised inoculation, although against the interest of the community as a whole), yet certainly the State would not be justified in making infant vaccination obligatory under pains and penalties for default.

2. But I submit that the danger of an infant contracting small-pox is no longer real. It has become so remote (and this not because of infantile vaccination but because small-pox is leaving the country) that it is now a very debatable point whether the risk the infant runs from vaccination

is not definitely greater than the risk from small-pox. Moreover, one of the things we have learnt about small-pox is that where modern methods of prevention are carried out it is essentially a disease of adults rather than of children. It is spread in the factory, inn, lodging-house, etc., rather than in the home or school. (I am interested to learn that Dr. McVail, like me, has never had occasion to close a school on account of small-pox.)

Dr. McVail devotes a good deal of space to criticizing the so-called "Leicester Method," but I fear it would take too long to follow him in detail. Suffice it to say that "the proof of the pudding is in the eating." Personally I am quite content to speak only of "the modern method" of dealing with small-pox, and this, whether we admit it or not, places no reliance upon infant vaccination. The old talk about infant vaccination being our "sheet anchor" is now quite out of date.

As for the future, Dr. McVail is careful to make no more prophecies. He suggests the possibility of a serious recurrence of small-pox as a sequel to the war. He admits, however, that so far—except in much-vaccinated Germany, which has special difficulties to contend with from proximity to Russia—no recurrence has taken place. He emphasizes that in one respect we are better protected by vaccination than ever before, because of the vaccination of our troops during the war, but I would point out that the vaccination of our soldiers is recent adult vaccination, and constitutes no argument whatever for infant vaccination.

It is satisfactory to find that Dr. McVail is no longer seriously alarmed for the future, even if small-pox should recur. He writes:

If, however, small-pox were to invade this country, the measures at our disposal and our preventive equipment generally should enable us to deal with it, despite the fact that, on the whole, we are going back on, rather than developing, our position in regard to general protection obtained beforehand. [That is, in spite of the increasing neglect of infant vaccination.—C. K. M.]

This, of course, is a very satisfactory admission, and I trust it will be noted by all members of Parliament. He makes another significant admission which I trust will also be duly noted. At the end of his second lecture he says:

There is, however, one conceivable condition which would not only justify but demand the cessation of vaccination. If small-pox were to disappear, so also manifestly would the need for vaccination . . . if there were no need for vaccination it would have no value, and the marvellous decrease of small-pox . . . makes such a possibility, however remote still, yet apparently less remote than ever before.

I have said much the same thing in my book, *The Vaccination Question in the Light of Modern Experience*, only I go a little further, and say that as small-pox has already virtually disappeared so also has the need for infant vaccination. In this matter I am merely a few years ahead of Dr. McVail, that is all.

In conclusion, in order to prevent misunderstanding as to just where I stand, allow me to make my confession of faith. Vaccination, as a scientific operation for conferring complete though temporary immunity to small-pox upon the individual, will live for ever, and will always remain an outstanding achievement to the credit of British medical science. It will always be of the greatest service in combating outbreaks of small-pox whenever such may occur, and it robs such outbreaks of their chief terrors. But infantile vaccination as a State institution aiming at the universal vaccination of infants has been living on a reputation largely based on prophecies now proved to have been croneous; it is already discredited by large masses of the population, and is rapidly becoming obsolete. I submit that the time is ripe for a reconsideration of the question whether it is any longer really necessary.

THE HOSPITAL DEADLOCK IN TASMANIA.

THE island of Tasmania, which lies to the south of Australia, is about three quarters the size of Ireland, with rather more than 200,000 inhabitants. The executive authority is vested in a Governor appointed by the Crown, aided by a council of responsible ministers, at whose head is the Premier. The principal towns are Hobart, the capital, and Launceston; each has a general hospital with about 170 beds, the greater part of whose income is derived from a Government grant. The other hospitals of the island would appear to be comparatively small;

according to *Burdett's Hospitals and Charities*, much the largest of them is the Devon Hospital at Launceston, with 60 beds, also mainly supported by a Government grant.

For many months a dispute has been dragging on between the Government of Tasmania and the Tasmanian Branch of the British Medical Association. The conflict arose on a question of principle. The Government maintains that rich and poor alike have a right to admission into State-aided hospitals; the medical profession replies that the admission of well-to-do persons constitutes hospital abuse and cuts at the root of the system of attendance by honorary medical officers.

The story begins in June, 1916, with a letter from the Tasmanian Branch drawing the Premier's attention to the admission of well-to-do persons at the Launceston General Hospital, and asking for an inquiry into the alleged abuse. The Premier's reply contained a denial by the hospital board of the existence of abuse, and an assertion that any person had a right to the benefits of the hospital. Five months later a deputation from the Branch waited on the Premier and submitted evidence showing that by the admission of well-to-do patients poor patients were prevented from being admitted. The Premier contended that the hospitals were not for the poor only, but for the whole general public, who should have the benefit of the honorary services of the medical officers. A fortnight later the Premier was informed by letter that the situation created by the admission of well-to-do patients into State-aided hospitals was intolerable, and that a large meeting of the British Medical Association in Tasmania had resolved that if the Premier persisted in his policy the honorary system must of necessity cease. This brought a request from the Premier that the matter might remain in abeyance as he proposed dealing with it as a whole in the recess. On December 13th the Premier was asked by letter to prevent the admission of well-to-do patients pending full consideration of the hospital question; well-to-do patients were defined as those able to pay operation fees as well as maintenance fees. Nearly six weeks were spent in trying to extract a reply from the Premier, but the only result was a further request from him for the matter to remain in abeyance. On St. Valentine's Day, 1917, the Premier was told that unless he gave an assurance by March 1st that the abuse should cease the honorary staffs would be instructed to resign. The two next entries in the summary of correspondence are laconic: "February 16th. Let from the Premier asking questions." "February 24. Letter from Premier's secretary saying Premier Sydney."

March 13th came, but still the Premier was silent, and it was resolved to call on all honorary medical officers of State-aided hospitals to resign. Three days of grace were given. On the fourth day the Premier brought himself to the point of writing a letter to say that a full Cabinet could not come to a definite conclusion; and would the Association reconsider the question of resigning? A conference with the Premier on April 11th came to nothing—he would give no assurance. He wrote next day asking that his proposal "that the resignations be withdrawn pending the drafting of the proposed Hospitals Bill," should be placed before the members of the British Medical Association in Tasmania.

In the course of further correspondence the Branch asked the Premier for an assurance that he would introduce a clause in the Hospitals Bill excluding well-to-do patients from State-aided hospitals, to which the Premier rejoined that he was not to be "coerced by the British Medical Association bringing about a strike of medical men." A great many letters also passed between the Tasmanian Branch and the Secretary of the Hobart General Hospital. From the summary of these which we have before us, it appears that each side desired an amicable settlement, and that the Board of Management of the hospital was not unwilling to exclude wealthy persons from the benefits of the institution.

After May, 1917, several abortive conferences were held, and the Government finally drafted, and passed, a Hospitals Bill admitting rich and poor alike to the hospitals of Tasmania. In order to get over the difficulty of staffing the hospitals a Medical Act was passed permitting the admission of Americans to the Medical Register of the island. Much party capital has been made of the phrase "a strike of doctors," but the Tasmanian Branch of the Association made it quite clear from the beginning, and insisted

throughout, that it never was the intention of the honorary medical officers of any hospital to come out in a body and leave the patients with no one to attend them—on the contrary, they expressed their willingness to continue to attend after their resignations had been sent in until suitable arrangements were made, and to attend emergency cases when requested to do so by the resident staff.

It is difficult at so great a distance to pronounce judgement in a case of this kind. The feeling of professional kinship prompts us to take sides with the medical profession of Tasmania in its fight with the Government on a question of principle. The statement before us conveys the impression that the Tasmanian Premier is wanting both in statesmanship and in appreciation of the ideals and traditions of medicine. However provoking the dilemma in which it was placed by the solidarity of the local profession, the Government of Tasmania should not have gone to the length of passing an Act designed to introduce what is vulgarly called "blackleg" practice. It is to be noted that the honorary medical officers, although resigning their hospital posts, offered to assist when requested, but the offer was not accepted. A strike which is not a strike *à outrance* could not have called for the extreme measure of legislating to bring in medical men from a country with which Tasmania is not in medical reciprocity. It is hardly to be supposed that the best type of American practitioner will be attracted by the opportunities offered by the Tasmanian Government.

So much for methods. In former days it would have been easy to speak as positively on the question of principle upon which the whole dispute turns; but times have changed and new ideas are being discussed. The Tasmanian general hospitals are to a large extent State-supported, and it is hard to deny offhand the validity of the proposition that all persons have a right to their benefits. Nevertheless the honorary medical staff hold quite properly that their gratuitous services should be confined to the sick poor. Sir Bertrand Dawson, in his Cavendish Lecture on the future of the medical profession, laid down as an article of faith "that the best means for preserving health and curing disease should be available for (I do not say given to) every citizen, irrespective of his position, and by right and not by favour." The significance of the six words placed between brackets becomes evident when Sir Bertrand Dawson's article—

was applied to the case of the Tasmanian hospitals. As was said long ago, state aid when only applied to hospitals is incompatible with the honorary system. The deadlock in Tasmania is directly due to nationalization of the hospitals; it raises issues of the greatest consequence to the public and the medical profession of the British Empire. Such being the case we have little doubt that the Hospitals Committee of the British Medical Association will give it the attention which it deserves.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

A MEETING of the Executive Committee of this Fund was held at the offices of the *Lancet* on Wednesday, April 2nd, when the Treasurer announced that since the last meeting certain subscriptions had come in, notably a contribution of £500 from the South Australian Belgian Relief Fund, received through the Agent-General for South Australia. He pointed out also that when at the last meeting his statement showed a balance of £91 16s. 6d. to be remaining in hand, there was also to the credit of the Fund an additional £200, the monthly subsidy from the American Red Cross, though the sum had not at that time passed through the bank. The Fund therefore, he said, stood at £799 in credit. It was decided by the Committee to send to Belgium at once £700 in view of Dr. Pechère's statement recently published in the medical and pharmaceutical press, stating that help is still badly needed. A grant of £20 was also made to a Belgian doctor who has throughout the war been doing good service at a war hospital and who required the assistance on his return to Belgium.

The Chairman then, in the name of the Committee, presented Miss H. de L. Brock with a travelling clock as a personal gift from the members of the Committee and in some slight recognition of the great value of her services to the Fund.

THE CARLISLE EXPERIMENT IN LIQUOR CONTROL.

DR. HENRY BARNES, O.B.E., Carlisle, writes:

Two interesting reports on this subject have recently been published—one presented by the Chief Constable of Carlisle to the Mayor and Justices at the Brewster Sessions and the other the report of the General Manager of the Central Control Board (Liquor Traffic).

The Chief Constable states that the number of licensed houses in Carlisle is now 69, being 50 less than in 1915, a reduction of 42 per cent. There is now one licensed house to each 756.88 of the population according to the census of 1911. Three licences have been extinguished during the past year. No prosecutions against inn-keepers for offences against the Licensing Acts have taken place during the year. The number of persons proceeded against for drunkenness during the year was 88, a decrease of 241 compared with the previous year, and only 4 persons were convicted for assaults on the police, against 17 in 1917 and 37 in 1916. The number of convictions for drunkenness in Carlisle during the year is the lowest on record during all the years in which statistics have been kept. This remarkable diminution since direct control was instituted is attributed to three main causes:

1. Fewer houses with less temptations to drink.
2. Better supervision.
3. The scarcity of intoxicants brought about by the Food Controller's regulations and not confined to Carlisle.

The somewhat drastic rationing regulations which the Control Board put into force in May worked exceedingly well so far as public order was concerned, and except for the complaints as to general shortage there has been little ground for legitimate grievance. The Chief Constable testifies strongly that the arrangements made during the year worked with remarkable smoothness, and this contributed in a large measure to the gratifying reduction in the number of convictions. Attention is also called to the beneficial effects of increased sobriety, and, although no statistics can be produced, there has undoubtedly been a resulting improvement in the economic efficiency of the people and a reduction in misery, crime, and degradation of every sort, which can easily be imagined.

The third annual report of Sir Edgar Sanders, the General Manager of the Central Control Board (Liquor Traffic), contains many interesting observations. The area now under control extends to about 320 square miles with a population of 115,000, and contained 339 licences before the Board commenced operations in June, 1916. It was a most difficult problem to solve. Owing to the shell shortage in 1915, the Government decided to erect large munition works on the northern shore of the Solway Firth, about nine miles from Carlisle. Operations were begun on the site in the autumn of 1915, and speedily the district was crowded with large numbers of constructional workers brought from all parts of the country. Over-crowding became general, and the men, earning large wages and with few interests to fill their leisure, naturally turned to the public-houses; the result was that drunkenness became very common. This was especially the case on Saturday nights, when large numbers of these navvies came to the city to do their shopping and to seek amusement. In the words of an eye-witness:

Some five thousand of the said navvies nightly remove themselves from the scene of their labour to Carlisle, with the result that a once respectable city, chiefly notable for its Castle, its Cattle Market, and its hanging of rebels, has become a city of dreadful Saturday nights. . . . I have no need to penetrate the darkness, to paint you graphic word pictures of Carlisle's Saturday nights—of the inns where the men stand in solid formation to make massed attacks on the alcohol, and even stand in elevated echelon all up the staircases because there isn't room enough on the floor.

Among the early restrictions imposed by the Board were the cutting down of the hours of sale of intoxicants to 5½ daily; the limitation of "off" sales of spirits to the mid-day opening periods on five days in the week and to quantities not less than a reputed quart bottle; no treating; no credit; no hawking of liquor; no long pull; compulsory dilution of spirits; and the abolition of "bona fide travellers." Sunday closing was also imposed in the part of the area near the Border, but in February, 1919, it was abolished on the recommendation of the Local Advisory Committee, and so far this has been justified, as the convictions for the three months have only been 12 as

compared with 36 in the corresponding period of 1918. Further restrictions were, however, found to be necessary. Spiritless Saturdays were ordained; the "off" sales of spirits were restricted to fifteen houses instead of 100; grocers' licences were abolished; the sale of mixed drinks, locally known as "a heater and a cooler," was discouraged; sales to young persons were prohibited. Rationing became necessary as a result of the Orders of the Food Controller.

Table showing the Rise and Fall of Convictions for Drunkenness in Carlisle.

1914	...	...	...	...	275
1915.	First nine months	...	...	107	
"	Last three months	...	...	170	
1916.	First six months	...	...	564	277
"	Last six months	...	...	389	
1917.	First six months	...	...	229	953
"	Last six months	...	...	91	
1918	...	...	...	320	
				80	

The General Manager gives in his report interesting details of the constructive work of the Board. Recognizing that alcohol affects a hungry man more quickly than one who has fed, a supply of food was provided in many places where drink was sold. The result was not a great success. In a few cases, however, the sale of meat pies, bread and cheese, and the like, has been maintained with fair success. The Board's experiment with what is known as "food taverns" has been successful from the first, and during 1918 the takings for food at the seven taverns in Carlisle amounted to £16,370 and represented 33.4 per cent. of the total takings from all sources of such houses. The total takings for food at all the Board's managed houses increased during the year 1918 by no less than 67 per cent. of the corresponding total for 1917. This is partly accounted for by the fact that the number of hotels taken over was greater than in 1917. In order to meet the demand there might be for meals in country inns, a special room has been set apart where teas and light refreshments can be served, but a sufficient time has not elapsed to test the success of this scheme. A number of hotels have been taken over and put under management. The Board's property now includes 5 breweries and 279 premises which were licensed when acquired. Of these, 58 have been dislicensed, the Board retaining possession of the property; in addition 47 other licences have been suppressed without the Board becoming possessed of the premises concerned; 164 have been placed under management, and the other 57 remain for the present in the hands of the tied tenants.

The capital involved in the undertaking at March 31st, 1918, amounted to £835,053 3s. 5d., and the trading profits are returned as £201,726 17s. 5d., against which was charged proportion of cost of alterations and improvements to property and fixed plant amounting to £14,733 19s. 6d., leaving £186,992 17s. 11d. to be carried to profit and loss account. This surplus is equivalent to a total return of 15 per cent. per annum after writing off preliminary expenses and other special items. The profits from the inception of the scheme to March 31st, 1918, have sufficed:

1. To meet ordinary expenditure and depreciations;
2. To defray preliminary expenses and a large part of the cost of reconstructions;
3. To pay interest on the net sums issued from the Exchequer;
4. To replace upwards of one-fifth of the average capital.

There will be general agreement with a statement in the report that "the licensing problem is one of the most perplexing of all social problems. Its satisfactory solution has baffled succeeding generations of politicians." The Carlisle experiment has been attacked by the extremists on both sides. It does not please the prohibitionists and it does not satisfy the temperance faddist, and it is equally distasteful to the "trade," but it has shown that the liquor trade can be carried on subject to reasonable regulations without detriment to the well-being of the community and without undue interference with the liberty, tastes, and preferences of the large mass of the adult population. It has further shown that the transfer from private ownership to public control can be carried through without loss to the national Exchequer. Above all, it has offered a new solution of the problem of intemperance, and deserves the closest attention of all interested in dealing with one of the greatest evils of the day.

British Medical Journal.

SATURDAY, APRIL 19TH, 1919.

THE SPECIAL MEETING IN LONDON.

WE hear on many hands cordial expressions of the opinion that the British Medical Association, by the special Clinical and Scientific Meeting held in London last week, has earned the gratitude of the profession. The moment was chosen when the strain of active war was over and while yet many of our brothers of the Dominions were still in England and not a few of the officers of the Medical Corps, U.S.A. The invitation to attend was accepted by many of these officers, and many officers who are serving or have served in the R.A.M.C. during the war were present. Khaki was not the only wear, but it was worn by many; and let it be remembered that the khaki wearers of to-day and yesterday are going to determine the future of medicine in this and the next generation.

The work of the meeting was concentrated in a few sections and on a few subjects. These subjects were selected by the Programme Committee, under the wise and energetic guidance of its chairman, Colonel Adami of Montreal, because they made a present appeal and contained lessons from war experience for civil practice in the future. Those who accepted the invitation to open each discussion had themselves all been in close contact with the subject in hand; in general they obeyed the injunction to be brief in the written word and still briefer in the spoken, and there was thus obtained a vivid presentation of the ascertained facts and a bold handling of disputed points which stimulated later speakers to express assent or dissent with equal directness. Time was not expended on academic formulas before coming to essentials. If occasionally there was some little heat it was, we believe, as that of the lamb-like Brutus,

That carries anger as the flint bears fire,
Who, much enforced, shows a hasty spark,
And straight is cold again.

The President of the Association, in his short speech at the dinner, crystallized the opinion of all those best able to judge when he said that never before had there been a concourse of the kind which showed such thorough earnestness, businesslike determination, and scientific enthusiasm. Many also will agree with him in thinking that similar concentration in future annual meetings is desirable, so that the whole strength of the Association could be thrown for the time being into certain specific channels of research and observation; and will agree with him also in believing that more progress would be achieved on this plan than from desultory discussions over a large area of subjects. Sir Clifford Allbutt, as no other man in medicine, combines the backward glance of long experience with the forward vision of youth, and we make no doubt that his opinion will weigh strongly with those to whom will be entrusted the organization of the annual meeting over which he will preside at Cambridge next year.

The proceedings of the meeting last week will be published in a separate volume, which will be forwarded to every one who attended the meeting whose address is known, and to all members of the Association.

SHORT NOTES ON THE SECTIONS.

DISCUSSION ON INFLUENZA.

A VERY large audience met under the chairmanship of Colonel Haven Emerson, U.S.A. Medical Corps, to take part in the discussion on influenza at a joint meeting of the Sections of Medicine and of Preventive Medicine and Pathology on Thursday morning, April 10th.

Major-General Sir Wilmot Herringham opened the discussion by giving an outline of the epidemic as met with in France from its first appearance as a mild and transitory fever in May. He traced its spread with gradually increasing virulence through the July epidemic, when pulmonary symptoms first appeared, to be followed by a most severe outbreak in September, with a mortality of 5 per cent.; this, subsiding in January, was followed by a third wave, beginning in March, but of lesser severity and incidence. He pointed out that two factors—namely, the immense and sudden incidence and the course of the disease—suggested a different disease from that which we had been accustomed to previously. He dwelt on the disproportion between the cyanosis and clinical signs and the later appearance of a severe albuminuria, while in the third epidemic jaundice became an associated symptom. He touched on the various symptoms of each epidemic, but as these were detailed in the printed reports, which were obtainable, he did not dwell on them. As to treatment he was not hopeful. He had not found anything that approached a specific remedy, though a large variety of methods had been tried, including vaccines and even the serum of convalescents. In conclusion, he thought that these so-called influenza cases were of the same character as those seen in previous winters, but especially in 1916-17. Recalling the epidemic of 1889, characterized by its harmfulness to the young, the infrequency of severe pulmonary complications, and the frequency of severe nervous sequelae, he questioned whether the present disease was influenza at all, or, if so, whether it had not considerably changed its character since then.

Captain M. Greenwood then dealt with epidemiology, in a paper that scarcely lends itself to summarization. By comparing the records of a mixed artisan population and a military population of adult males in the same period he concluded provisionally that there was no clear-cut formal difference between the outbreak of 1889-90 and that of 1918, nor between its evolution in a mixed population and in one homogeneous with respect to age and sex. He suggested the existence of a double periodicity to be referred to the coexistence of two distinct strains of infecting organisms. Lastly, he dealt with the question of acquirement and loss of immunity in relation to the facts, and concluded that there was nothing opposed to the common-sense belief that the scale of the recent epidemics has been magnified by unfavourable hygienic conditions, to which the majority of the world had been recently exposed.

Major Bowman, C.A.M.C., was kept away by illness, but in his paper he dealt with etiology, and summarized the bacteriological investigations and then his work with a filtrable virus obtained from sputum and blood used to inoculate monkeys and to obtain cultures. He had succeeded in cultivating an organism to the fourth generation from tissues of infected animals, and this in experimental animals produced lesions closely resembling influenza in man. The preliminary note on his experimental work has already been published (BRITISH MEDICAL JOURNAL, December 14th, 1918). In the absence of Major Bowman, Colonel Adami summarized the work of the committee, and Captain O'Connor showed lantern slides illustrating the changes in experimental monkeys, and compared them with human tissue. In the animal

lungs was a strikingly characteristic engorgement and exudation into the alveoli; with, in places, actual solution of the alveolar walls.

Surgeon Captain P. W. Bassett-Smith, R.N., dealt with the methods employed in the navy. He pointed out the severity of incidence on board ships, there having occurred 80,000 cases in the navy in the year. He produced statistics of preventive vaccination amongst the men. Colonel A. B. Soltan commented on the clinical manifestations of the various waves of the epidemic and its spread from the Second Army to the First. Major Norman White, I.M.S., spoke of the epidemic in India as unparalleled in its incidence and severity, in British India the death-rate having totalled 20.7 per mille in a population of 238 millions, and in Bikanir it reached 89.5 per mille. Lieut.-Colonel Greig, I.M.S., also spoke of his work in India from a bacteriological standpoint. Only two bacteria were found in the sinuses of the respiratory tract—namely, Pfeiffer's bacillus and the pneumococcus. In the enlarged bronchial glands Pfeiffer's bacillus was also found. Dr. W. J. Tyson compared the various epidemics he had passed through since 1878; he described the one under discussion as unique, and doubted whether it should be labelled influenza. Major Michael Foster gave the results of protective inoculation and considered that the evidence of its utility was extremely slender. Lieut.-Colonel G. B. Foster, U.S.A., dealt in general terms with the filtrable virus. Major Tytler, C.A.M.C., who had worked at Boulogne, said he had recovered Pfeiffer's bacillus in 93 per cent. of cases. He held that the question of secondary infection was the most important from the standpoint of mortality. Major Patterson touched on the work in Rouen, and summarized a valuable paper dealing with bacteriology and morbid anatomy, dwelling on the importance of Pfeiffer's bacillus as a secondary infection. Mr. E. B. Turner strongly urged the use of salicin as a certain cure when used in the way he outlined. Lieut.-Colonel Gordon Gullan dealt with the epidemic in Gibraltar, and considered it the same disease as seen in 1889-90, with which also he included the majority of cases of trench fever. Colonel Homer Swift, U.S.A., spoke of the necessity of segregation of influenza cases, which, together with early hospitalization and the minimum of treatment, he held to produce the best results. Dr. R. J. Ewart, discussing epidemiology, held that the epidemic period and its virulence really formed an object lesson in evolution.

Many other speakers were awaiting an opportunity to participate in the discussion, but as it was obviously impossible to exhaust the subject matter in so short a session and the time limit had passed, the Chairman brought the proceedings to a termination.

VENEREAL DISEASE.

A FULL house attended the discussion on venereal disease in the Section of Medicine on the morning of April 11th. The chairman, Sir William Osler, in a pithy introductory speech, laid down four lines for future progress. First, venereal disease must become notifiable, just as is tuberculosis; secondly, the precise prevalence of both gonorrhoea and syphilis in communities must be carefully studied, for we can at present only guess at the number of infected persons. Thirdly, preventive measures more successful than those we have at present must be contrived; and, finally, the efficiency of the various treatments employed must be both studied and improved.

Brevet Colonel L. W. Harrison gave a summary of his introductory address printed in full in the *Handbook of the meeting*. He emphasized the desirability of indirect work, free from the antivenereal label, in the further

struggle against these diseases; the importance of local treatment at the earliest possible moment; and the need for some new remedy against gonorrhoea acting not locally but through the blood—possibly an improved vaccine?

Colonel Ashburn, U.S.A., stated that of the 10 millions or so male inhabitants of the United States aged between 21 and 30 approximately 1 per cent. had recently been found to have venereal disease. In a very sound and sensible speech he sketched the antivenereal measures employed in the American Expeditionary Force; promotion of continence and the best available prophylaxis being chiefly aimed at. The haunts of prostitutes were put out of bounds to all American troops; as for continence, the incidence of venereal disease was about 4 per cent. in these troops; prophylactic measures had been employed by about half the men infected, and their adequate adoption was very truly said to lie in the hands of the company officer rather than the medical officer. Colonel Ashburn expressed doubt as to whether venereal patients in the army should in any way be punished as such, and he concluded that the best antivenereal measures that could be taken were four—(1) moral education, (2) the suppression of prostitutes, (3) prophylaxis after irregular intercourse, and (4) punishment of the offenders. Captain McDonagh emphasized the differences likely to occur in the mass treatment of civil as compared with military venereal patients, and dwelt on the advantages of intramine and colloidal manganese as antivenereal drugs.

Colonel Bolam discussed the undue prominence given to jaundice as a complication due to treatment with arsenic compounds in syphilis; jaundice occurred in 115 out of nearly seven thousand patients thus treated, with 6 deaths, and he showed that the occurrence of such jaundice depended on the size and spacing of the doses to a large extent. Only 43 cases of dermatitis had occurred in 9,379 patients given arsenobenzene, with 2 deaths.

Major Peyton detailed the spacing and dosage he had found best in the treatment of syphilis; the combined intravenous and intramuscular injections, as first used in August, 1917, and since employed in 3,500 cases, yielding 18 clinical relapses and not many complications. Lieut.-Colonel Scott Jackson, in a breezy and emphatic address on the prophylaxis of venereal disease, anticipated no difficulty in applying the necessary compulsion to the civil population, calling upon medical men to give a clear lead here. He advocated strongly the distribution of prophylactic outfits to those about to expose themselves to possible infection; such outfits making men hesitate, rather than increasing the feeling of security. The object of propaganda should be to increase continence. Surgeon Commander Robley Browne gave an account of the antivenereal system employed in the navy, and asked for information as to the therapeutic value of galyol, which he was inclined to rate not very high. Major McGregor praised colloidal manganese in the treatment of gonorrhoea; intramine, he said, was of service in such conditions as syphilitic glossitis and stomatitis; in 20,000 injections of arsenobenzene he had met with 43 complications and no deaths. Lieutenant McLeod doubted whether Colonel Harrison did full justice to the importance of the early treatment of gonorrhoea, and stated that he had obtained good results with McDonagh's methods in a first series of cases of gonorrhoea.

Colonel MacWhae, A.A.M.C., described the method of prophylaxis used in the Australian forces in France. A colossal amount of prophylactic treatment had been undertaken; he described the policy of early treatment centres, where eight days of treatment were given in the line without sending the patients to hospital or docking their pay, followed by nine days of observation, in which relapse meant sending the patient into hospital. About

2,000 cases had occurred in a total of 100,000 men. The full time allowed for it having elapsed, the discussion then closed.

PROGNOSIS IN CARDIO-VASCULAR AFFECTIONS.

THE Chairman, Sir James Mackenzie, briefly indicated the importance and obscurity of the subject under discussion, as shown by the great difficulties that had been encountered in categorizing recruits. Dr. Lewis gave a general introduction to the subject in a paper which had been printed beforehand. He mentioned that there were now about 70,000 ex-soldiers pensionable for cardio-vascular disease, of whom from a third to a half were suffering from their disability when they were allowed to enlist. He dwelt on the practical importance of heart disease without physical signs, but with incapacity for exertion, detectable only by the systematic employment of exercise tests. Such tests, he added, would in future be of use to pensions boards, and should be available also as the criterion of fitness for dismissal from hospital in the case of civilian patients.

Professor Wardrop Griffith described the methods employed in the Northern Command for dealing with all sorts of cardiac lesions, D.A.H., and cardiac irregularities. The most difficult cases to assess were, he said, those with a systolic apical bruit and doubtful signs of hypertrophy. He also described as probably indications of early mitral stenosis the presence of an abrupt first sound and a double diastolic sound—excluding from that the reduplicated second sound. Captain Levine, U.S.A., pointed out the advantages with which enlistment had started in the United States; every use was made of Dr. Lewis's pioneer work, and invalidity for cardio-vascular disease had proved proportionately rare in the U.S. army. He estimated that about 5 per cent. of the 10 million males aged 21 to 31 in that country had some degree of D.A.H. in civil life. In gassed patients in France he had seen much temporary D.A.H., which was apt to disappear when he got them "liking a bit" and doing calisthenics. Captain H. J. Starling laid stress on the association of D.A.H. with emotionalism, and also with toxæmias resulting from such infections as trench fever, influenza, and rheumatic fever. Rest in bed was, he had observed, the worst treatment for D.A.H.

Colonel Rudolf, C.A.M.C., praised the systematization of physical tests by Dr. Lewis, and attributed much of the trouble in D.A.H. to neurasthenia. Colonel J. Hay gave an account of the cardiac work in a command, and pointed out that Dr. Lewis's most valuable methods of training would be less easy to apply in the case of civilian patients; group training was, in the same way, hardly applicable to officers with D.A.H. The more difficult cases he had met with were those of the frankly neurotic patients, and those with what he believed to be chronic apyrexial infections. Cardiac training methods should be in the hands of optimists and believers only. Major Cottin detailed some interesting observations on the pulse rate in various classes of V.D.H. and D.A.H.

Dr. J. E. MacIlwaine gave an excellent account of the treatment of D.A.H. at a base hospital in France. He laid great emphasis on the importance of mental stress in the production of D.A.H., and noted that "fitness" in the army sense meant capacity for endurance. Dr. Leslie wished that clinical teachers could give better instruction in the matter of prognosis in heart disease. Captain Edgecombe described a case of D.A.H. that must, he thought, be due to a low and chronic form of cardiac infection; he spoke of the importance of the psychological factor in this condition, and put in a plea for uniformity in the scheme of exercise tests that would have to be employed by pensions boards in the future. For recording personal impressions as to heart sounds he had found the terms of classical

metres useful—iambic, trochaic, spondaic, dactylic, and the like. Dr. Lewis replied briefly, and the well attended meeting closed.

MALARIA.

ON Friday morning, in the Section of Preventive Medicine and Pathology, a discussion took place on malaria, under the chairmanship of Sir Ronald Ross. Lieut.-Colonel S. P. James, in opening the discussion, referred chiefly to the risk of spread of malaria in England and the measures necessary to prevent it. Since the autumn of 1917 some 326 cases of locally contracted malaria had come to notice in this country, 224 of them being in the army, 34 in the navy, and 68 in the civil population. These cases occurred under conditions in which most of the human malaria carriers in England were concentrated in a limited number of military areas. With demobilization this condition would be changed, in that these malaria carriers would be scattered throughout the country each in his own home. During March this year the Local Government Board received notifications of 600 cases of malarial attacks in demobilized soldiers living in 278 towns or villages in 47 counties. Anopheline mosquitoes were known to occur in all those localities—which were therefore places where there was a potential risk of new cases occurring. It might further be inferred that this potential risk existed in nearly all rural areas in the country. But in any locality, in order to convert the potential risk into an actual one, something more than the presence of relapsing malarial cases, anopheline mosquitos, and susceptible persons was necessary. Colonel James suggested that in England this further essential factor—the factor which actually determined whether or not new cases of malaria would occur in a locality—was neither the abundance of anophelines in the locality generally, nor of malaria carriers, but the degree to which there was close and continuous association between malaria carriers, anophelines, and susceptible persons. In connexion with this view he drew attention to the contrast between the conditions, on the one hand, at Epsom, where, in a locality infested with anophelines, a great concentration of malaria carriers was not followed by the occurrence of new cases of malaria; and, on the other hand, at Queenborough town, where, with comparatively few anophelines and only isolated carriers scattered in different houses in the town, quite an epidemic of locally contracted malaria occurred. Observations showed that at Queenborough there was very close and continuous association between the carriers, the anophelines, and susceptible persons, but that this was not the case at Epsom. In explaining the circumstances in which the necessary close association occurred, Colonel James suggested a new view of the habits of female *Anopheles maculipennis*—namely, that these insects, after being fertilized, sought first, not a meal of blood, but a place suitable for permanent stay. Such a place was found most often in cowsheds, but certain types of dwelling-house were also sufficiently suitable, and only such houses provided conditions favourable to the degree of close and continuous association necessary for the origin of new cases of malaria. On this view the prevention of malaria in England was a problem in connexion with housing conditions, as well as with other circumstances. In regard to necessary measures of prevention and control, Colonel James thought it most important that in every reported case of malaria sufficient inquiries should be made to ensure that every case of indigenous origin came to light as soon as possible, so that appropriate action might be taken at once if there was a definite focus of infection. It was important also that as far as possible thorough inquiries should be made into each case of relapse among demobilized soldiers, and that there

should be proper arrangements to provide those patients with adequate treatment, and with education in, and facilities for carrying out, the measures which they should adopt to prevent the infection of other members of their household. During these inquiries it should be possible, by carefully examining the house occupied by a malarial patient, to foretell whether new cases were likely to occur in the house, and to take proper steps to prevent them. [These steps are detailed in the General Order by the Local Government Board which came into force on March 1st, and they will be further emphasized in an official pamphlet by Sir Ronald Ross and Colonel James which is about to be issued by the Ministry of Pensions to medical practitioners throughout the country, and in a forthcoming Local Government Board report on the occurrence of locally contracted malaria in 1918.]

Surgeon Captain Bassett-Smith analysed the work in the navy, where there had been an unusually high incidence during the war, though in 1918 there was an enormous reduction, due to antimalarial measures having been taken. Intravenous injections of arsenic and antimony he described as non-curative. He instanced indigenous cases occurring at the Isle of Grain and at Eastchurch, all due to *P. vivax*, and summarized the measures taken on demobilization. Captain Angus Macdonald discussed the antimalarial measures in England, and said transmission was only likely to occur in places where the mean temperature reached 60°, as in the South of England in August, but very unlikely north of the Humber, except in overheated houses. He could not give any explanation of the sudden disappearance of malaria in this country. He adduced evidence showing the value of definite sanitary operations in England in the prevention of malaria. Major-General Sir Hayward Whitehead touched on malaria in Macedonia, where prophylactic quinine had been absolutely useless whilst sanitation had been all-important. He desired further knowledge on the flight of mosquitos. Lieut.-Colonel Andrew Balfour spoke in favour of quinine prophylaxis, which he held was a question of proper administration. Though not infallible, he said it was a valuable auxiliary treatment, and, indeed, in war time often the only method available. Dr. Malcolm Watson was quite sanguine about the possibility of epidemics in England and held that there was no danger under the present system of drainage. In his experience quinine prophylaxis had been a bitter disappointment. With this latter view Dr. Willoughby agreed, basing his views on an extensive experience in Egypt. Major Urquhart touched generally on malaria in Macedonia, and mentioned some work by Colonel Dudgeon on the destructive action of intramuscular injections of quinine, which contraindicated this method of administration. Mr. Bacot (Lister Institute) described his work with various culicifuges, none of which retained their activity for more than two hours after application. Dr. Murray had used a large variety of drugs, including the arsenical products and proprietary remedies, but none was found to be parasitidal. He had obtained the best results with oral administration of quinine for many weeks. Captain John Thomson supported the oral method of administration, and had found quinine sulphate as satisfactory as any of the salts, whilst kharsivan also was an effective parasiticide. Mr. Carleton, to explain the comparative tolerance to large numbers of parasites in certain cases, suggested the production of antibodies, and mentioned some experiments with staphylococcal vaccines at Oxford.

Dr. Buchanan briefly summed up the work of the Local Government Board, which has been in active co-operation with the workers in this country during the war, but he did not think it justifiable to ask local authorities to start special antimosquito or antimalarial measures in the light

of present knowledge. Sir Ronald Ross wound up the proceedings with a summary of the war experiences. He had evidence to support his "anti-relapse prophylaxis," but did not favour any drastic "sterilizing treatment." He suggested that quinine was not a direct parasiticide, but that it only stimulated some natural antibody which destroyed the parasite.

FILTER-PASSING VIRUSES.

THE final hour of Friday's session was taken up by a brief account of six new viruses which would appear, from evidence adduced, to be the causal agents of polyneuritis, encephalitis, trench fever, influenza, nephritis, and rabies. Sir John Rose Bradford introduced the subject with a statement as to the events leading up to the discovery, a reference to the work on polyneuritis already published, and his reasons for holding that these were new and specific organisms which carried out to the full Koch's postulates. Captain E. F. Bashford then described his experiments on monkeys with the organisms in question, and demonstrated the lesions produced. The lesions in experimental influenza he described as being those characteristic of uncomplicated cases in man. Captain J. A. Wilson then described his method of obtaining pure cultures from tissues of patients after the principles of Noguchi, and detailed the six varieties, which he described as distinct entities and all filter passers. Lieut.-Colonel Foster, U.S.A., congratulated them on the striking results, being specially impressed by the careful controls with which Captain Wilson had surrounded his work. Sir William Leishman also spoke of the high opinion he had learnt to set on the work of Captain Wilson even before he undertook this research.

DEMONSTRATIONS.

MALARIA.

THE London School of Tropical Medicine, on April 9th, gave an interesting and instructive exhibition at Endsleigh Palace Hotel, showing under the microscope all the stages of the malarial parasite in the peripheral blood and the internal organs. Dr. J. Gordon Thomson, the protozoologist to the school, showed under the high powers of the microscope the three species of malarial parasites which infest man, and by a beautiful series of specimens was able to illustrate the whole life-cycle of the parasite in the human body. The slides of special interest were those illustrating the life cycle of the malignant tertian or sub-tertian parasite, and specimens were shown of this organism illustrating the life-cycle in the brain, spleen, liver, bone marrow, and intestine. Malignant tertian parasites sometimes produce coma, and a beautiful film was shown from the brain of a fatal case illustrating the fact that the capillaries of the brain are blocked with parasites during this condition. The cultivation of the malarial parasite *in vitro* was also illustrated by two remarkable slides, proving that it is possible to obtain in a culture tube the complete life-cycle of the malarial parasite as it occurs in the human body. These cultures were made by Dr. Thomson, and illustrated the fact that malignant tertian parasites, when partially or fully grown, tend to clump together in masses and so block the capillaries of the internal organs. A series of slides was shown demonstrating the sexual phase of the parasite, which occurs in the anopheline mosquito, and so transmits the disease to man. Colonel Alcock, entomologist to the London School of Tropical Medicine, showed specimens of the mosquitos which carry malaria to man. The demonstration was accompanied by a series of paintings which enabled those interested to study the specimens thoroughly. The demonstration was arranged for the School of Tropical Medicine by Dr. Newham, Colonel Alcock, and Dr. J. Gordon Thomson.

INTRAMUSCULAR QUININE.

Colonel Leonard S. Dudgeon, C.M.G., A.M.S., gave a demonstration on Thursday, April 10th, at St. Thomas's Hospital, on bacillary dysentery and on the effects of intramuscular injections of quinine when employed for therapeutic purposes in malarial cases and when given experimentally in animals. Coloured diagrams, naked eye and microscopical preparations and charts were shown to illustrate the various points, while records of the chemical examinations of the injected muscles were shown to illustrate how rapidly the quinine was absorbed from the necrotic tissues. The main conclusions arrived at were as follows: That intramuscular injections of quinine should be reserved for special cases, as many reliable authorities have advocated, and should not be made a more or less routine procedure. That the injections should not be made in the arm or in the vicinity of an important nerve trunk or repeated too frequently in the same area. That concentrated, or dilute solutions such as are of practical utility, produce necrosis in all instances when injected into the tissues, and all preparations produce a similar effect. Colonel Dudgeon said that lack of knowledge concerning the bad effects of intramuscular injections was responsible for some of the disasters that had followed this method of employing quinine. The thousands of injections given without any apparent ill effect on the tissues, with, on the other hand, beneficial action on the cases of malaria, was sufficient reason to continue this method in selected cases.

LISTER INSTITUTE.

On Friday, April 11th, the demonstrations at the Lister Institute attracted a very large gathering. Sir John Rose Bradford and his co-workers, Captains Bashford and Wilson, exhibited the cultures and stained films of their newly described viruses, together with specimens, naked eye and histological, from animals which had been infected with influenza, nephritis, and encephalitis. There were also coloured plates and photographs, and the materials from which had been prepared the already published work on polynuritis. Much discussion centred around these preparations. The pathological anatomy of influenza as it occurs in the human subject was shown in a series of specimens by Major S. W. Patterson. Macroscopic specimens of the lungs from cases dying early in the disease preserved in natural colours the characteristic massive congestion and haemorrhagic oedema; and numerous types of secondary bronchopneumonia were shown. Microscopic preparations from the lungs in all stages of the disease were demonstrated; and the toxic effect of the etiological factor was illustrated by specimens of liver, kidney, heart muscle, and bronchial mucous membrane. A fine set of microscopic preparations, made by Dr. J. A. Murray from cases collected by Major Cookson, was also shown.

Captain J. I. Connor and Major F. B. Bowman also showed cultures of a virus obtained by Noguchi's method from influenzal tissue, together with lungs of monkeys and guinea-pigs infected with filtered sputum. Sections of these lungs were shown, also guinea-pigs which had been inoculated with blood from influenzal cases with a resulting pulmonary lesion. Mr. A. Bacot and Dr. Arkwright demonstrated films and sections of lice infected with trench fever and typhus fever, showing the rickettsia bodies associated with these two diseases. Dr. Kettle had on view coloured plates and slides from cases of gas gangrene, and in an adjoining room was a large collection of anaerobes in various media. With these were some guinea-pigs killed with *Vibrio septique*, *B. welchii*, and *B. oedematiens*, and adjoining each the living guinea-pig which, preparatory to receiving the same lethal dose, had received a dose of the corresponding antiserum; also some histological specimens of the tissues of the experimental animals; and, finally, of value to the practical worker, McIntosh's and Fildes's adaptation of Laidlaw's method

of obtaining anaërobiosis by means of finely divided platinum chloride.

Colonel C. J. Martin and the Institute entertained the visitors to tea in the library.

AIR FORCE TESTS.

Captain Rippon gave an interesting account, at the house of the Royal Society of Medicine, on April 11th, of the tests of physical efficiency applied to candidates who would be pilots; these tests in no way took the place of examination by a clinician, but were of service in indicating when he should be called in. Various tests that had been found good were described.

(1) Breath-holding; persons unable to take in a deep breath and hold it for over 34 seconds are unfit to fly at high altitudes, and there should be no dizziness or mistiness before the eyes at the end of this test.

(2) Expiratory force test; the candidate blows down a mercurial U-tube manometer, and a fit man should pass 110 mm. Hg pressure; the unfit may reach 70 or 100.

(3) A modification of (2), in which the lungs are filled with air, the mercurial manometer is blown into, and the pressure is maintained at 40 mm. Hg, while the pulse is taken every five seconds. In this test a physically fit man will hold the pressure for perhaps fifty seconds or more, while his pulse-rate gradually rises. An unfit man will hold the pressure for only twenty or thirty seconds, and his pulse-rate may either rise suddenly and then fall, or fall steadily as the test proceeds. A tired man will, of course, behave as an unfit man, and many interesting graphs illustrating this and similar points were thrown upon the screen.

(4) The pulse-rate before and after exercise. The technique adopted in this test is to take the pulse-rate while the candidate stands, then to have him step up on to a chair and down again five times in fifteen seconds (taking the pulse-rate meanwhile), and finally to note the return of the pulse-rate to its previous figure. In the test thus carried out the pulse should rise 15 to 20, and return to the normal in 20 seconds; a rise of 25 or more indicates unfitness.

(5) Ability to hold the breath after exercise; exercise lessens this ability, and a good result would be, say, 55 seconds, whereas 20 seconds would be a bad result indicating unfitness.

(6) The vital capacity, as measured in the common spirometer; a good pilot has at least 3,800 c.cm. as an average. A modification of this test measured the vital capacity under pressure; the two readings should be about the same in a fit person; the vital capacity under pressure fell off in the unfit.

(7) Tremor: this is neglected if slight, but is a sign of unfitness if coarse.

(8) Equilibration: the candidate stands on one leg with the eyes closed. This simple method of examination is found to correlate with the other tests of physical fitness. Further tests employed are those for reaction time (the pendulum myograph), acuity of vision and hearing, and muscular sense.

Photographic slides of machines for testing the "lightness" or "heaviness" of candidates' hands on the "joy-stick" and his power of equilibration, were also exhibited.

Major Clements described an ingenious machine for testing distance judging, a faculty of great importance in effecting aeroplane landings. It was found that myopic people tended to effect their landing below ground, hypermetropes in the air above it, through difficulty in estimating their distance from the face of the earth. This machine measures the error of the candidate in adjusting a movable upright knitting needle at the same distance from him (16 ft.) as a fixed needle, without help from shadows adjoining objects of known size and the like. A demonstration of oxygen-breathing apparatus for fliers at high altitudes was given also, the pure oxygen being carried up either compressed, or in the liquid form.

METHODS OF CARDIO-DIAGNOSIS.

The electrocardiograph was the *pièce de résistance* given by the members of the staff at the National Heart Hospital demonstration on Thursday, April 10th. Dr. Russell

Wells gave an explanation of its theory and use, and an interpretation of the photographic records obtained from it, in such a way as to prepare the large audience for subsequent speakers, who pointed out the utility of the instrument in the diagnosis of various obscure but important cardiac lesions. Dr. Wells also took the opportunity to throw upon the screen an electrocardiogram believed to be the first recorded of its kind: one in which the apex of the heart appeared to be in electrical continuity with the left arm, and not, as is normal, with the left leg. The base of the heart was, as is usual, in electrical continuity with the right arm. Dr. J. S. Goodall explained the manner of interpreting various electrocardiograms taken from patients with such common abnormalities as hypertrophy of the right side or left side of the heart, and with the normal irregularities of cardiac action attributed to special susceptibility of the cardiac muscle to nervous control. He also showed an electrocardiogram from a case of partial sino-auricular heart-block simulating sinus arrhythmia, and others in which the electrocardiograph proved to be the only instrument capable of demonstrating the presence of localized patches of myocarditis—one, for example, from which a lesion of the right bundle of His could be diagnosed. Dr. R. O. Moon described the light thrown on bradycardia by the employment of the electrocardiograph, particularly in cases of delay in the conduction of the impulse to contract through the bundle of His and its associated conducting system. Many cases of bradycardia, as is well known, are attributable to partial or complete heart-block, partial or complete lesion of this conducting system. Dr. P. Hamill gave an excellent analysis of the various occasional irregularities observed in the heart's action; some of these are, of course, normal, and he emphasized the importance of the electrocardiograph in the accurate diagnosis of the cause of these occasional irregularities. Dr. F. W. Price gave a clear account of three serious disorders of cardiac action—namely, auricular fibrillation, auricular flutter, and paroxysmal tachycardia; the presence of the first of these he described as the cardinal indication for the exhibition of digitalis. Demonstrations of the various newer methods employed in the diagnosis of cardiac disease or insufficiency were also afforded. The employment of the electrocardiograph was explained by Dr. Wells and Dr. Hamill, with illustrative cases. Dr. Gibbs illustrated the use of the x rays and the interpretation of skiagrams of the heart; Dr. Price showed the polygraph; Dr. Goodall and Dr. Wells explained the method and utility of systematic records of the arterial blood pressure, and the reaction of the heart to the demands of physical work. In the pathological department Dr. Moon exhibited a number of interesting *post-mortem* specimens.

ORTHOPAEDIC METHODS.

The demonstrations arranged at the Special Military Hospital at Shepherd's Bush dealt with the orthopaedic methods there adopted. Visitors were given an opportunity of seeing the end results of treatment of various deformities, such as fractures and ankylosed joints, the results of bone-grafting and nerve suture, and the various appliances and supports that gave the patient the maximum of comfort and usefulness. The cases here shown were those fit for discharge. In the other departments demonstrations were given of the many different means adopted to contribute to the final result. In the large gymnasium, with its special apparatus, the instructor conducted individual classes for the re-education of muscles and superintended exercises for deformities. Here one was impressed by the concentrated application of the patients to their particular exercises, a state brought about by a combination of genial discipline and sympathetic encouragement. In the well-equipped bath department the medical officer in charge explained the uses of contrast hot and cold baths, douches, whirlpool baths, aerated brine

baths, and paraffin baths, which were employed in conjunction with massage and electrical treatment in the restoration of muscle function. In the Electrical Department demonstrations were given of the electro-therapeutic methods used for the maintenance of muscle tone and the treatment of nerves before and after suture, after being freed from scar tissue, or after nerve grafting. The technique of plaster splinting and fixation and of plaster casting, the special table on which patients lie when corrections are made previous to the application of plaster splints, and the latest surgical instruments employed in bone surgery were the subject of interesting demonstrations. Finally, the workshops where men were taught useful occupations in which they were not unduly handicapped by their disability gave an indication of the enterprise of this wonderful hospital, which owes so much to the stimulating influence of Sir Robert Jones.

HOSPITALS FOR LIMBLESS CASES.

Sir John Lynn-Thomas, K.B.E., C.B., C.M.G., deputy inspector of military orthopaedics, gave a cinematograph lecture at the Imperial College of Science, South Kensington, on Thursday afternoon, April 10th, on the organization of a hospital for limbless cases. Speaking from his experience of the foundation and organization of the Prince of Wales Hospital for Limbless Sailors and Soldiers at Cardiff, he said that the principles governing the construction of such a hospital differed from those which obtained at general hospitals because the condition of the patients was different. The hospital at Roehampton, established in the middle of 1915, made history by beginning to work out the problem of artificial limbs by means of a new team of workers, consisting of the orthopaedic surgeon, the limb maker, the mechanical engineer, and the patient. The idea governing the organization of a hospital for the limbless must be to put the man while there under conditions which would prevail when he went to his own home; for instance, it was unnecessary and unwise to provide lifts. The hospital must have suitable training grounds for men with artificial legs, and for those with artificial arms. The need for proper provision for limbless men had been made prominent by the war, but it was one which had always existed in civil life, though its magnitude had not been generally appreciated. A census taken recently in Wales of civilians who had lost a limb gave the surprising result that they were in the ratio of 1 in 810; the census brought to light also the fact that, though the ratio was highest in the industrial districts, where it was 1 in 690, it was still as high as 1 in 1,023 in rural areas. The lecturer then gave an account of the organization of the Prince of Wales Hospital for Limbless Sailors and Soldiers at Cardiff, illustrated by lantern slides and cinematograph films. The hospital, he said, was entered not by steps but by an inclined plane; another inclined plane led into the garden, so that even a man who had lost both his legs could take himself into and out of the hospital in a hand-controlled wheeled chair. Such a man found his ward, with bathroom and lavatory attached, on the ground floor, and the dining-room and recreation-room were on the same floor, so that from the first the most severely crippled man enjoyed a certain amount of independence. The patient was admitted to an orthopaedic centre, either directly from the front or after a period in a general military hospital. At the centre he underwent such special surgical treatment, including operation, as might be necessary. At a suitable stage he was fitted with a temporary limb, the best type being a modification of the Belgian pylon. When he had learnt to keep his balance he went to a Red Cross hospital for practice, preferably in a hilly district; here he completed the second stage of his course of treatment and training. He was then ready to be admitted to the limbless hospital for the final stage, which was the fitting of the artificial limb. It was important to have workshops

on the spot, as in finally fitting an artificial limb, so that it should be thoroughly comfortable and useful, many small alterations and adjustments were necessary. In making these the man's own feelings must be consulted and his advice accepted. The first stage of the training in the use of an artificial leg was carried out in a parade hall, a long room with a terrazzo floor, and two sets of parallel bars to suit men of different heights. The bars gave him confidence, and at the far end were mirrors, so that he could see for himself any error he made in his first attempts to walk, and was shown by an instructor how to correct it. If a man had lost both legs the preliminary stage must be longer. The difficulty such men found in getting into their artificial legs had been overcome by a special appliance, an "aerial transporter crutch," consisting of pulleys and tackle by which the man could lift himself from his wheeled chair into his artificial limbs. It was necessary for a limbless hospital to have an outdoor training ground in which a man could get accustomed to the variations in the pitch of roads and paths which pass almost unnoticed by a man with two sound legs. At the Prince of Wales Hospital, Cardiff, a miniature "Wild Wales" had been laid out to imitate the conditions existing in a land of hills and dales; it had rough stone paths, some on the level and others presenting gradients varying in pitch up to 1 in 3½. These paths were so laid that as the man walked the right foot was in one stretch higher than the left, and in another the left higher than the right. Men with artificial arms were also trained in "Wild Wales"; there were sand-pits for practice in digging and shovelling; and the use of an axe, hammer, and other tools was taught under the superintendence of an armless collier, the inventor of a most ingenious worker's arm which he had himself used successfully for over twenty years. A limbless hospital should also have an experimental workshop for testing the strength of apparatus and estimating the efficiency of new inventions and designs for artificial limbs of the upper and lower extremities.

ABDOMINAL WOUNDS.

Mr. Cuthbert Wallace, C.B., C.M.G., gave a demonstration at the Royal College of Surgeons of specimens illustrating wounds of the abdomen. He began with some diagrams showing the position in which most wounds occurred. He showed also charts indicating the most dangerous wounds that reached a casualty clearing station and those that recovered without operation. Other charts were displayed on which were marked out the track of the projectiles that had passed through the abdomen without wounding any viscera. He then discussed the mechanism of wound production and the theories put forward to account for the difference of the wounds made by the same projectile. Next he pointed out that a few men had undoubtedly recovered without operation after having been wounded in the stomach or intestines. He also discussed the subject of wounded viscera without penetration of the abdominal wall. Next he referred to the so-called remote effects of high-speed projectiles, and advanced the view that they could nearly all be accounted for by the interruption of the blood supply. Finally he took each organ separately and demonstrated the lesions found, by means of the specimens in the College museum.

SKULL WOUNDS.

On Thursday afternoon, April 10th, Professor Arthur Keith, F.R.S., gave a demonstration at the Royal College of Surgeons on the section of the War Office Collection, now exhibited in the museum of the College, which illustrates the effects of gunshot injuries of the skull. Professor Keith explained that he was merely acting as showman for the great company of medical officers who had made such a collection possible. Although the bulk of the specimens had been selected and forwarded by officers of the Royal Army

Medical Corps, yet many valuable contributions had also been made by medical men belonging to Overseas Forces—particularly of the Canadian and Australian Medical Services. In the collection were to be found illustrations of all degrees of injury to the skull—from the almost complete miss or superficial tangential wound to the complete fragmentation which followed a direct central hit by a high-velocity bullet. The series which illustrated the effects of a grazing wound, one in which the missile did not actually touch the bone, was perhaps the most instructive. In such cases the external table of the skull might be perfectly intact or merely finely fissured and yet the internal table was comminuted, and even the dura mater torn and the underlying brain lacerated. All stages of healing of cranial wounds could be illustrated from the collection, so could specimens which showed the results of infection, particularly the formation and separation of sequestra. The lecturer was able to illustrate cases where bone had been successfully grafted to make good large deficiencies of the cranial vault.

WAR INJURIES OF THE EYE.

A demonstration of specimens illustrating war injuries of the eye was given at the Royal College of Surgeons on Friday, April 11th, by Mr. W. T. Lister, C.M.G. A series of drawings showing the changes seen by the ophthalmoscope was displayed, as well as drawings of the "gassed" eye in the acute stage and in the stage of resolution. The specimens of eyes removed illustrated the results of penetration by small shell fragments, through-and-through wounds, suppurative conditions, ruptures of the sclerotic due to the explosive effect of foreign bodies, detachment of the retina, concussion changes such as dislocation of the lens and various haemorrhages, and evulsion of the optic nerve.

THE DOGS' BILL.

THE terms of the resolution of protest against the Dogs' Bill, and the fact that it was passed unanimously in the joint meeting of the Sections of Medicine and of Preventive Medicine and Pathology and in the Section of Surgery, were recorded in our last issue (p. 456). In moving the resolution at the joint meeting,

Sir William Osler, Bt., F.R.S., said that if there was one thing more than another that the profession had to bank upon, it was that scientific progress came from investigation and experiment. It was not until experiment was added to observation that scientific medicine originated. All progress had been based on experiment. He yielded to no one in his love for the dog, but he had a still greater love for his fellow man. There should be a monument in every city to the ideal dog for the work which his kind had done in saving life by becoming the subject of experiment. The present proposals before Parliament were an unnecessary and inhumane obstruction to scientific work.

Lieut.-Colonel C. J. Martin, F.R.S., Director of the Lister Institute of Preventive Medicine, who seconded, said that he had sought for the reason why our legislators should be occupying themselves with a bill for the protection of dogs from imaginary abuses. The only explanation he found was that the bill arose out of a misapprehension of what was done with dogs in laboratories. The public should be acquainted with the truth by the profession. The public had an idea that the careful and faithful observation of patients during life and of their bodies after death was adequate for all purposes, and that experimentation was merely a luxury. The profession knew that this was not the case. Those careful and faithful observations had gone on for centuries; they were essential, but by themselves they merely provided a catalogue of the depredations of disease on the human body as seen from the outside during life and from the inside after death. It was still necessary to experiment. The dog was already safeguarded by legislation; in 95 per cent. of cases the experiment was conducted under complete anaesthesia

and the animal was not allowed to recover. He had not seen anything done to dogs in British laboratories that he would object in the least being performed upon himself if the choice was the lethal chamber.

Sir G. H. Makins (President of the Royal College of Surgeons of England), in supporting the resolution, said that the matter affected not only science but the technique of surgery. In the surgery of the vascular system the result of experiment had been to put the subject on a practical basis. Technique had been perfected by experiment in a manner otherwise not possible. It would be a disaster to interfere so materially as was intended with the progress of their science.

Colonel Haven Emerson, Medical Corps, U.S.A., who was in the chair, in putting the resolution, said that he had no right to discuss British legislation, but this bill, if passed, would have its repercussion in other countries; it would hearten those mischievous people, supported by large endowments, who were pursuing the same object in his own land. Resolutions were not enough; they must be followed up by personal propaganda; doctors must tackle their representatives in Parliament. Let them also in their own practices get hold of and convert the individuals who had received some benefit as the result of the sacrifice of a dog's life; make these individuals appreciate the fact and publish it. When they gave an injection of diphtheria antitoxin, when they made a successful operation, then was the time to win that family permanently to the cause of experiment. The small group of devoted and self-sacrificing experimenters must not be allowed to bear the whole burden; it must be shared by the whole profession.

As already stated, the resolution was carried unanimously, and a resolution in similar terms was at the same time carried unanimously in the Section of Surgery. The resolution on this subject adopted unanimously by the Royal College of Physicians of London on April 14th is printed at p. 503.

WAR MUSEUM

It was that in the Art Section of the Medical War Museum, at present housed in the studios at 76, Fulham Road. Lieut.-Colonel F. S. Brereton, who is engaged in the medical history of the war, is to be congratulated on securing the services of a brilliant company of young artists who have all served in the ranks of the Royal Army Medical Corps, and thus have inside experience of what they illustrate. It is well to know that these artists have gone through the comparatively menial work of stretcher-bearers or hospital orderlies, and have now been promoted to the rank—and pay—of sergeant. Gilbert Rogers, the well known Liverpool portrait painter, now commissioned as a lieutenant, is in charge of the studios and workshops. The exhibition consists of oil paintings, water colours, and pastels, illustrating the work of advanced dressing stations, field ambulances, casualty clearing stations, and general hospitals, and of plaster models and casts. Not only have these exhibits an educative value, but they are of considerable artistic merit. Lieutenant Rogers has a powerful study of "The R.A.M.C. at Passchendaele during an attack," showing the bearers and medical officer at work, a drawing that will convey to those who have not experienced front line work more than pages of description; his "Dead Stretcher-Bearer" is a haunting, poignant memory. George Pirie, A.R.S.A., exhibits paintings illustrative of methods of transport which gave him full scope for his speciality of animal painting; his "Mud Sledges in Flanders" is, perhaps, the best bit of work in the exhibition, and is a good example of what his gentle, sympathetic style can get out of prosaic material. The plaster casts of Benjamin Clemens the sculptor would alone repay a visit to the museum; his humorous and understanding study of the

head of "An Orderly," the realistic and yet artistic illustration of "The Pick-a-back," and the careful modelling of the "Camel-Cacolet" will conjure up to many a one memorable scenes of the war. A word of praise must be given to Edwin Martin, who, though a landscape painter, has turned his hand to the production of panoramic models of regimental aid posts with their shell-torn surroundings, and to the construction of such inartistic things as refuse destructors and drying sheds. A large number of pastels illustrating the history of a wounded man and many studies of hospital scenes are contributed by Austin O. Sparc, the editor of *Form*, and though pastels seem to be a new medium for him, yet his success is unmistakable. David A. Baxter has caught the atmosphere of the forward area; his landscapes in water-colour have a charm and an individuality of their own; the "Wounded Poilu" may be picked out as of special merit. Amongst the several exhibits of J. Hodgson Lobley there is an arresting picture of "No. 41 C.C.S. at Roiselle," where the convoys of wounded have just arrived at the admission ward. H. R. Mackey, M.M., late of the 36th Field Ambulance, found time from his military duties to make studies of the fighting man and the refugees; the "Dressing Station at Flines" is an excellently painted, peaceful episode in the midst of war. From the same ambulance we have several beautiful water-colours by W. E. Spradbury, D.C.M., notably a series of drawings of Maillet-Mailly, that are reminiscent of this artist's decorative poster work, so familiar to the Londoner who travels by the Underground. Where the permanent home of this unfinished collection may be is not yet known, but a visit to the studios in Fulham Road is well worth the while.

"THE LANCET."

On Friday, April 11th, the Editor of the *Lancet* entertained at luncheon, at the Hyde Park Hotel, a party of some fifty guests, including many of those who had taken part in the meeting.

Mr. Norman Moore, President of the Royal College of Physicians, Sir George Makins, President of the Royal College of Surgeons, Sir W. H. Norman, Medical Director-General R.N., Sir John Goodwin, D.G. A.M.S., Major-General M. Fell, Medical Administrator R.A.F., Major-General G. Foster, D.G. C.A.M.C., Sir William Osler, Sir David Ferrier, Sir Havelock Charles, Sir George Newman, Sir Robert Morant, Sir Bertrand Dawson, Sir Robert Jones, Sir Humphry Rolleston, Sir Wilnot Herringham, Sir Walter Fletcher, Dr. J. A. Macdonald, Dr. G. E. Haslip, Dr. Cox, Mr. Maynard Smith, C.B., and Dr. Gordon Holmes (secretaries of the meeting), Colonel J. G. Adams, F.R.S., and the Editor of the *British Medical Journal*, Dr. Norman Moore and Dr. Dawson Williams briefly expressed the thanks of the company to the *Lancet* for the hospitality shown, and Dr. Squire Sprigge briefly responded.

HOSPITAL PLANS.

Throughout the meeting there was on view in the library of the Imperial College an exhibition of plans and drawings of cottage hospitals, lent for the occasion by the several architects. Plans were also displayed of military huttet hospitals, including the Ontario Military Hospital of the C.A.M.C. at Orpington; the Canadian Red Cross Hospital at Joinville, Bois de Vincennes, Paris; and the St. John Ambulance Brigade Hospital at Etaples. The plans of the last named hospital were supplemented by interesting photographs showing the general arrangement of the camp, and the effect on ward huts of the disastrous air raids which took place last spring and summer.

THE ASSOCIATION DINNER.

ON Thursday, April 10th, some 350 members of the Association and guests assembled for dinner at the Connaught Rooms. Service uniform was very much in evidence, and a large number of ladies were present. The President of the Association, Sir T. Clifford Allbutt, K.C.B., F.R.S., occupied the chair, and among those beside him were Lord Gorell, Sir Henry Craik, M.P., Sir Philip Magnus, M.P., Sir Robert Morant, Sir Walter Fletcher, Dr. Norman Moore, President of the Royal College of Physicians, Sir George Makins, President of the Royal College of Surgeons, Sir Humphry Rolleston, President of the Royal Society of Medicine, Dr. Dawson Williams, Dr. Alfred Cox, and the following members of the Services: Sir W. H. Norman, Medical Director-General, R.N., Lieut.-General Sir John Goodwin, D.G. A.M.S., Lieut.-General Sir C. H. Burtchaeil, D.G. M.S., France, Major-General Sir N. R. Howse, V.C., D.M.S. A.I.F., Major-General C. la F. Foster, D.G. C.A.M.C., Lieut.-Colonel Bernard Myers, N.Z.M.C., Colonel P. G. Stock, S.A.D.F., and Major-General M. H. G. Fell, R.A.F., together with Colonel Haven Emerson and Colonel A. M. Whaley of the Medical Corps of the United States Army. In the course of the evening Dr. Addison, President of the Local Government Board, paid a brief visit in order to convey to the gathering the greetings of the Government.

THE SUCCESS OF THE CLINICAL AND SCIENTIFIC MEETING.

THE PRESIDENT, after the toast of "The King and the President of the United States" had been honoured, made a few observations upon what he described as an extremely successful meeting. He had visited all the sections, and had been to as many of the demonstrations as it was possible to cover in an afternoon. The extraordinary difficulty of London travel had militated against the fulfilment of his afternoon programme. He had supposed that the ubiquitous taxi would carry any one anywhere, but London taxis were now like the meteorites which appeared in the spring and autumn sky, and flew about in all directions in entire disregard of the human beings in their eccentric path. But he had seen enough of the Clinical Meeting to say that never before had he known in any concourse such thorough earnestness and businesslike determination. It had been impressive to see the scientific enthusiasm displayed. The sectional meetings were very full, the audiences highly interested, and the discussions of a high quality. It had been a great advantage so to order the programme as to concentrate attention upon single and definite subjects. No doubt the circumstances of the time had lent special interest to the discussions, but he was inclined to think that it would be well to endeavour to secure a similar concentration in future meetings, so that the whole strength of the Association might be thrown for the time being into certain specific channels of research and observation; this would be likely to result in more progress than desultory discussions over a large area of subjects.

THE MEDICAL SERVICES OF THE NAVY, THE ARMY, OF INDIA, AND THE AIR FORCE.

SIR WILLIAM OSLER, in proposing this toast, said that he approached the task with no little trepidation, because he had never before spoken in the presence of so many ladies. If there was one person more than another of whom he stood in dread it was the doctor's wife! Turning to the toast of which he was in charge, he said that, the tribute of deeds having been paid, the tribute of words in return must be inadequate. War as his colleagues had seen it was hell; no one saw war as the doctor did except the nurse. He knew what the men of the medical services had been through during the past four years, and how colossal had been their task—that of providing a citizen army with a thoroughgoing medical service. It had been no easy job, and the men in charge of it had been criticized and criticized unjustly. He had been asked what in his opinion was the chief single triumph of the army—the one outstanding event and achievement on the medical side. He had replied that it was not the way in which wounds had been dealt with, the sanitary dispositions, the measures taken to meet new diseases, such as trench fever. The chief triumph had been that for the first time in history a great war had been fought without the great killer: enteric was con-

trolled. Their hearts were full of gratitude to a number of people as they honoured this toast, first of all to the men who, long before this war was thought of, organized the Territorial forces and their hospital services. If there was one man more than another who deserved credit in this connexion it was Lord Haldane. How much they owed also to Sir Alfred Keogh, and how lucky he was to get out of his job alive! That evening they welcomed his successor at their board. It was one of the nicest things he knew that Sir John Goodwin had at last succeeded in inducing the War Office to add to their coat-of-arms—a pair of scissors, to cut red tape for ever! He could say nothing that was adequate as to the work of the nurses. Words would fail any man to describe the labours and courage of those women. A procession of the Guards in Piccadilly would not particularly appeal to him, but he would like to see the nurses from the casualty clearing stations marching through that thoroughfare. And, last of all, how could they be grateful enough to the men who had died for them? They were many. They gave their lives. They were immortal.

SIR WILLIAM NORMAN, Director-General of the Medical Department, R.N., returned thanks for the four services. One of these days, he said, they would be all one service—an Imperial Medical Service. The war had revealed a considerable amount of overlapping in the medical services, and it would be to the advantage of everybody if they were combined. He wished to express gratitude to the civilian doctors who gave up their practices and joined the services, and in a great many cases lost their lives. Without their assistance the services would have done little or nothing. They of the services had made mistakes, but, taking it all round, they had not come out so badly. (Applause.)

THE OVERSEAS MEDICAL SERVICES.

DR. NORMAN MOORE proposed the toast of "The Overseas Medical Services." How very little, he said, they in England who had not travelled much abroad knew about the colonies, and what wonderful places they were! While talking with Colonel Myers of New Zealand he had been reflecting upon the strange history of those islands in the southern seas, once inhabited only by birds, without a single quadruped or man, until a canoe of Papuans made their way to the strange coasts and invaded the Asian republic. Then came Captain Cook who sailed round the islands of New Zealand. Cook also came upon a coast which reminded him of what he had seen in the Bristol Channel, and so he named the country New South Wales, and that brought the speaker to the second country of which, in proposing this toast, he had to remind them. He remembered as a boy meeting an old gentleman who had dined with Sir Joseph Banks, the naturalist of Cook's expedition. Another old gentleman with whom he had been associated could remember when the whole of South Africa was covered with antelopes, and how one night, while camping out, he saw a herd of twenty white rhinoceroses. And this same old gentleman said that when he was lonely or depressed he used to think of the whole of North America covered with bison! The war had taught the old country much about her colonies, had given her a new admiration for her children who had come from far to meet her enemies in the gate. He coupled with the toast the names of representatives of the medical services of Canada, Australia, New Zealand, and South Africa.

MAJOR-GENERAL G. LA F. FOSTER, D.G. C.A.M.C., recalled that it had been said of Canada that she was daughter in her mother's house and mistress in her own; and that expressed the sentiment with which Canadians came to the war—they came to assist the mother. And no mother ever welcomed a child more gladly, and no part of the welcome could have been kinder than that of the Royal Army Medical Corps and the British medical officers generally. Sir John Goodwin and his predecessor, and, in France, Sir Charles Burtchaeil and his predecessor, had extended to them from the first the utmost kindness. He proceeded to give an idea of army medical progress in Canada. The regular service before the war consisted of 20 officers, 8 nursing sisters, and 74 other ranks; and within two years, thanks to the ready response of the civil medical profession in the Dominion, they had sent over 800 medical men into the Royal Army Medical Corps; they had 2,500 medical officers in the field and in England, and

upwards of 3,000 nursing sisters. Now that the war was over they from Canada were going back to their own country to work out their own salvation, but the experience they had gained over here and the help and kindness they had received would have an abiding impression upon the future of the Dominion.

Major-General Sir NEVILLE HOWSE, V.C., D.M.S. A.I.F., endorsed everything that General Foster had said about the treatment the overseas men had received in the old country. If the dominions had not come to assist those who had brought them up, and who, through the navy, had protected them for the last 110 years, they would indeed have been most ungrateful children. It was perfectly natural that they should come, as they came to the South African war. The medical profession in Australia had probably made greater sacrifices than any other portion of the community, although they might not have lost the same percentage of lives. Amongst the Australians one in every five and a half men had given up his life for the great cause—the highest death-rate of any force entering the war. In their pride of small-nationhood they liked to call themselves allies, and he thought that in any future warfare, so far as the medical services were concerned, it would be as allies that they would come, unless, indeed, in making an imperial army, an imperial medical service was set up also, for it was quite clear that better use could have been made of the medical material had it been pooled, so that the best brains could be used in the most fitting positions. It was well known, even in their profession, that if anyone attempted to fill three or four different positions he generally failed, and although it was considered that once they had become soldiers and joined the medical service they were able to do anything, his experience was that this was not the most efficient way of going to work. Therefore he hoped there would be an Imperial Medical Service. For thirty years they in England had fallen down and worshipped the clinician while neglecting the preventive side of medicine. Could they learn one further lesson from the examination of so-called healthy men, many of them first-class insurance lives, who, nevertheless, in an enormous percentage were unfit for military service? The cause of this was largely the slightness of interest in and of control over the health education and physique of the nation. He took it that the English army was the most perfect in the world at the present time save in one respect—the dentistry was in the dark ages. It was inconceivable that the war should have been going on for four years and the dental services be in the condition in which they were to-day. The conditions were pitiable, but no worse in the army than in the general community. In concluding, he paid a grateful tribute to the kindness of the British people.

Lieut.-Colonel BERNARD MYERS, N.Z.M.C., said that New Zealand had felt it a great privilege, at the call of the war, to join the forces of the motherland. New Zealand had sent altogether 100,000 men out of a population of 1,200,000. On the last day of the war the New Zealand medical establishment consisted of 250 officers and some 2,000 orderlies. Nineteen medical officers had been killed. Like Australia, New Zealand had her own hospital ships, staffed by her own medical officers, orderlies, and nurses. He had to acknowledge the constant courtesy they had received on this side, from all departments of the War Office, from Sir Alfred Keogh and the present Director-General, and particularly from the D.M.S. Embarkation, who had never lost an opportunity of doing them a kindness, with the result that all the evacuations went through with the greatest ease. He hoped that some day his colleagues in Great Britain would visit New Zealand, where they would receive the heartiest of welcomes.

Colonel P. G. STOCK, C.B., D.D.M.S., South African Defence Force, said that one of the great features of this war was the way in which it had thrown men into contact. He appreciated enormously not only meeting the people of this country, but also the Canadians, Australians and New Zealanders, and the Americans. Was there no possibility of the meetings of the Association taking place in the Dominions? The journey thither, thanks to the Air Force, might be greatly accelerated in the near future. Should the Association at any time decide to come to South Africa, the South Africans would try to make up by the warmth of their welcome for what they might lack in clinical interest. He hoped that the

friendships made in the war would be something more than pleasant remembrances. Demobilization was proceeding apace, and the South African men would shortly be scattered from the Cape to the Zambesi. But whether under the shadow of Table Mountain or on that illimitable veldt, they would often be thinking of their friends in England.

GREETING FROM THE GOVERNMENT.

At this point the PRESIDENT introduced Dr. Addison, remarking that the President of the Local Government Board was one of the greatest friends of the medical profession, and he hoped he might say that that meant that he was one of the greatest benefactors of the British public.

Dr. ADDISON, who was warmly received, said that he came to express to that great gathering, which had been brought together by the British Medical Association and was representative of the dominions and of our great ally, respectful and cordial greetings, and to say how much the Government felt that it owed to the Association and to those who had come together now in London to exchange views and to collect and focus the lessons of the war. He had further to say that the Government hoped to derive great benefit from the counsel which the Association would afford, for, as they all understood, it behoved the country to make use of the lessons of the war, and they were endeavouring at the present time to provide machinery through which they might invoke in a regular and systematic manner the best advice and help of the medical profession. The Government of this country had not always been popular with the medical profession—it was not the lot of Governments to be always popular—but he could say this, that now the Ministry of Health Bill would almost certainly be law in a few weeks' time, they had an unexampled opportunity of helping one another in promoting public and personal health, and the Government intended to do all it could to invite and to receive the assistance of the profession. He was glad to be charged with that message to this most important gathering. He trusted that the training in co-operative effort which all must have received would in some way still be utilized for the benefit of the people at home. Many of the lessons of the war could be used to the advantage both of the medical profession and of the public, and as the man who would probably be responsible for the work of the Ministry of Health, in the early months if not longer, it would be no fault of his if the Government did not receive the hearty assistance of the profession. He hoped that the Clinical Meeting, if the first, would not be the last of its kind with the object of gathering up and applying further the lessons of the last four or five years. In the early days of the war he was associated with others in starting an organization designed to collect together the medical histories and statistics of the war. Some time ago he saw the mountains of cards and the tons of paper which had been collected, and he wondered who would be fortunate enough to extract therefrom the lessons that really mattered. The man or woman who could do it would be possessed not only of much patience but of uncanny skill, and he wished well to him or her; he knew that no pains or forethought had been lacking to secure that the medical records of the war were preserved and made accessible. He felt sure that the dominions would co-operate in this task as they had done in the struggle itself; and in the presence of officers of the United States, he could not forbear saying how often he had envied the facility with which on the other side of the Atlantic they had managed to deal with statistical records and publications so as to make them interesting and easily grasped. He thanked Sir Clifford Allbutt for the privilege which had been afforded him of making those few remarks.

THE UNITED STATES MEDICAL SERVICE.

Major-General Sir BERKELEY MOYNIHAN, K.C.M.G., C.B., in proposing this toast, said that America during her independent history had waged three wars under three great presidents. She had fought always for one reason; she had achieved always one result. She had fought always for freedom; she had always attained victory. In her first war under Washington she fought not, as they had been told for generations, against England, not against an enlightened democracy, but against a German autocracy, represented by a German English king. In her

second war, under Lincoln, she fought, unhappily, within herself, to decide who should rule in her own house. In her third war, under Wilson, she fought to destroy German tyranny. In her first war she won freedom for America: in her second war, freedom in America; in her third war she had striven with us to win freedom for the whole world. The first shock of the war was borne by France and England, and only a distant reverberation was felt across the Atlantic, but as infamy was piled upon infamy America realized that not only the interests of Europe but the interests of civilization were in jeopardy, and then, with an enthusiasm which overcame all obstacles, she called her sons to arms and trained them to fight over in Europe by our side. America and England in moments of expansion and emotional enthusiasm occasionally spoke of one another as cousins, but "he to-day who sheds his blood with me shall be my brother." He looked for a fraternal union with America: political union and commercial union they might never have, but this union was an affair of mind and heart. There must be broader opportunities for intellectual traffic between the two countries. We had the same ideals, the same love of liberty and justice and progress. To this "marriage of true minds" there could be no impediment; and already the incorrigible matchmakers were at work in the shape of the United States medical service and our own and the professions of the two countries. When in the hour of our most urgent need an appeal was sent across to America it was answered instantly and cordially, and hundreds of young American medical officers were sent over to this side to help in the work that was being done in our hospitals. At this moment America had far more friends in England than she had ever had before. He was confident that every returning American soldier would be an ambassador of affection. When America entered the war one of her first acts was to request that somebody from our medical service should be sent over to Washington to help in the creation, administration, and training of that large medical service which it was known would be required. The wise choice fell upon the present Director-General. Of the results of his work it was neither timely nor appropriate to speak, but one result was an increase of the affection which many in America had for England, her customs, methods, and ideals. Among the great men of the United States medical service whom he would like to mention were Surgeon-General Gorgas, who was born with all the qualities of greatness and acquired greatness during a most distinguished career, a man who had the strongest grip in the softest hand of any man the speaker ever knew; his successor, General Ireland, and, to mention yet another name, Franklin Martin. The work which these men and others had done in assisting fraternal union should be looked upon as a foretaste, a beginning, an incentive. The bond might be strengthened by the interchange of professors and of students, and more frequent meetings in common which it would be a real obligation to attend. But it could only come about if they had faith in it. American and British boys were lying in death together in France. Men did not willingly sacrifice their lives in multitudes for material ends, but only for the things of the spirit. Therefore it was for those who remained to discard unworthy doubts and to believe in, and work for, something like an alliance between the two countries, which would be good not only for America and for England but for the whole world.

Colonel HAVEN EMERSON, M.C. U.S.A., said that it would need more than an orator, it would need a historian, a statesman, to reply in fitting terms to the toast proposed by Sir Berkeley Moynihan, and it would take the thousand voices of their men in war to express the feelings which he himself could only feebly repeat. Never was there such a time for service. Never did service seem so easy, however heavy the burden. Never did the peoples of the world seem more worth serving than in the last few years. Were they not each of them saying, "I was born in the very nick of time"? Who would not rather live just now than at any other period in the history of the world? There were only 270 medical officers with more than three years' military experience who had served in France in the American expeditionary force; something less than 1,000 medical officers, mostly of the reserve, served with the British behind the lines or in the hospitals, and 12,000 others had had to be trained for the medical service of the army. These were recruited from the

ranks of private practitioners, and a vast change had to come, not only over their outward circumstances, but over the spirit in which they approached their duties. Instead of waiting until somebody came and said, "I have such and such a sickness; give me such and such a medicine," they had to go out and discover who was sick. The man who was most responsible for this change at the beginning was the first ambassador from the British service, the present Director-General, who came with a distinguished group of men to give exactly the welcoming and stimulating word that was needed. None of those who were present at their receptions would forget the impression. The inspiration that followed spread at once to the camps of the country, and helped to make the period of training one of vigour, excitement, and anticipation. The speaker went on to pay a tribute to the quality of field sanitation of the Royal Army Medical Corps, and quoted a letter received from a regular army officer who had come over with one of the first hospitals in May, 1917, and went to the Rouen base.

I learned (he wrote) the value of simplicity of installation. I saw perfect policing of camps. Flies were almost unknown, in spite of the presence of three thousand horses stabled adjacent to the hospital. Drainage, grease-saving, destructors, dryers, were efficient to a degree unknown to us. Resourcefulness, initiative, cleanliness, orderliness, and everywhere a standard of living that opened the eyes of the most self-satisfied Yank to the possibilities of a salvage dump and the uses of petrol and biscuit tins. The wild Americans were also impressed with the discipline maintained. Hospitals with 1,500 beds were operating in space we demanded at home for 300, and with a simplicity of equipment that was a revelation to us. The evacuation system was a marvel of perfection. Everywhere one saw and felt the incomparable loyalty of the British "Tommy." His confidence in and respect for his officer expressed an ideal relationship, and proved the reasonableness of the discipline. Everywhere a moral that seemed born in the men rather than acquired. Nothing could bind men together more strongly than the experience of our service in the B.E.F. As well as the personal and professional pleasure from our British experiences, we gained a training which served in good stead when officers were sought for to establish hospital services in the A.E.F. British methods, devices, rules of service, procedures were taken over direct to our own hospital units, to the great advantage of the economy of labour and of the quality of medical care given to our sick and wounded.

Colonel Emerson went on to say that his own service could not but follow the example which had been set, both as to organization and research, and also the keeping of records; their business was to make statistics vital instead of collecting vital statistics. It was his privilege to speak—and he did so from the bottom of his heart—for every unit of the service in expressing thanks to the men of the medical service in England and her colonies. Various speakers had commented upon the atmosphere of the sessions at that meeting, the seriousness of all concerned, and the absence of that boredom which sometimes made its appearance at medical gatherings. All the men seemed to be freed in the white heat of this emergency from the trivialities of discussion. They had been considering questions, not of priority, but of fact. There was among them a serious determination to make progress, to make it promptly, to apply the results at once to the life with which they would have to do. Mankind had struggled over rights of property and possession; very largely it had been those which had determined war; it was now their duty to see that the health right of the people was protected as well as the property right. The experiments which had been made in military camps with regard to the relation between overcrowding and disease were a most valuable argument for the housing reformer and the civil officer of health. One war experience which had been learned was the need to put nervous disorder—war neurosis—in the class of communicable diseases. It was so treated in the American forces on the advice of the psychiatrists and neurologists, with the result that only 1 per cent. of all the cases that presented themselves at the clearing stations had been returned to the United States as incapable of military service. The Americans had learned from the British the value of hospital centralization and single control, and the same applied to the laboratory service. In fact, the British service had been most generous in telling them of its own early mistakes and failures, so that they had not to waste time by going over the same ground. He envied the profession in Britain this Ministry of Health, and in particular among British legislative

activities he praised the action of Parliament which put research on the taxpayers. The establishment of a Research Committee was the greatest guarantee of medical progress that had been recorded in any country, and it was inconceivable that any legislative body which put that law upon the statute book could consider for a moment this amazing concoction of anti-humanitarianism which was now before Parliament—the Dogs' Bill (hear, hear). In concluding an eloquent address Colonel Emerson said that many visions and expansive ideas came into the mind, but the thing first of all to be considered was Carlyle's advice—to do the duty which lies clearly next to hand. It was inevitable that the profession would have to bear the burden of recreating a health organization which should be as good for the civil population as the one which it had created for the army.

THE BRITISH MEDICAL ASSOCIATION.

Sir G. H. MAKINS, G.C.M.G., C.B., proposed "Continued success to the British Medical Association." The Association, he said, was a many-sided body whose activities had been exerted not only on behalf of its own members but on behalf of the profession and of medicine at large. It had done much for the profession from the social point of view; by meetings such as the present, and by the establishment of its Branches, not only over the whole of the United Kingdom but in the Dominions, it had rendered enormous service by simply bringing the members of the medical profession together. It had helped to create the brotherhood of the profession all over the world. Then the Association had been a foremost power in developing research, and there were few members of the profession devoting themselves purely to medical research who had not benefited from its grants in aid. It had helped to diffuse medical knowledge not only by its meetings but by its JOURNAL, which kept them all cognizant of what was going forward. It gave every member of the Association and the profession the opportunity of publishing what he was doing, and from time to time the JOURNAL acquainted them with work done in all parts of the world. As to the political activities of the Association, it had had to undertake matters upon which the profession as a whole was not agreed, but it was hardly possible for a profession to be unanimous as to any course of policy. The Association had worked honestly for the good of the profession. He instanced the work of the Central Medical War Committee, which could not have been done, at any rate so effectively, under any other ægis. He would say to the critics, "Come into the Association, and there you will have an opportunity of exerting your influence if the Association is doing what is not good, and of helping it if it is." That was the only way in which the dissentients could make themselves useful, so far as he could see. Nothing was more remarkable than the opening of the pages of the JOURNAL to the Association's critics. The debt to the Association was made greater by the present successful meeting which it had organized, and which would be a red-letter meeting in its annals.

Dr. J. A. MACDONALD, LL.D., Chairman of Council, who responded, said that it was one of the objects of the Association to bring about the imperial unity of the profession suggested by Sir Neville Howse. It was his lot a few years ago to visit the Branches in the Overseas Dominions, and he found that even then the imperial medical idea was at work. He explained why the present meeting had been held. It was the custom of the British Medical Association to hold a scientific meeting in July, but on this occasion it seemed likely, owing to the sudden cessation of hostilities, that visitors from the Dominions and the United States would be departing before that date. He was certain the meeting would prove one of those happy events which sometimes issued out of disasters such as war. The Association had scored a distinct triumph in bringing about such a meeting, and he wanted to thank the visitors from across the seas who had assisted so materially in promoting its success, and in particular Colonel J. G. Adami of Montreal, who had been chairman of the committee which arranged the programme of business of each section. The Association was a powerful body. It was consulted by members of the Government on many occasions, with advantage to the Government and possibly with advantage to the profession, but with an advantage to the profession which would be all the greater if the

Association could speak for a united profession. There was no reason why it should not include within its ranks every medical man. Before concluding he particularly wished to mention one who, owing to his modesty, was often left in the background—the Editor of the BRITISH MEDICAL JOURNAL. It was to him that the inception of this meeting was due, and he hoped that the medical profession throughout the country would be made aware of the fact. They were greatly indebted also to the secretaries, Mr. Cuthbert Wallace, Dr. Gordon Holmes, and Mr. Maynard Smith, and with these names he wanted to include that of Dr. Alfred Cox. (Applause.)

Medical Notes in Parliament.

Grants to Universities and Medical Schools.—The Civil Service Estimates for the year ending March 31st, 1920, contain an item of £500,000 for special grants in aid of certain universities, colleges, medical schools, etc., to assist them to re-establish their work on a basis of unimpaired efficiency. The grant for the year 1918-19 was £30,000, so that the increase is £470,000. In an explanatory note it is stated that certain of the universities, colleges, and other similar institutions which are in receipt of parliamentary grants are in need of special assistance in order that they may, as far as possible, resume their full work under favourable conditions, and may not be hampered by extraordinary expenditure involved by the prolonged interruption of their activities and development caused by the war. The special grants in aid for 1918-19, amounting to £30,000, were provided to meet particularly urgent cases, in which some measure of assistance could not be delayed until the conclusion of hostilities without risk of grave permanent detriment to the institution concerned. The estimates do not state the manner in which this grant of half a million will be distributed and to what extent the several universities, colleges, and medical schools will severally benefit. This grant of half a million is in addition to the grants in aid of the expenses of universities and colleges in the United Kingdom and of the expenses under the Welsh Intermediate Education Act. These grants amount to £916,000, which with £84,000 provided under another head, will raise the total amount of these grants to one million. This is a net increase of £527,000, which is wholly accounted for by an additional grant of £531,500 to universities and colleges in the United Kingdom. The difference between this amount and that stated as the net increase is accounted for by a diminution of £5,000 in the grant to colleges in Great Britain. The universities and colleges and other institutions will not be required to account in detail for the expenditure of either of the grants, nor will any unexpended balances be surrendered by the payees at the close of the financial year.

THE DOGS' PROTECTION BILL.

The Dogs' Protection Bill, also called a Bill to Prevent the Vivisection of Dogs, now stands as the first order for further consideration on report in the House of Commons on Friday, May 23rd. Originally a Trades Dispute Bill, backed by the Labour Party, had the first place on that day, but as the Government has announced its intention to propose legislation as to trades disputes the Labour Party has withdrawn its bill.

As was stated last week, no progress was made with the Dogs' Bill on April 4th when it came before the House of Commons on report near the end of the sitting. The Under Secretary for the Home Office (Sir Hamar Greenwood) proposed an amendment to leave out the following words in Clause I: "and no person or place shall be licensed for the purpose of performing any such experiments," and to insert the following: "except on such certificate being given as is mentioned in the principal Act, stating, in addition to the statements required by Section 3 of that Act to be made in such certificate, that the object of the experiment would necessarily be frustrated unless it is performed on a dog and that no other animal is available for such experiment."

A further notice of amendment by Sir Hamar Greenwood proposes to alter the title of the bill so that it shall be described as one "to impose further restrictions on" instead of "to prevent" the vivisection of dogs. A number of amendments have been put down also by private members.

Sir John Butcher asked on April 10th whether it was the practice of the Home Office, upon certain certificates being obtained, to allow experiments on dogs, in which the dog was kept alive after experiment until the main object had been attained, although the dog was found to be suffering from severe pain or pain that was likely to endure. Sir Hamar Greenwood, Under Secretary for the Home Office, said that

experiments were allowed under these conditions on proper certificates as required by the Act, but the further condition was added that if the animal was suffering severe pain which was likely to last, it must at once be painlessly killed, whether the main object of the experiment was attained or not.

Sir J. Butcher then asked whether he was to understand that if an animal was suffering temporarily severe pain, or was suffering considerable pain likely to last, it would not be killed unless the object of the experiment is attained? Sir H. Greenwood said that that was not to be understood, and asked that supplementary questions should be put down, as the words Sir John Butcher had used were capable of more than one interpretation.

Sir John Butcher then asked whether there would be laid on the table a copy of the licence issued in cases where an operation was performed without anaesthetics or where a dog or another animal was allowed to remain alive after an operation.

Sir H. Greenwood said that any member of the House could have a copy of the licence issued generally, but with reference to the specific licence he would have to consult the Home Secretary. Mr. R. Gwynne asked who was the judge of whether the animal was suffering severe pain likely to last, and Sir H. Greenwood replied that there might be several persons to judge—among others an inspector of the Home Office.

Sir John Butcher then asked the total number of experiments permitted to be made on dogs in 1917 in which the experimenter was permitted to perform the experiment without anaesthetics, and the total number of experiments performed on dogs in 1917 in which the experimenter was permitted to keep the dog alive after it had recovered from the anaesthetic. Sir H. Greenwood said: I cannot answer this question as regards dogs alone. The same certificates are required under the Act for cats as for dogs, and therefore the returns do not distinguish them. The number of experiments of the first class mentioned in the question performed in 1917 was 387; the number of the second class was 147. In the majority of these cases cats were the subjects of the experiments.

Lieut.-Colonel Guinness: Were not the large proportion of these 387 cases mere inoculations of infection, with no cutting of any kind?—Sir H. Greenwood: That is so.

Sir J. Butcher asked that in the next return the figures for dogs and for cats should be given separately, and Sir H. Greenwood said that under the present Act he could not promise to do so. If Sir J. Butcher would support the amendment down in his (Sir H. Greenwood's) name to Sir F. Banbury's bill, and it was passed, he thought that it would be possible. Lieut.-Colonel Guinness: Could not a distinction be made between experiments of inoculation with infection and experiments involving cutting, which are now all lumped together?—Sir H. Greenwood: If the amendment standing in my name is accepted, I think I can promise that also.

Scottish Board of Health Bill.—The Scottish Board of Health Bill was further considered on report, and read a third time in the House of Commons on April 10th. The Secretary for Scotland (Mr. Munro), in accordance with undertaking, moved an amendment similar to that proposed by Dr. Addison in respect of the English bill. The effect is that the powers possessed by the Board of Education as to medical inspection and treatment of children are to be transferred to the Board of Health, with the qualification that the Board of Health may, on schemes being submitted to them, delegate administration to the Board of Education. Mr. Munro repeated, on third reading, that the new Parliamentary Under Secretary for Scotland to be appointed under the bill would devote his energies entirely to health questions, spending as much time as possible in Edinburgh.

The Nurses' Registration Bill.—The Nurses' Registration Bill was passed through Standing Committee of the House of Commons on April 8th, under the chairmanship of Mr. D. MacMaster, K.C. No material alteration was made, save that it was agreed that the number of members of the council should be increased by one to give a representative for Wales.

Army Nurses.—In reply to Major McLean, Mr. Forster said that steps had been taken to meet the case of nurses who arrived in England on demobilization penniless. He hoped to make an announcement shortly with regard to the granting of gratuities to sisters of the nursing services and voluntary helpers. He added, in reply to Major Courthope, that the question of extending to nursing sisters retained on services overseas similar increases of pay and other advantages which were to be granted to the Royal Army Medical Corps with whom the nursing sisters were working was receiving consideration.

Health Visitors.—Sir Henry Harris asked on April 10th whether the President of the Local Government Board proposed to issue an order prescribing the qualification and salaries of health visitors. Dr. Addison said he had the subject of training qualifications and duties of health visitors under consideration, and would be happy to receive suggestions from him. He had already invited suggestions from a number of representative persons.

Prevention of Anthrax Bill.—Sir Hamar Greenwood (Under Secretary at the Home Office) introduced, on April 14th, a bill to control the importation of goods infected, or likely to be infected, with anthrax, and to provide for the disinfection of any such goods.

Ireland.

THE MINISTRY OF HEALTH BILL.

The Ministry of Health Bill, as it left the Commons on April 10th, contained a clause (10) constituting the Chief Secretary as a Minister of Health for Ireland, and providing for the appointment of an Irish Public Health Council to give advice and assistance and make proposals to the Chief Secretary. The bill directs that the Council shall consist of:

(a) The Vice-President and the two other Commissioners of the Local Government Board for Ireland; (b) the chairman and such two others of the Irish Insurance Commissioners as may be nominated by the Chief Secretary; (c) the Registrar-General of Births, Deaths, and Marriages in Ireland; (d) a registered medical practitioner, who shall act as chairman of the council under the direction of the Chief Secretary, and three other registered medical practitioners, one of whom shall be a woman and one of whom shall be a medical practitioner who is registered on the *Medical Register* in respect of a diploma in sanitary science, public health, or State medicine; (e) six other persons having practical experience of matters relating or incidental to or affecting the health of the people.

The Chief Secretary would appoint a chairman and also the members enumerated under (d) and (e). There is provision also for the payment of a salary to the Chairman of the Council.

The proposals have been under the consideration of a large meeting last week of the medical profession, when Mr. R. J. Johnstone, F.R.C.S., Chairman of the Local Committee, was in the chair. Strong feelings of dis-appointment at the constitution of the Irish Public Health Council were freely expressed. There is a fear that the new committee will be practically nominated by the Local Government Board in Dublin, and will become a mere appendage to that Board, which the medical profession holds responsible for the backward state of public health in Ireland. The following resolution was carried unanimously, and it was determined to ask the Chief Secretary to receive a deputation during his forthcoming visit to Belfast:

That the medical profession in Belfast regret that no opportunity was found for the profession in Ireland to place their views before the Government, and that no organization representative of Irish medical opinion was consulted prior to the drafting of the Irish clauses in the Ministry of Health Bill. They object to the constitution of the Irish Public Health Council to be established under the bill, the object of which is to give advice and assistance and to make proposals to the Chief Secretary in connexion with his powers and duties under the Act—first, because there is not sufficient representation of the medical profession on the Council; and, second, because those to be appointed must be nominated by the Chief Secretary, thus denying to the medical profession the right to select their own representatives, a democratic principle conceded by the precedent established in the Central Midwives (Ireland) Act of 1918. The medical profession in Belfast believe that unless all parts of Ireland are adequately represented in this Advisory Health Council it will become a mere centralized body, largely composed of officials, and carrying little weight or influence.

CHANGE IN MODE OF APPOINTMENTS OF POOR LAW MEDICAL OFFICERS.

A sealed order has been forwarded to all the boards of guardians in Ireland amending the provisions of the general regulations and the dispensary rules so as to give power to the boards of guardians when a vacancy occurs in any dispensary district to promote, with the consent of the Local Government Board, by transference to such a district, one of the existing medical officers without going through, as heretofore, the usual formalities of an election. Beyond requiring the consent of the Local Government Board, the order does not impose any obligation on the guardians to make the promotion on the ground of the length of service and merit of their medical officials. Even if the promotion as made by the guardians did not, on its merits, receive the consent of the Local Government Board, it will remain open for the guardians, in the case of any doctor they favoured, to give effect to their wishes by appointing him through the usual procedure of an election, and thus insist on the consent of the Local Government Board.

Correspondence.

PROPHYLACTIC USE OF QUININE IN MALARIA.

SIR,—Colonel Sir Ronald Ross, K.C.B., K.C.M.G., has requested me to state my opinion for publication with regard to the value of "prophylactic quinine" as a preventive of malaria to those with no history of infection. It was his desire that I should have made a statement at the recent meeting of the British Medical Association in London during the discussion on malaria, but this was not possible owing to lack of time.

During the period I served with the 12th Corps, British Salonica Force, quinine for this purpose was given in the following dosage:

1916: 5 grains and 10 grains on two successive days in the week, the former amount being more generally employed.

1917: (a) 10 grains on two successive days weekly.

(b) 10 grains on two successive days twice weekly on Wednesday and Thursday and Saturday and Sunday.

(c) 10 grains daily.

(d) 15 grains daily.

(e) 20 grains daily.

The three last amounts were given temporarily to troops a few days before going into, during the period of occupation of, and for a few days after coming out of, highly malarial parts of the front trenches.

This dosage completely failed to prevent the incidence of malaria. In one battalion where the large doses of daily quinine were given there was little apparent sickness, the daily dose kept down pyrexia, and the men were thus enabled to carry on with their duties; but after some weeks it was found that these men were affected by chronic malaria as shown by the presence of the parasite in the blood, enlargement of the spleen, anaemia, etc., necessitating their admission to hospital in large numbers. It was estimated that at least 80 to 90 per cent. of units were infected.

In 1918 it was decided to give no prophylactic quinine, as the general opinion amongst the majority of medical officers was that no dose that could be tolerated had any protective value to troops exposed under campaigning conditions. Reliance was placed on other methods of malarial prophylaxis and cases treated as they occurred.

With this opinion I am in entire agreement.—I am, etc.,

G. T. RAWNSLEY,

Grantham, April 12th.

Colonel, late D.D.M.S., 12th Corps.

TALKING IN SLEEP.

SIR,—Few opportunities occur for a medical man to study talking in sleep; he sees his patient either in the waking stage, or if in a hospital the night round is made too hurriedly, and in most cases too early, to catch the talking sleeper. For the past month or so I have been myself a patient in a crowded ward, and, a poor sleeper when in good health, have lain awake night after night listening to the automatic piping of these night birds.

I have, in a rough way, been able to form some conclusion as to the periodicity of sleep talking. The maximum period is from 12 p.m. to 2 a.m., but there is a lesser period of activity within the first half-hour of "dropping off" to sleep.

The percentage of "talkers" is astonishing—60 per cent. in my ward indulged in the habit—and the type of patient ranged from the phlegmatic reserved person to the mercurial and excitable.

Often a sentence is begun clearly and distinctly, but trails off towards the end to an indistinct blur. An amusing and interesting exception to this occurred in the very bed next to mine. A patient aged 35, a quiet and reserved type of Scotchman, and by no means "pious," startled me at 1.30 a.m. by singing in a stentorian voice, that awakened everybody but himself, a complete verse of "Abide with me." The melody and words were perfect, and there was not the faintest suspicion of wavering or blurring. This, of course, is unique. I should mention that during the afternoon we had discussed the loss of the *Titanic* and the singing of the hymn "Nearer, my God, to Thee."

It is much more usual for people to swear than to sing hymns in their sleep. They will grind their teeth and

mutter maledictions, after the fashion of the villain of melodrama.

Sometimes the emotion is the opposite of hatred. At midnight, a subaltern in the bed opposite, who would never have dreamed of putting the matter so crudely in his waking moments, shouted: "Sister, I'll be damned if I go to sleep unless you hold my hand." He then added something else, and—I suppose I must say, fortunately—this was blurred.

One speaker will often start another going in an adjacent bed, and in the instance mentioned of the Scotchman singing "Abide with me," the night sister, who was seated at her little table near by, assured me that it was the padre in the next bed who started him off—but this seems too "rich" to be true.

It is interesting to note that the hearing faculty shares the nocturnal activity of the speech centre, for your sleep talker will answer a question, or at the very least give clear indication that he has heard you.

There is no doubt that people give away secrets in their sleep talk; hence there is wisdom as well as wit in the line of the song, "If you talk in your sleep, don't mention my name."—I am, etc.,

E. COPLANS,

Captain R.A.M.C.(T.).

Constantinople, March 17th.

THE DISCUSSION ON WAR NEUROSES.

SIR—It is perhaps partly owing to my neglect to furnish a report of my speech at the Section of War Neuroses that I am described in to-day's JOURNAL as speaking "in favour of the use of psycho-analytical methods in the treatment of patients with war neuroses."

The words "psycho-analysis" or "psycho-analytical" were not used by me, for I know not their meaning in the mouths of other people. I said my notes show that more than half the patients of the "shell-shock" group have forgotten terrifying war experiences, and that the revival of the memory of those experiences is followed by the disappearance of the symptoms, whether tics, stammers, tremors, depression, anxiety, phobias, obsessions, fits, or terrifying dreams.

I ask the organizers of the meeting why this straightforward method of treatment, used by the five medical officers in a little advertised hospital to which Colonel F. W. Mott is consulting physician, and by many others elsewhere, was never referred to in the course of a three hours' discussion, except for my remarks twelve minutes before the close of the meeting? The principle is the most important lesson taught us by the war.

I ask Dr. Gordon Holmes whether he places me among the "mesmerists, psychologists, and psycho-analysts" whom he attacked, and concerning whose methods he suggested there should be issued a warning?—I am, etc.,

Epsom, April 12th.

MILLAIS CULPIN.

** We regret that in the brief account given last week of the discussion on war neuroses our reporter should have fallen into the error of stating that Captain Culpin spoke in favour of the use of psycho-analytical methods, and we recognize that the methods used by Captain Culpin cannot properly be so described. We have referred his letter to Dr. Gordon Holmes, who informs us that his remarks had no reference to Captain Culpin's methods, with the nature of which he is unacquainted.

THE NAVAL MEDICAL SERVICE.

SIR,—I was much interested in reading the letter from Acting Surgeon Commander Wills in your issue of April 5th, and I quite agree with his suggestions. It is a rare pity that a service which is otherwise so desirable should not provide better chances of keeping up one's professional knowledge. And this is more marked, as one's messmates are so very keen on their profession, and so full of the most recent ideas.

As to the "reply" by Surgeon Commander Martin, I would suggest that it is no reply at all. Surgeon Commander Wills writes of a Weekly Order, which says that the vaccine would shortly be available, and Surgeon Commander Martin writes of the vaccine when produced. As the latter would only be provided when volunteers were forthcoming, and as there is even still some difference of

opinion as to the values of various vaccines, I for one cannot see that Surgeon Commander Wills's statement was incorrect or his action wrong.—I am, etc.,

Essex, Surrey, April 13th.

Cecil B. F. Tivy.

NAVAL MEDICAL DEMOBILIZATION.

SIR,—In the JOURNAL of March 29th there is the announcement that the Central Medical War Committee is being wound up on account of the approaching general demobilization of officers from the Royal Army Medical Corps. There is no mention as to whether a similar demobilization of temporary surgeons Royal Navy may be expected to take place at the same time.

As you are aware, temporary surgeons Royal Navy, on joining the service in the earlier part of the war, signed a contract to serve for five years or the duration of the war. There appears to be some doubt as to whether the Admiralty will fulfil their part of the contract on the signing of the peace terms which appears to be imminent.

I am sure the majority of my fellow officers will agree with me when I state that we are not prepared to submit to any further extension of service under any subsequent Military Service Act. We expect the Admiralty to honour the original agreement, and it cannot be too strongly impressed upon them that we joined for hostilities only, and not to help them out of their peace time difficulties, caused by the paucity of medical officers in their permanent service.

Now, apparently, as we are to be deprived of the help of the Central Medical War Committee, we will have to fall back upon "the proper service channels." This involves much delay in submitting repeated requests through unsympathetic superior officers. These applications are always endorsed with the formula, "Cannot be spared," before they are finally forwarded.

May we hope for the active sympathy of the British Medical Association in this matter? We do not wish to be driven to the method suggested by some temporary officers in securing our release—namely, that of paying a visit to the Admiralty accompanied by our solicitors.—I am, etc.,

April 6th.

TEMPORARY.

MEDICAL DEMOBILIZATION.

SIR,—I have a son who volunteered for medical service on August 8th, 1914, and served in the front line from a few days after that date. He has so served through some of the hottest times of the war. He now cannot get demobilized although hundreds of conscripted men are doing so after short periods of service. This naturally appears to him to be an injustice, which he feels all the more keenly from his having sacrificed the most valuable period of his life (30 to 35), to the great detriment of his professional career.

I know some, and there are probably many, who are suffering from the same apparent injustice, but before appealing to the more public means of obtaining redress, I hope that you, Sir, will make some comment on what appears to be a matter affecting the welfare of the profession.—I am, etc.,

April 14th.

Z.

Our comment is that this was exactly the kind of thing we supposed would happen when the Secretary of State for War scrapped the scheme for medical demobilization drawn up by the Central Medical War Committee.

THE PRICE OF OPIUM AND COCAINE.

SIR,—In my opinion it is time that steps were taken to put an end to the extraordinary and unjustifiable prices of opium and its preparations and of cocaine. Apparently because these drugs are abused by a few moral degenerates the whole world of legitimate users must suffer. Cocaine particularly is now practically unusable in ordinary practice. There are, of course, substitutes, but they are not quite the same. The wholesale price of this in South Africa was, before the war, 15s. per ounce. It rose steadily to about 35s., and now, after peace, it has suddenly jumped to 25. The preparations of opium, so valuable in many other ways than as mere pain soothers, are equally expensive. This is not as it should be. It is surely not impossible

to provide for the millions being properly supplied while preventing a few hundreds from abuse.

I hope some committee of the Association will see its way to take the matter up with the Government in order to provide, for legitimate purposes, a proper supply at reasonable prices.—I am, etc.,

Bethulie, South Africa, Feb. 26th.

JOHN A. GRAHAM, M.B.

FEE FOR NOTIFICATION OF INFECTIOUS DISEASES.

SIR,—In your issue of April 12th you say that you are authorized to state that Dr. Addison has promised to receive a deputation on this question on the earliest possible date after Easter.

Many questions arise in every one's mind when a deputation is talked about. First, who and of what standing in the profession or the Association will be asked to attend? Our work makes us self-reliant, and I think for this time members of the profession who are general practitioners should be asked to express their views. Secondly, what is to be the line of attack? Has the Association no other idea than a frontal attack, which Dr. Addison has become accustomed to, and, in his usual diplomatic manner, dismisses with a wave of his hand as he shows you downstairs?

To me it seems that the time is now ripe for a flank attack. The whole profession, members and non-members of the Association, is willing to entertain any idea which would not only restore to us our former remuneration but also might lead to a substantial advance to help to meet the increased cost of living. I suggest that a postal vote be taken of the whole profession. For if a deputation went forward with a bag containing 15,000 affirmative signatures stating that unless our petition is granted every one will refuse to sign any more notification certificates, Dr. Addison will take only three minutes in considering how to reverse an outrageous enactment that has existed too long.—I am, etc.,

Glasgow, April 12th.

A. KENNEDY GLEN.

MEDICAL RECONSTRUCTION.

SIR,—I was pleased to see Dr. Rees's letter in the JOURNAL of March 29th. I have always been a loyal supporter of the British Medical Association, and intend to continue so, but at the same time I am strongly of opinion that the only way we can hold our own as medical men is by a strongly organized union such as the Medico-Political Union.—I am, etc.,

P. HUGHES DUDLEY, L.R.C.S., L.R.C.P.

Caxton, Cambs, April 1st.

THE PLIGHT OF THE YOUNG MARRIED DOCTOR.

SIR,—Does "W. B. S." (p. 428) ever look at your advertisement columns? Numbers of young doctors are required as partners in industrial neighbourhoods, and they are offered partnerships on easy terms of purchase. I have myself interviewed some, but one did not like the district, another the house, another did not want midwifery cases, another wished to live outside the town and come in daily—just what I want to do myself! In fact, apparently, none of them wanted work.—I am, etc.,

April 7th.

SENEX.

THE Goncourt prize for 1918 has been awarded to Dr. Georges Duhamel for his work entitled *Civilisation*. He is also the author of *La Vie des Martyrs*, a record of his experience as an army medical officer, a work which has won for him a considerable literary reputation.

THE work of the American Public Health Service in controlling malaria in and about cantonments in the United States has made the disease of comparatively little consequence in the war. In freeing various areas from mosquitos, 2,500 miles of ditches have been dug and 1,200 square miles of swamps drained. Seven hundred technical experts and 3,000 labourers were employed in the campaign in the autumn of 1918. This number has been reduced to 150 experts and 600 labourers. Most of these men will enter the employment of cities and towns in which they worked for the Government. Besides safeguarding areas exclusively under military authority, it has been found necessary to control the civilian areas surrounding camps.

COLONEL H. M. W. GRAY, C.B., C.M.G.

A DINNER was given to Colonel H. M. W. Gray, C.B., C.M.G., at the Criterion Restaurant, London, on Saturday, April 12th, by some of the surgeons who had worked under him in France. At the conclusion of the dinner Colonel Gray was presented with a large silver bowl as a permanent memento of the admiration with which his work in France was regarded by all who had served under him in a surgical capacity. Reference was made by various speakers to the number of new developments in the treatment of war wounds for which Colonel Gray had been responsible. When great numbers of men are working together in a common cause, and are contributing their quota to the common fund of knowledge, it is often difficult to apportion the praise for a particular advance to any one individual. However, in the mind of all those present, Colonel Gray stood out conspicuously as a pioneer of improved methods. Even where methods that he had advocated were superseded by newer ones the foundations of the new developments often rested on the work that Colonel Gray had originally done. The success of the salt-pack method advocated in 1915 by Colonel Gray depended on the careful surgical preparation of the wound, in other words on the excision of all damaged tissue; and how much of the improvement later achieved in the treatment of war wounds had not resulted from the recognition of this truth? Emphasis was also laid by various speakers on the excellence of the relations that existed between Colonel Gray and those who had been privileged to work under him.

In replying to the toast Colonel Gray characteristically gave credit for much that he had been able to do in France to the initiative and ability of those working under him. He said that he would look back on his four years in France as one of the happiest periods of his life, and that these pleasant memories would be in great part due to the cordial relations that had existed between himself and the surgeons working at the various hospitals and casualty clearing stations in his area.

The officers present were Lieut.-Colonel Scrimger, V.C., C.A.M.C.; Majors Tabuteau, D.S.O., J. Austin, Gordon Taylor, J. Anderson, D.S.O., J. E. H. Roberts, W. Mumford, O.B.E., Hathaway, Ross Millar, Birkbeck, Hamilton, Lockwood, D.S.O., M.C., and Horton; Captains R. Lawrie, O.B.E., Milligan, and K. M. Walker. Several others who wished to attend were unavoidably detained.

Universities and Colleges.

UNIVERSITY OF DURHAM.

At the Convocation held on March 29th the following degrees were conferred:

- M.D. (Essay).—J. H. Barclay. *For Practitioners of Fifteen Years' Standing*: G. Lucas.
M.S.—T. A. Hindmarsh.
M.B. AND B.S.—D. G. P. Bell, J. M. Brydson, Iris M. Cheeseright, Rev. S. Foskett, P. Hickey, J. P. Higham, H. W. Walther.
D.P.H.—J. M. G. Ewing.

UNIVERSITY OF GLASGOW.

At a graduation ceremony on April 4th the following medical degrees were conferred:

- M.B., CH.B.—J. W. Peden. *J. Donald, J. J. Hewitt, †Georgina Murdoch, †Mary T. L. Clark, †J. M. Ritchie, A. S. Bisset, A. Black, J. Bradford, Charlotte A. Douglas, J. C. Dow, Margaret H. Grant, J. A. Hamilton, Helen Hogg, S. H. W. Kamesasse, R. E. Kerr, A. C. Lindsay, R. T. McGibbon, W. S. McIntyre, G. M. Millar, A. S. Miller, M. S. Molema, W. B. Moore, J. A. O'Connor, J. Pollock, Jane E. Shortt, Muriel A. Stowe, H. D. Wallace, R. K. Watt.

* With honours. † With commendation.

The following candidates have been approved at the examinations indicated:

- M.B., CH.B. (M., *Materia Medica and Therapeutics*; P., *Pathology*).—J. L. Anderson (M., P.), J. Baird (M., P.), A. Barr (M., P.), B. Barrowman (M., P.), M. Brown (M., P.), A. Campbell (M., P.), J. G. Campbell (M., P.), R. K. Duguid (P.), R. Fletcher (P.), J. Frew (P.), P. D. Gillespie (M., C. Glen (M.), C. N. Gordon (M.), A. Gray (P.), T. O. Howie (M.), H. W. Howison (M.), P. Hutchison (M.), T. T. Hutchison (M.), W. M. Knox (P.), B. Levine (M., P.), A. L. McAdam (M.), A. M. McClure (M., P.), W. R. McCrue (M.), J. Macdonald (M., P.), E. Macfarlane (M.), J. Macfarlane (M.), A. M'C Macintosh (M., P.), D. L. Macintyre (M., P.), R. M. I. McKeen (M., P.), D. MacKenzie (P.), K. MacKenzie (M.), H. H. MacKinnon (M.), J. P. McMillan (M., P.), P. MacMurray (M., P.), J. C. McNaught (M.), M. F. G. Main (P.), *A. Markson (M., P.), N. M. E. Montgomery (M., P.), J. B. O'Neill (P.), G. Paterson (M., P.), J. Paterson (M., P.), W. J. Payne (M., P.), J. Prentice (M.), D. Reid (P.), J. Reid (M., P.), R. S. Reid (P.), I. C. Robertson (M.), I. MacR. Sandilands (M.), H. E. Seiler (M., P.), J. Sillars (P.), A. W. Sinclair (P.), *L. Sive (M., P.), J. Smart (M.), *A. G. Smith (M., P.), F. C. Speechly (P.), P. M. Speed (P.), J. Stirling (M., P.),

H. A. Summers (P.), D. F. S. Thomson (P.), R. J. Watson (M.), J. D. Whiteford (M.), J. D. Williamson (P.), J. Young (M.), Mary Baird (M., P.), Amy M. Fleming (M.), Dorothy J. L. Gallic (M.), Marion P. Hogg (M.), Marie J. McNaught (M., P.), Marjorie Mitchell (P.), Isobel Reid (P.), Christina S. Stoddart (M.), Lillian J. T. White (P.). *Medical Jurisprudence* (New Regulations): R. T. S. Bowler, J. Caddies, T. Fletcher, C. M. Forbes, J. F. Hamilton, R. G. Howat, D. W. Humble, Chung Un Lee, P. McDonald, F. McVean, R. Mair, J. M. K. Maxton, J. Orr, J. Shaw, J. Smart, P. M. Speed, D. M. D. Sproull, J. Stewart, Mabel M. Maclean, Helen L. Ralston, Kathleen Eleanor Hyde Ruthford. (Old Regulations): D. M. Macmillan, R. S. Reid, D. F. S. Thomson.

* Passed with distinction.

OFFICERS' TRAINING CORPS.

In view of the services of the University of Glasgow Officers Training Corps during the war, and of the importance of the Glasgow Medical School, the War Office has intimated to the Vice-Chancellor that the formation of a medical unit of the corps has been sanctioned by the military authorities, and that its formation may now be proceeded with.

SCOTTISH UNIVERSITIES ENTRANCE BOARD.

The Entrance Board intimates that it proposes to issue for the consideration of the universities, under Section VII of General Ordinance No. 3 (Regulations as to admission to the Scottish Universities for purposes of graduation) a general regulation providing that the standard of preliminary education required for admission to the Faculty of Medicine shall be assimilated to that for admission to the Faculties of Arts or Science.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

The following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Pathology*: *E. H. C. Allen, *A. J. L. Snijman, *J. A. Smith, *F. Z. van der Merwe, *H. V. Exner, *Janie Millar Cummins, I. Levy, E. H. Frazer, J. C. Coetzee, L. Wigoder, Moira M. Brown, E. W. S. Deale, J. R. Waugh, T. Madill. *Pathology—completing examination*: P. I. Levitt, F. W. Robertson. *Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene*: P. J. Healy.

PART II.—*Medicine*: *A. R. Aidin, F. J. Smith, A. H. Thompson, Rita Henry, Gertrude Rice, A. J. Vorster, R. Resneskov, J. J. G. de Kock, J. E. Hill, A. L. Wilson, J. H. Coolican, F. J. G. Battersby, P. Casey. *Surgery*: C. D. Brink, J. C. J. Callanan, R. B. N. Smart, A. R. Aldin, V. G. Walker, A. L. Wilson, J. J. G. de Kock, R. Resneskov, J. T. Mynhardt, Mary C. Sheppard, H. B. van der Merwe, F. J. G. Battersby, G. F. Keatinge. *Midwifery*: *R. Counihan, *C. J. de V. Shortt, J. J. G. de Kock, V. G. Walker, R. Resneskov, J. F. Sheppard, A. I. Steyn, A. Blagoff, A. J. Vorster, Jessie Gilbert.

D.P.H., PART I (*Bacteriology, Pathology, Chemistry, Physics, and Meteorology*).—J. W. Scharff, R. Condy.

PART II (*Sanitary Engineering, Vital Statistics and Public Health, Hygiene and Epidemiology*).—H. S. Sugars, J. W. Scharff.

* High marks.

QUEEN'S UNIVERSITY, BELFAST.

At the spring graduation ceremony, on March 25th, the following degrees and diploma were conferred:

- M.B., B.Ch., B.A.O.—*G. D. F. McFadden, *H. Poston, J. Barron, T. G. Campbell, Jean Clarke, T. Dickey, C. W. A. Emery, J. W. Gaston, M. G. Kierans.
D.P.H.—S. Miller.

* With second class honours.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Re-election of President.

AN ordinary comitia of the Royal College of Physicians of London was held on April 14th, at 5 p.m., when the President, Dr. Norman Moore, delivered the customary annual address, in which he mentioned the various honours and decorations conferred upon Fellows, Members, and Licentiates during the past year, and reviewed the work done by various committees of the College, including the Committee of Reference and the Joint Committee on the Ministry of Health. He pointed out that the College, at its foundation 401 years ago, consisted of 6 Fellows, whereas there were now 368 Fellows, 492 Members, and 13,645 Licentiates on the Roll. He then read brief biographies of the 18 Fellows who had died during the year—namely, Dr. Alfred Ellington Stansfeld, Sir Herman Weber, Dr. Edward Liveing, Dr. Frederick Thomas Roberts, Dr. Richard Grainger Hebb, Dr. George Ogilvie, Dr. Robert Liveing, Dr. Edward Thomas Wilson, Dr. William Vicary Snow, Sir James Sawyer, Dr. Robert Saundby, Dr. Alfred Henry Carter, Dr. John Michell Clarke, Dr. William Barnett Warrington, Dr. William Allan Sturge, M.V.O., Dr. Thomas Buzzard, Dr. Frederick Eustace Batten, and Dr. Leonard George Guthrie. On the motion of the Treasurer, the President was asked to allow his address to be printed. Dr. Norman Moore was then re-elected President for the ensuing year.

The Dogs' Bill.

The following resolution, proposed by Sir Wilmot Herringham and seconded by Sir William Hale White, was carried unanimously:

The Royal College of Physicians of London, in full meeting, hereby records its opinion that the passing into law of the Dogs' Protection Bill now before the House of Commons will greatly retard the progress of our knowledge with regard to the prevention and treatment of disease.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY council was held on April 10th.

Jacksonian Prize.—This prize was awarded to Mr. J. A. Cairns Forsyth for his dissertation on "Injuries and diseases of the pancreas and their surgical treatment." The subject for the year 1920 is "The results and treatment of gunshot injuries of the blood vessels."

Triennial Prize.—The subject chosen for the next prize is "The anatomy, morphology, and age changes of cervical ribs in men, including a description of the associated ligaments, muscles, blood vessels, and nerves."

Election to the Fellowship.—The following two members of twenty years' standing were elected Fellows: Professor J. G. Adams, F.R.S., Colonel C.A.M.C., Sir T. H. J. C. Goodwin, K.C.B., C.M.G., D.S.O., Director-General Army Medical Service.

University of London.—Sir Charles Ballance was elected as the Representative of the College on the Senate of the University of Leeds in the vacancy occasioned by the retirement of Sir Alfred Pearce Gould, K.C.V.O.

Postponed Hunterian Lecture.—Professor T. B. Layton's postponed lecture will be given at 5 p.m. on Tuesday, May 6th, on "Surgical aspects of the collection and transport of wounded." It will be illustrated by photographs taken in Palestine.

American Medical Association.—A letter was read of April 4th from the Local Government Board stating that delegates from the medical profession of this country are invited to attend the annual session of the American Medical Association in Atlantic City, New Jersey, U.S.A., from June 9th to 15th, 1919, and the convention of the Ontario Medical Association at Toronto from May 28th to 30th, 1919. Mr. Ernest W. Hey Groves was appointed the College delegate.

Historical Lecture in Anatomy and Surgery.—A letter was read from the Clerk to the Barbers' Company reporting that at a recent court of the company it was resolved that the company offer the annual sum of £10 10s. for five years, for the purpose of instituting at the Royal College of Surgeons an historical lecture in anatomy or surgery, to be called the Thomas Vicary lecture, the appointment of the lecturer being in the gift of the College. The offer was accepted.

Vacancy on the Court of Examiners.—A vacancy occasioned by the retirement of Sir Charles Ballance will be filled up at the ordinary council on May 8th.

Sir James Paget.—The thanks of the council were given to Mr. Stephen Paget for pre-enting to the College the microscope used by his father, Sir James Paget.

LONDON SCHOOL OF TROPICAL MEDICINE.

The following candidates have passed the examination of the school at the termination of the fifty-ninth session (January-April, 1919):

*M. F. Sorour, *H. J. Smvly, E. St. J. Seelly, H. U. Leembruggen, V. B. Kyle, J. B. Bostick.

* With distinction.

Obituary.

ALFRED GEORGE BATEMAN, M.B., C.M.ABERD.,
General Secretary of the Medical Defence Union.

THROUGH the death of Dr. A. G. Bateman, General Secretary of the Medical Defence Union, the medical profession has lost one of its most notable members. Probably no one was better acquainted with the customs, conventions, and traditions of medical practice or with the rights, liberties, privileges, duties, and ethical obligations of medical men in their relations with each other and with the public. As chief executive officer of the Union, in the intervals of meetings of the Council, he was, during his long period of office, called upon to advise large numbers of medical men on innumerable troubles and difficulties arising out of medical practice. His advice was always sound and useful, and almost invariably approved and confirmed by the Council.

Dr. Bateman's decisions were always prompt and always decided, but never hasty or unconsidered. They were the combined result of quick mental processes and manifold opportunities. In the course of his official experience he had accumulated a large fund of apposite knowledge which served as a safe and sure guide to his judgement. He had, moreover, a remarkable capacity for taking pains. At all times, whenever a doubt or difficulty arose, he never hesitated to reconsider a question. In the end he was always able to support his considered opinion by appeals to the latest and best authorities, whether personal or literary. His acquaintance with the few "black sheep" of the profession, with quacks, tricksters, and unqualified practitioners generally, was indeed extensive and peculiar. He seemed to have an instinct for finding out offenders and a genius for bringing them to justice. He spent months, and sometimes even years, in watching or tracking suspected persons, but he did not strike or invoke

the help of the courts of justice or the higher medical tribunals until he was in possession of complete legal proof of guiltiness. The care and accuracy with which he prepared his cases gained him the confidence of the Public Prosecutor and other public and medical authorities. If some of the cases which he was instrumental in bringing to light were published, they would seem to belong to the realm of fiction and romance rather than to the ordinary world of sober fact.

For many years Dr. Bateman was in poor health, and suffered from severe attacks of asthma that would have incapacitated a man of less physical and moral courage. In spite of ill health he devoted all his talents to the careful and painstaking discharge of his duties. His sympathy was quick to respond to cases of hardship and injustice, but he had little toleration for the obstinate and wrong-headed. He did not hesitate to speak his thoughts freely to those whom he believed to be guilty of wilful wrong-doing. He did not suffer fools gladly. On the other hand, he never spared himself in the endeavour to strengthen the weak, to protect the innocent, and to guide the erring into the right path.

JOHN TWEEDY.

We are indebted to Mr. W. E. HEMPSON, solicitor to the Union and to the British Medical Association, for the following tribute of appreciation and regard:

A. G. Bateman was of strong personality—a many-sided and much gifted man, and a keen judge of character. I was first brought in touch with him about twenty-seven years ago at a critical period in the history of the Medical Defence Union, and from that time onward to the date of his death we have worked together in the closest harmony and good fellowship. His loss to the profession is not to be estimated. His life was whole-heartedly devoted to his work, to the entire exclusion of every other thought or consideration, and there are many who will be ready to admit that, due to his wise prudence and judicious pilotage through dangerous shoals, professional disaster to them has been averted. Bateman was a veritable glutton for work, tenacious of purpose and impatient of compromise where the professional reputation of a medical man was concerned, and possessing withal a far-sighted appreciation of relevant and essential attributes. His abilities and shrewd detective instincts were seen to best advantage when engaged in tracing out the past history of an unqualified person or a suspected impersonator. In any matter of this nature which he took in hand success was assured, and the records of our criminal courts afford eloquent testimony to this end.

It is due to his energies that the Medical Defence Union has been brought to the eminently successful position which it occupies to-day. During his thirty-five years' active connexion with that body he has been instrumental in raising it from a humble starting point to the high level which it has now attained, both in so far as membership and good work are concerned. Moreover, the services which he and Mrs. Bateman rendered during the earlier years of the war in aid of the Belgian refugees recently received well merited and distinguished recognition at the hands of King Albert. Few men have been privileged to accomplish as much in a lifetime, and Bateman's courageous fortitude in combating infirmity of health during the later years of his life commanded the deepest admiration and respect. I write of him as I knew him—a staunch friend and loyal colleague—and with a true sense of the loss which his death means to me.

By the death of ROWLAND POLLOCK on March 7th, after a brief illness, from pneumonia, the inhabitants of Acton, especially the poor, have sustained a grievous loss. He was the youngest son of George Annesley Pollock, a well known sportsman and landowner of County Meath. He received his medical education at Dublin, where he obtained the diplomas of L.R.C.P. and S.I. in 1882. He settled first at Tunbridge Wells, and moved to Mill Hill Park, Acton, in 1896, where he practised up to the time of his death. Rowland Pollock's great aim was to do his work thoroughly and conscientiously, and with this ideal he early made himself a perpetual post-graduate at the West London Hospital. He was in great request at the Acton Hospital in all cases of emergency, and never refused a call to a poor patient day or night. Rowland

Pollock endeared himself to every one with whom he came in contact by his genial and sympathetic personality and his courteous and charming manner. The deep sympathy shown by all classes of the community at his funeral testified to the high respect in which he was held. He married in June, 1887, the youngest daughter of the late John Gibson, B.D., vicar of Brent-with-Furneaux, Pelham, Herts, and leaves a widow and invalid son.

DR. WALTER J. CLARKE died on March 19th at his residence, Gravelly Hill, Birmingham. He was educated at the Birmingham Medical School and at St. Bartholomew's Hospital, London. After taking the M.R.C.S. and L.R.C.P. diplomas he acted as house-surgeon to the Queen's Hospital, Birmingham, and subsequently started practice at Gravelly Hill, where he initiated and delivered courses of lectures in St. John Ambulance work with great success at a very early stage of that movement. He developed his practice on scientific lines, acquiring an excellent installation of x-ray and high frequency apparatus, superior to that of many of the provincial hospitals; in this direction he was one of the early pioneers in local advance. He was gazetted Captain R.A.M.C.(T.) *à la suite*, but resigned his commission before the war on account of ill health. He was subsequently appointed medical officer to the V.A.D. Hospital, Norlands, Erdington, and acted in that capacity until some weeks before his death. He leaves a widow and two sons, the elder of whom, Captain L. Beale Clarke, is serving in Salonica as president of a medical classifying board.

DR. HENRY AMBROSE GRUNDY BROOKE, the well known dermatologist, who died recently at his residence in Manchester, was born in 1854 at St. Helens, Lancashire, where his father practised as an architect. He received his professional education at Owens College, Manchester, and Guy's Hospital, graduating B.A.Lond. in 1874, and M.B. in 1880, in which year he obtained the M.R.C.S. diploma. He studied also in Vienna and Paris, and sat under Kaposi, Besnier, and Unna. In 1883, after serving as house-physician and house-surgeon to the Manchester Royal Infirmary, he began practice as a dermatologist. He founded the Manchester and Salford Hospital for Skin Diseases, which is now one of the largest and most completely equipped hospitals of its kind in Great Britain, and continued to hold office as physician until the time of his death. Dr. Brooke was a member of the Dermatological Society of London, and a corresponding member of the Dermatological Society of Paris. He was the author of numerous articles on skin affections, and was founder and co-editor with Sir Malcolm Morris of the *British Journal of Dermatology*.

COLONEL EDMUND BARON HARTLEY, V.C., C.M.G., Cape Colony Medical Corps (retired), died of heart failure following influenza on March 20th, aged 71. He was the eldest son of Dr. Edmund Hartley of Ivybridge, Devon, where he was born on May 6th, 1847. He served as a clerk in His Majesty's Inland Revenue from 1867 to 1869, after which he entered on the study of medicine at St. George's Hospital, taking the diploma of M.R.C.S. in 1874 and that of L.R.C.P. Edin. in 1880. From 1874 to 1877 he was district surgeon in Basutoland. In 1877 he joined the Cape Colony forces as surgeon to the Cape Mounted Rifles; in 1878 he was appointed principal medical officer of these forces, and subsequently colonel in command of the Cape Medical Corps. He served in the Zulu war of 1877-79, including the Galeka, Gaisa, Morosi, Tembu, and Basuto campaigns, gaining the V.C., medal, and clasps; in the Bechuanaland expedition of 1897, when he was wounded; and in the South African war, 1900-2, receiving the medal with five clasps and the C.M.G. He was decorated with the Victoria Cross for valour in rescuing and bringing in wounded men under a heavy fire at the unsuccessful attack on Morosi's Mountain on June 5th, 1879.

COLONEL ARTHUR OWEN EVANS, Indian Medical Service (retired), died at Lyndhurst, Hampshire, on February 22nd, aged 59. He was born on July 30th, 1859, educated at St. George's Hospital, and took the diplomas of M.R.C.S. in

1880 and L.R.C.P. Lond. in 1881. After acting as house-surgeon of Dewsbury Hospital he entered the I.M.S. as surgeon on March 31st, 1883. After four years' military duty he was posted to civil employ in Burma, where he was for many years civil surgeon of Moulmein, and after his promotion to administrative rank, inspector-general of civil hospitals. He served in the Burma war in 1885-7, and received the medal.

DR. HENRI HENROT, mayor of Rheims, who played a heroic part during the war, died suddenly at the Ministry of the Interior, Paris, during a sitting of the Superior Council of Hygiene. He had just been elected vice-president of that body. He was a corresponding member of the Académie de Médecine. He was 85 years of age.

The Services.

CASUALTIES.

ARMY.

Wounded.

Lieutenant S. L. Bhandari, I.M.S. (temporary).

Missing.

Major F. M. Taylor, R.A.M.C.(S.R.).

DEATHS OF SONS OF MEDICAL MEN.

Peddie, Alexander William Ponsonby, Captain Lincoln Regiment, eldest son of Dr. H. A. Peddie of Edinburgh, reported wounded and missing on September 14th, 1914, now presumed killed on that date.

HONOURS.

COLONEL (temporary Major-General) GEORGE B. STANISTREET, C.B., C.M.G., has been appointed a Commander of the Order of the Crown of Italy in recognition of distinguished services rendered during the course of the campaign.

The King of the Belgians has conferred the distinction of Grand Officier—Ordre de la Couronne and the Croix de Guerre medal upon Major-General (temporary Lieut.-General) Sir Charles Burtchall, K.C.B., C.M.G., in recognition of distinguished services rendered during the campaign.

Lieut.-Colonel Alan Frankland Jolley, 9th Australian Field Ambulance, A.A.M.C., and Major John V. H. Guest, 8th Field Ambulance, A.A.M.C., have been presented by the King of the Belgians with the Croix de Guerre in recognition of distinguished services rendered during the campaign.

The King of Hellenes has conferred the Medal for Military Merit upon Surgeon Sublieutenant Alexander L. Brough, R.N.V.R., for distinguished services rendered during the war.

DEMOBILIZATION OF SCOTTISH DOCTORS.

WITH reference to the announcement in the Scottish press on March 26th to the effect that the Ministry of National Service, as from March 31st, discontinued its functions in connexion with the demobilization of all medical officers serving with His Majesty's forces, we are asked to intimate that the advisory relations which existed between the War Office, the Admiralty, and the Scottish Medical Service Emergency Committee prior to the establishment of the Ministry of National Service have been resumed as from that date. All applications for the release of Scottish doctors should, as formerly, be made to the Secretary of the Committee, Royal College of Physicians, 9, Queen Street, Edinburgh.

AUXILIARY ROYAL ARMY MEDICAL CORPS FUNDS.

AT the quarterly committee meeting of the funds held on April 4th three grants were made to cases in the Benevolent Branch for officers, and two grants to cases in the Relief Branch for the rank and file. These funds are for the relief of widows and orphans of commissioned officers and N.C.O.'s and men of the rank and file of the R.A.M.C. Special Reserve, Territorial Force, and New Armies, and also for the relief of the children of those who have been so severely damaged in the present war that they need help for the education of children. Requests for relief should be addressed to the honorary secretary, Sir William Hale White, at the offices of the funds, at 11, Chandos Street, Cavendish Square, W.1.

WAR EMERGENCY FUND OF THE ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Executive Committee of the War Emergency Fund of the Royal Medical Benevolent Fund, held on April 4th, when Lieut.-Colonel Sir Alfred Pearce Gould was in the chair, several applications for assistance were received, and grants amounting to £1,710 were made. Applications for assistance, marked "Confidential," should be addressed to the Honorary Secretary of the Fund, 11, Chandos Street, Cavendish Square, W.1. About £22,000 has been received in support of the fund, but it is believed that a further £8,000 will be required. Subscriptions should be sent to the honorary treasurer at the above address.

Medical News.

At the annual meeting of the Society for the Study of Inebriety Sir Alfred Pearce Gould, K.C.V.O., F.R.C.S., was elected president in succession to Sir William Collins, M.D.

DR. LIVINGSTON FARRAND, president of the University of Colorado, has been appointed chairman of the Central Committee of the American Red Cross in succession to Mr. William H. Taft.

The firm of Mayer and Meltzer will in future be known as Mayer and Phelps. The business will be conducted at 59-61, New Cavendish Street, W.

THE Sultan of Egypt has conferred the insignia of the Order of the Nile upon the following members of the medical profession in recognition of valuable services rendered:—*Second Class*: Dr. A. Granville, C.M.G. *Third Class*: Dr. J. E. Creswell, M.B.E. *Fourth Class*: Dr. E. V. Oulton.

At the request of the Middlesex War Pensions Local Committee Lieut.-Colonel A. F. Hurst, R.A.M.C., M.D., officer in charge of the Seale Hayne Military Hospital, will give a lecture on Monday, April 28th, at the Central Hall, Westminster, on psychotherapy in diseases and injuries resulting from the war. The Committee invites medical practitioners in Middlesex to attend the lecture.

PROFESSOR ARTHUR KEITH, Conservator of the Museum of the Royal College of Surgeons of England, will give a demonstration once a week for three weeks, beginning on Friday, April 25th, to medical students and practitioners, and to first-aid and ambulance students. The demonstrations will be given at 5 p.m. on each day, and will deal with gunshot injuries of the skull, bones, and joints, and injuries to the pelvis and pelvic viscera.

COLONEL ALBERT CARLESS, M.S., F.R.C.S., has accepted the invitation of the Council of the Barnardo Homes to assume the post of Medical Director to the Homes from October next. Colonel Carless is resigning the professorship of surgery at King's College, and the post of surgeon to King's College Hospital, in order to give his whole time to the organization of the medical and hygienic work of his new office.

A COMMITTEE has been appointed by the Home Secretary to inquire into the organization of the medical service provided for the Metropolitan Police Force, and to report as to the desirability of any alteration of the present system. The chairman is Sir Hamar Greenwood, Bt., M.P., and the other members are Sir W. Watson Cheyne, Bt., M.P., Major-General Cuthbert S. Wallace, C.B., Major H. Barnes, M.P., Mr. John F. Moylan, C.B.E., and Dr. John Sinclair. The secretary is Mr. F. C. Johnson, to whom communications should be addressed at the Home Office, Whitehall.

THE Society of Public Analysts, at its meeting on April 2nd, received a note by Helen Masters, B.Sc., stating that casseroles of various descriptions, particularly some said to be of French make, were found to yield considerable proportions of lead on treatment with 4 per cent. acetic acid and with dilute solutions of other acids such as would be present in certain cooking operations. The soluble lead was not all extracted by one operation, but after two or three treatments, each subsequent treatment appeared to yield a fairly constant quantity.

THE British Scientific Products Exhibition, arranged by the British Science Guild, will be open in the Central Hall, Westminster, from July 3rd to August 5th. Its objects are to illustrate recent progress in British science and invention, and to help the establishment and development of new British industries. There will be twelve sections, among them one for medicine and surgery, including bacteriology and x-ray apparatus. Another section will be for chemistry, in which products, plant, laboratory ware and apparatus will be shown. Other sections are those for fuels, electrical appliances, and physics.

IN the JOURNAL of January 11th, 1919, p. 61, a brief report was given of the conviction at the Thames Police Court of Marcus Woolf Cohen, M.B., who with two other persons was charged with being concerned in "doping" a Russian subject to make him unfit for military service. Dr. Cohen was alleged to have given a false medical certificate preparatory to the commission of the offence. He denied the charge, and was defended by Sir E. Marshall Hall. He was found guilty and sentenced to

six months' imprisonment, and ordered to pay a fine of £100 and £20 costs, or in default of payment fifty-one days' further imprisonment. At the London Sessions on April 8th Dr. Cohen appealed against his conviction. The appeal, which was conducted by the London and Counties Medical Protection Society, was allowed, and the conviction and fine quashed.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology*, Westrand, London; telephone, 2631, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulata*, Westrand, London; telephone, 2630, Gerrard.

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QUERIES AND ANSWERS.

S. J. W. asks for advice as to treatment of incontinence of urine in a lady, coming on after confinement (five years ago). There is a slight cystocele.

LETTERS, NOTES, ETC.

THE RUTHERFORD CASE.

THE trial of Lieut.-Colonel N. C. Rutherford, D.S.O., R.A.M.C., on the charge of murdering Major Seton on January 13th, ended in the verdict returned by the jury, after a few minutes' consideration, that Colonel Rutherford was guilty but insane. The judge, in ordering Colonel Rutherford to be detained during His Majesty's pleasure, said he entirely agreed with the verdict.

The effect of the verdict, guilty but insane, as we understand it, is that all charges of criminality are wiped out of the record—an important consideration in the event of ultimate recovery from the mental affection.

IODINE IN INFLUENZA.

DR. A. G. NEWELL, M.D., D.P.H. (London, N.8), writes: Your reference to Dr. Andrés Sobrino's use of iodine in the treatment and prevention of influenza, in the BRITISH MEDICAL JOURNAL of April 5th, and Dr. Thomas's reference to its use (but he does not say he has used it in influenza), is of interest to me. I tried it in influenza from the end of October, 1918, and I have treated over 100 cases of all ages with it. My plan is one drachm of the tinctura iodi (B.P.) in six ounces of water. A tablespoonful three or four times a day for adults. For children over 12 two teaspoonfuls; under this, one teaspoonful, and infants half a teaspoonful. None of the cases seen early got pneumonia. Some cases of patchy pneumonia and bronchitis require in addition an expectorant mixture. The temperature in all uncomplicated cases dropped rapidly from 102° to 99°. In all cases I give calomel at the outset. Cases of double pneumonia with high temperature (104° or 105°) did not react, and required other measures, but I think one can safely say all these are cases which have been going about with a modified infection, and one does not get them early enough. I have elsewhere shown that I have proved its value in small-pox and cholera, and in tonsillitis it is useful internally and externally.

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A Lecture

ON

THE PRACTICAL IMPORTANCE OF
VITAMINES.

BY

F. GOWLAND HOPKINS, M.B., D.Sc., F.R.C.P., F.R.S.,
PROFESSOR OF BIO-CHEMISTRY IN THE UNIVERSITY OF
CAMBRIDGE.

In many departments of human knowledge the teaching and guidance of science are accepted as final because in these departments the knowledge arose in the first instance from scientific studies and from these alone. Progress in such categories depends entirely upon controlled and recorded observation or upon experiment, and these are the methods of science.

It is otherwise, one might be tempted to say, in regions where mankind can claim abundant and accumulated empirical experience. In connexion with his own nutrition man's experience has, needless to say, been co-terminous with his whole existence. Science may explain that experience, but is unlikely, it might seem, to improve upon experience as a guide. It may supply theory, but where experience has been so great and so continuous it seems unlikely that it could do much to guide practice. This consideration, consciously or subconsciously, accounts, I think, for a widespread feeling that the teachings of science about our food supply are of academic interest only.

I am to deal, however, with some facts which indicate that, in one direction at least, practice, for lack of knowledge, has for a long time been in danger of going wrong. Experience might doubtless have eventually corrected the error; but it may be hoped that in this case scientific study will forestall experience, which is a much slower and more expensive teacher.

So long as a community can command not only a sufficiency of food, but also a variety of foods, and uses these foods in fresh condition, as nature made them, appetite and instincts (if unperverted) are usually sufficient to secure efficient nutrition for the individual. But when natural foodstuffs are treated artificially—when, for instance, one kind of food material is fractionated, and the consumer presented with a part of it only; or when another material is dried or heated for preservative or other purposes; or, again, when natural foods are sealed up and kept for long periods, it by no means follows that the food materials any longer subserve proper nutrition, even though they are eaten in sufficient quantity and satisfy the appetite.

Now questions of diet are proverbially liable to stimulate quackery, and if I were here to discuss the merits of "natural" foods without giving objective facts I might be suspected of merely supporting certain doctrinaires—self-dubbed "food reformers"—whose zeal outruns their knowledge. There are facts, however, which support the view that where commercial or other enterprise supplies the public with articles of diet which have been treated or "refined" so as to please the eye or to accord with a fashion or convenience, it may be encouraging very wrong practice. Related facts show that the public, when employing tinned or dried or preserved foods, should use them with discretion, and supplement them properly.

To the naive view that the one important factor in nutrition is the quantity eaten, the science of the last century added one discriminative fact—namely, that quality must be considered as well as quantity, in so far that the food eaten must in any case contain a certain minimum of protein. It taught that the essential constituents of a diet which promotes proper nutrition are protein, carbohydrate, fat, and mineral salts, the organic materials being always provided in sufficient amount to supply the demands of the body for energy.

What we have lately learnt—though it is remarkable how slowly came a recognition of the facts—is that, in addition to the above constituents, which our diets always contain in tangible and easily ascertainable amounts, an efficient diet must also comprise other substances, of which the characteristic is that their nutritive importance is out

of all proportion to the minute quantity in which they are normally consumed. This, I would repeat, is one essential fact in connexion with what we have agreed to call accessory food substances or "vitamines." Their influence on the body is great; their amount as they exist in natural foods is apparently exceedingly small. This is one reason why they have for so long eluded recognition.

An Illustration: Milled Rice and Beri-beri.

Before giving further details I will illustrate how great may be the importance to the body of very small amounts of a nutritional factor by reminding you of what still remains the most vivid instance of the phenomena with which we are concerned.

In certain rice-eating communities of the East, in Japan, the Malay Peninsula, the Dutch Indies, the Philippines, etc.—where, owing to various circumstances, the diet is more exclusively confined to the single cereal than is the case in the wheat-eating West—the very serious disease beri-beri is endemic. It is natural for pathologists to look for a positive rather than what may be called negative causation in disease, and after the development of modern bacteriology many unsuccessful efforts were made to find a microbic origin for beri-beri. Long before this, it is true, the view had been held that diet played a part in its production, and the use of rice was blamed. But the view taken was that the cause was *bad rice*—rice infected with moulds or other organisms. Only slowly did the understanding arise, and not till quite lately was proof driven home, that the disease only follows when the rice eaten has been so treated as to lose some essential constituent. The natural grain contains a special constituent necessary to the body. Overmilling removes this. Polished rice, unlike whole rice, is a deficient food. Beri-beri is a deficiency disease, due to reliance upon this food.

Though not duly appreciated at first, evidence for this really came with the arrival in the East of modern milling machinery from the West. This brought a very great increase in the number of cases of beri-beri. Now the native methods of treating rice before eating had been such as to leave essentially untouched certain parts of the grain which the steam mill on the other hand completely removes.

The advent of steam milling and the increase of disease were not at once recognized as being correlated; but, so far back as 1897, there was brought forward what was irrefutable proof that beri-beri depends not upon infection or staleness in the rice taken as food, but upon the treatment the grain had received in the mill. This proof was due to the Dutch physician Eijkman. His statistics dealt with no fewer than 279,621 individuals, all of them at different times prisoners in the jails of the Dutch East Indies. The different prisons, owing to their different situations, with different and settled local customs, were supplied with different kinds of rice, so the conditions for controlled observations were ready to hand.

In thirty-seven prisons unpolished rice was employed; only one of these prisons developed cases of beri-beri. In thirteen prisons the rice used was polished rice mixed with unpolished; in six of them beri-beri developed. Out of fifty-one prisons, where the rice eaten was entirely of the polished variety, so many as 36, or over 70 per cent. developed cases of the disease. If instead of considering the prisons we count individuals, we find from Eijkman's data that for each 10,000 of the prison population there was only one case among those eating unpolished rice, 416 on the mixed rice dietary, and no less than 3,900 on polished rice. Confirmatory observations have in later years been made elsewhere, but Eijkman's figures are so conclusive that I need bring forward no others. What, then, is removed by the steam mill, of which the importance becomes so evident in its absence? Not the main husk of the grain, for that had nearly always been removed in oriental practice, but just a very thin layer—the "silver skin"—which lies on the outer part of the husk-free seed, together with what we now know to be also important—the germ or embryo. But these structures represent but a very small proportion, indeed, of the total weight of the grain, and we know, as a matter of fact, that the essential thing or things contained in them can amount to but a minute fraction of the material removed. Polished and unpolished rice, as one looks at them side by side, seem to differ so little, that it is almost

* Delivered in the course of Imperial Studies lectures on Physiology and National Needs, at King's College, London, February 19th, 1919.

unbelievable that while the latter is an efficient food the exclusive use of the former may lead to fatal results.

But even Eijkman's striking statistics and the facts they brought out did not at once lead to the conception of vitamins. The thought of the pathologist is so accustomed to deal with the positive causes of disease—with bacteria, with some intruder, some *matrices morbi*—that he develops a certain habit of mind, and with difficulty believes in causation which has, so to speak, a *minus* sign.

Necessity of Accessory Substances.

I will return later to this particular instance of the evil effects of fractionating a natural food material; for the moment, lest you should associate the subject too closely with the idea of actual disease, I will turn your attention into another channel.

As I have already reminded you, the scientific assumption until a few years ago was that the only essential organic constituents of foods are proteins, fats, and carbohydrates. But the scientific data were mostly obtained during the use of natural foodstuffs, meats, cereals, vegetables, etc. These were of course known to contain many other substances besides those held to be essential, but because, for the most part, they are present in small amounts, the possibility of their importance was always ignored. Clearly the ability of proteins, fats, carbohydrates, and inorganic salts by themselves to support life could only be proved by giving them *pure*.

Suppose now we feed animals with a mixture containing really pure protein, such as purified casein from milk, purified starch, and pure sugar, together with a vegetable fat (I say vegetable fat for a reason which will shortly be made clear), and the requisite mineral salts—what is the result? Not normal nutrition by any means. On such a food young animals fail to grow, and all animals, even adults, sooner or later go to ground.

The full significance of these facts will not be appreciated unless it be recognized that these purified diets are perfectly wholesome; they are fully digested, and may be eaten, so far as quantity is concerned, in ample amount for normal growth and maintenance. Something, however—something clearly of the greatest importance—is lacking. Experiments which prove these statements, and the further discriminative experiments to which I shall refer, have hitherto been made almost exclusively upon animals; for the most part, indeed, upon rats, because of the extreme convenience of these subjects. But for those who feel prejudice against applying results so obtained to the nutrition of man (an unjustifiable prejudice, let me say), I shall later offer facts which make a bridge to the case of human nutrition.

The striking thing, the point that we are now concerned with, is the extremely small amount of material which as an addition will, if rightly chosen, convert these wholly inefficient artificial diets into efficient ones. In some early experiments of my own, for example, the addition was a minute amount of milk. The amount of solid matter contained in this added milk represented at most 3 or 4 per cent. of the whole food eaten by the animals, and as most of the constituents supplied in it were already in the diet, any special substance must have formed a very small proportion indeed of the whole supply of food. Yet without this small addition young animals did not grow; with it they grew satisfactorily. With it they lived; without it they ultimately died. Similar results are got by the addition of equally small amounts of other materials, but they must be preparations made from plant or animal tissues. They must contain something made originally by living cells. All our natural foods are parts of tissues which have lived. We ultimately owe our supply of them to the plant, and the plant evidently makes and stores in very small quantity certain substances which are, as experiment proves, as important to the animal and to the human body as the proteins and the starch which it makes in so much larger quantity. Except for those who view nutrition too exclusively from the standpoint of energy supply, there is no reason for surprise in this circumstance.

What should be clearly grasped is the fact that, without the minute quantities of accessory substances, perfectly wholesome and, indeed, from the standpoint of their own functions, absolutely necessary foodstuffs, are not, in any complete and proper sense, utilized, at all. They are absorbed, and the energy contained in them is liberated in

the body, but the co-ordination of metabolism is absent, and neither material nor energy is employed aright. When the minute addition is supplied these very same foodstuffs become perfectly available as a whole. We may think of such facts in terms of a very rough analogy. If a house is to be built it is bricks and wood which bulk largely in the necessary supply. The bulk of necessary nails is out of all proportion small, and even that of the mortar is relatively small; but it would be impossible to erect a normal house without at least a minimal supply of nails and mortar. Without them the rest of the building materials would, from the standpoint of a future tenant, be useless. From the facts just dealt with, and from those brought to light from the study of beri-beri, the conception of vitamins emerges. The analogy just used may indeed be wrong. Vitamins may not be concerned with the structure of the tissues, but rather as stimulants or catalysts, with dynamic processes in the tissues. In any case they are nutritive essentials not directly concerned with the supply of potential energy.

Varieties of Accessory Substances.

The question will be immediately asked: What, then, is the actual nature of such substances? It must be confessed that we do not yet know. Patient efforts have already been made to effect their isolation, but success has not yet come. But their nature is perfectly objective. We can extract them, precipitate them, redissolve them, but we cannot yet get them completely separated from other substances, and until we can do so we cannot determine their chemical nature. But many facts have been garnered concerning their general character and behaviour, and what in particular we have learned in the last four or five years is to be sure that there is more than one of these substances. There are indeed at least three, each one of them having its own function in nutrition.

Consider first, very briefly, the evidence for the existence of two of them. Suppose an animal to be upon artificial diet such as I have already described; normal growth will fail as we have seen. But suppose the fat supplied in the artificial mixture to have been butter or almost any other animal fat. Then growth will occur if we merely add to the mixture small quantities of watery extracts made from various plant or animal tissues. A watery extract of the wheat grain, for instance, and especially of the cortex or embryo of the wheat; or, as it is interesting to know, of the "polishings" which are removed when rice is milled. A substance soluble in water, and that in small quantity, is all that is necessary to convert the, by itself, useless diet into a useful one. Suppose, however, that instead of an animal fat we have supplied in the original mixture a pure vegetable fat. Then the addition of the just mentioned watery extracts alone may be quite ineffective; they fail to make the dietary one which will sustain the animal. Replace, however, the vegetable fat with butter once more, and, given the watery extract, the animal will thrive. Now the vegetable fat is a perfectly good food. As fat, as serving the special purpose of fat itself in the body, there is no reason to doubt that it is as good as animal fat. But it lacks some constituent which the latter contains, though that something is once more present in very small amounts. It will be seen at once to what this evidence tends. There are at least two vitamins of importance to nutrition: one associated with certain fats, and one soluble in water. *Both* must be present in sufficient amount in any dietary providing proper nutrition. Following American suggestion, we now speak of them respectively as the "Fat-soluble A" and the "Water-soluble B."

The absence of the fat-soluble vitamin from vegetable fats is not due to its absence from the vegetable structures—seeds, etc.—from which the fats are derived, but to the fact that it is left behind when the fats and oils are expressed or extracted. It is abundant in butter, and is present, as I have said, in most animal fats, but it is, strange to say, absent—or said to be absent—from lard. Now of the water-soluble substance there is one statement which I think can to-day be safely made. It is of special interest because it links these animal experiments with human experience. The water-soluble vitamin, proved requisite for growth, is the very substance which is necessary for the prevention of beri-beri. It is the substance which rice loses when it is "polished."

TABLE I.—Showing the Relative Distribution of "Fat-soluble A" and "Water-soluble B" Substances in Certain Natural Products.

The relative quantity of either, when present, is indicated by the number of plus signs.

	Fat-soluble A.	Water-soluble B.
Wheat embryo	++	+
Wheat bran	+ 2	+
Wheat endosperm	—	—
Lean meat	+	+
Egg yolk	+++	++
Milk	+	+
Butter	+++	—
Vegetable fats	—	—
Cabbage	++	+
Potatoes	+	+
Yeast... ..	+	+++

I return to beri-beri for a moment. One of the special characteristics of that disease is a disturbance in the nutrition of the nerves. A degeneration of the nerves occurs, with accompanying paralysis. Now birds, when fed exclusively upon polished rice, display this particular symptom in a very typical manner, and the fact enables us to perform careful controlled experiments, such as are necessary for determining the distribution of the water-soluble vitamin or, as it may also now be termed, the "antineuritic" substance. After, say, three weeks upon a diet of polished rice a pigeon or a fowl will suddenly develop acute symptoms of paralysis. It is quite easy to cure or prevent these symptoms by adding other foodstuffs to the rice, and if known amounts of them are added it is possible to estimate approximately the relative richness of various foods in this water-soluble or antineuritic factor.

So much for the water-soluble vitamin. Is, now, the deprivation of the factor associated with fats also followed by symptoms of actual disease? The experimental study of its effects is more difficult than in the case of the other factor. Deprivation of the latter is almost immediately felt; but in their own fat stores animals possess a supply of the fat-soluble vitamin, and when it is absent from their diet they seem able to mobilize this supply for the purposes of their active tissues. Not till this internal store is exhausted, or reduced to some minimal value, is its absence from the diet fully felt. Clearly, different individuals will, either from differences in their previous nutrition, or from idiosyncrasy, vary in respect of their store of fat and its associated vitamin. It is more difficult, therefore, in the case of the fat-soluble factor to obtain completely consistent results during experimental feeding. Nevertheless, all animals ultimately fail when this factor is missing from their food.

Rickets.

The probability is growing that there is one disease—and it is a disease of serious import to the community—in which a dietetic error related to a deficiency in the fat-soluble vitamin plays a causative part. I allude to rickets. We have in this connexion, it is true, not yet the concordant evidence from various sources which exists in proof of the origin of beri-beri or of the general importance of vitamins. The case depends at the moment mainly upon the remarkable experimental results obtained by my friend and former pupil Dr. Edward Mellanby; but his work is by no means without the support of other evidence. It is easy, he has found, to construct a diet upon which dogs, though kept in healthy surroundings and given exercise, speedily develop the characteristic symptoms of rickets. It is easy to prevent this by suitable additions to the dietary, in particular by giving certain fats. The fats which are specially efficacious are those which, from other evidence, we know to be rich in the fat-soluble vitamin. Vegetable fats, free from the vitamin, are without effect. The conclusion seems to be inevitable that in some way—on lines, perhaps, not yet fully cleared up—rickets arises when fat-soluble vitamin is deficient in the food. Other factors, such as a generally deficient hygiene, may be contributory, but I for one am quite convinced that the

dietetic error is the primary cause. No whit less important is the fact demonstrated by Mrs. Edward Mellanby that deficient diets, such as those which induce rickets, also involve grave errors in the growth of teeth in young animals. We have had little suspicion until lately that the quality of the fat supply in the diet could have an effect such as this.

As a fat rich in the vitamin and capable of preventing rickets in dogs cod-liver oil stands pre-eminent. It has been long known that the oil favourably influences the course of rickets in infants, a fact discovered empirically and without knowledge of vitamins, but a successful therapeutic measure is much more likely to gain general credence and to establish itself in practice if a rational basis for it is made clear. Moreover, the recent attention given to the importance of qualitative factors in food has led to the use of cod-liver oil in the prevention of rickets, with successful results. These bring observations upon human infants directly into line with Dr. Mellanby's experiments. The following are striking figures relating to infants in a negro community of the United States. In this community the dietetic standards are low and unsatisfactory, and its children are greatly prone to rickets.

TABLE II.—Showing the Results of Administering Cod-liver Oil to Children for the Prophylaxis of Rickets.

Total Oil Administered.	Duration of Treatment.	No. of Infants.	Infants Developing Rickets.	Percentage of Non-rachitic.
54 oz.	6 months	32	2	93
23 oz.	6 ..	5	1	80
21 oz.	4 ..	12	5	58
None	—	16	15	6

Scurvy.

In the case of the disease scurvy, which arises when no fresh foods are available, the cause is again deficiency in a subtle but indispensable element for nutrition. We learn from this disease that at least one other vitamin exists quite distinct from the two hitherto considered. The antiscorbutic factor, unlike the antineuritic or the fat-soluble substance, is very unstable. These last show considerable resistance to heat and do not necessarily disappear when foodstuffs are kept, even for long periods, whereas the antiscorbutic substance is rapidly destroyed when fresh foodstuffs are heated, dried even at low temperatures, or kept too long.

Pellagra.

Another disease which may be mentioned is one to which maize-eating communities are prone. I allude to pellagra. I do not propose to discuss it; but, to show how wide a ground the subject of this lecture may ultimately be found to cover, I would point out that the many theories as to the origin of pellagra which have previously held the ground seem at the moment to be giving way under the pressure of facts, and to be yielding to the view that pellagra, too, is due to the absence of some specific necessary nutritional factor from the diet.

Effects of Partial Deficiency of Accessory Substances.

It would be grave error to deny that such facts and considerations as have been now discussed are of practical and even of national importance. Our troops abroad during this war have suffered from scurvy, as they have in previous wars. Wherever bodies of men—soldiers, sailors, or explorers—are long removed from the sources of fresh foods, scurvy is wellnigh inevitable. But the severe sufferings which were undergone during the siege of Kut, for instance, might never have occurred if the authorities responsible for the equipment of the expedition had had real belief, such as grows from scientific study, in the importance of antiscorbutics rather than the half-faith which is common, especially had they possessed the quantitative information available as to the distribution of the antiscorbutic factor in different materials.

At home the variety in our foods may be sufficient to secure that actual deficiency disease shall, so far as adults are concerned, remain absent. If the necessary accessory

factors are missing from one article of diet they will probably be supplied in others. It is by no means so sure that this remains true in the case of the child population. I would ask you here to give your attention to certain matters of fact, hoping that you will not think them trivial because they concern foodstuffs that are so familiar.

First consider our bread supply. The ancient controversy concerning the relative merits of brown and white bread has been tainted by prejudice. We have had enthusiasm without knowledge on the one side, and, to some extent at least, we have had the influence of trade interests on the other side. I hold no brief for whole-meal bread. I think the well-fed and well-to-do public may be justified, now the war is over, in insisting upon returning to its very white loaf, if this loaf suits its tastes and appetite better than any other. Other articles eaten will surely supply any deficiency. It is well to face the facts, however. The elaborate milling, the "refining" which the wheat grain suffers before it appears in the form of our white flours, deprives it entirely of its water-soluble vitamins. If our pure white wheaten flour were in this country to form so large a proportion of the whole diet as rice does in the East, beri-beri would with certainty appear among us. Indeed, in certain limited communities it is said to have followed the use of white bread. The wheat grain, no less than the rice grain, shows that an essential nutritive factor may have an unequal and limited distribution in a natural product, and illustrates the danger of "fractionating" natural foods to which I referred in my opening remarks.

It is clear that the danger of any deficiency in bread becomes the greater the more it bulks as a constituent of the whole diet. In the case of the poor—and especially the children of the poor—it undoubtedly bulks largely. Consider again the question of margarine as a substitute for butter. If the margarine is made wholly of vegetable fats, it lacks the fat-soluble vitamins. It is not by any means a trivial point to remember that brown bread and butter is, from the standpoint of vitamin supply, an excellent combination, while white bread and margarine may be a desperately bad one. Speaking in parenthesis, I may say that I happen to be aware from personal knowledge that the margarine industry in this country is quite alive to the significance of the facts. Given full liberty of action, the trade is, I believe, both willing and able to turn out products free from the reproach of this deficiency.

We must remember, again, that polished rice contributes not a little to the table of the poor, especially in some districts, and is often eaten plain boiled. Many of the advertised proprietary breakfast foods and invalid foods are practically devoid of vitamins.

In connexion with the antiscorbutic vitamins in particular, let it be called to mind that tinned foods are largely used in poor households—for one thing, because they often need no cooking. In these very households salads are rare, and during those periods of the year when fruit is dear extraordinarily small amounts of fresh foodstuffs are consumed.

Yet, it may be said, in spite of all this, beri-beri or pelagra or any disease like them is unknown in this country; and scurvy is, to say the least of it, very rare. But disturbances in health may exist without arriving at the extreme stage when the appearance of a severe set of symptoms leads to the recognition of actual disease. In particular is this true of conditions of malnutrition, and, unless the considerations I have put before you are wholly baseless, malnutrition may arise irrespective of the quantity of food eaten. It may depend not upon insufficient food but upon badly treated foods or upon an ill-chosen combination of foods. There is no point in all that I have said that I would like to emphasize more than this: Absence of an essential vitamin from the food means disease; but no more than a relative deficiency of a vitamin may mean bad nutrition. In my own opinion at least the diets of the poor—and once again it is the children who are chiefly concerned—often display such deficiency. In connexion with a point such as this a study of national supply, or even of family budgets, gives only partial information. Even when the total family food-budget is satisfactory, ignorant and ill-judged feeding of the child members is both possible and common.

The worst of it is that at present the facts are not generally recognized, even by the medical profession, and the ill health with which such deficiencies as we have been considering are associated is, in my belief, misunderstood and wrongly treated.

The case of rickets, however, stands out. Rickets is very common in this country. True rickets is a disease which, though crippling, is not fatal in itself. It is, nevertheless, a factor of supreme importance to the country because of its indirect effect upon the infantile death-rate. The child who is rickety is much more prone to other ailments—much more vulnerable in all respects—than a normal child. I will not dogmatize with regard to its origin. The mere suspicion that it may be due to a specific dietetic error, such as a deficiency in the supply of the fat-soluble vitamins, should awaken instant interest. Once we are convinced of the primary importance of this factor it will become of national importance to look to the question not alone of the quantity, but of the quality, of the fat in the diets of infants and of nursing mothers.

Mention of the nursing mother brings me to my last point. Evidence has accumulated to suggest that vitamins are not made in the animal body. The animal depends ultimately upon the plant for a supply. They accumulate in the tissues of herbivorous animals, and there, as well as in the plant, they are available for human consumption. But if vitamins are not made in the body at all, this means, in the case of the nursing mother, that if she consume a diet deficient in vitamins her milk may ultimately become deficient—to the complete detriment of the nutrition of her child. Animal experiments have already revealed such deficiencies in milk. It will be seen that the whole question of infant feeding is one in which a knowledge of these special accessory food factors is particularly important. The deficiencies which we have been considering are indeed of more urgent importance in connexion with the nutrition of the young than when adults are concerned. Hence what I believe to be the national importance of the subject. Whether this importance prove ultimately to be less than some of us believe, or whether—for this is quite possible—it may prove to be of as yet unsuspected importance, it should in any case awaken public interest. We are yet at the bare beginning of its study.

A Collective Investigation

OF

TEN THOUSAND RECRUITS WITH DOUBTFUL HEART CONDITIONS.

Conducted at the National Hospital for Diseases of the Heart by C. CHAPMAN GIBBES, R. O. MOON, S. RUSSELL WELLS, P. HAMILL, FREDERICK W. PRICE, and J. STRICKLAND GOODALL.

REPORT III.*

COMPILED BY

S. RUSSELL WELLS, M.D., B.Sc.

THE ETIOLOGY OF AORTIC REGURGITATION.

It has been found extremely difficult, on account of the large amount of material with which we have to deal, and the number and variety of the problems that present themselves, to treat the different questions in logical order. In many cases the questions at issue are so intermixed that when the solution of any particular problem is attempted it is found necessary to solve another first. In our last report we dealt with the incidence of certain general diseases in our whole 10,000 cases, and arrived at the conclusion that there was a slight but definite correlation between a history of rheumatic fever and chorea, but no correlation between a history of rheumatic fever and either a history of "rheumatism," growing pains, or tonsillitis. We stated that the importance of these disorders as

* Part I was published in the BRITISH MEDICAL JOURNAL, May 18th, 1918, p. 556; Part II, September 7th, 1918, p. 248.

efficient causes in producing valvular lesions "could only be determined by a detailed examination of the etiological factors in the different cardiac disorders." Before undertaking such an investigation it was necessary to classify our material according to the various valvular and other defects. Diagnosis during life of cardiac lesions, however, is a question of opinion and not necessarily of fact; therefore before dealing with the etiology of aortic regurgitation, for instance, we should first discuss in detail the data on which the diagnosis was made, and this discussion would again lead us down side-paths which need not now be particularized. The result would be that all continuity of thought would apparently be lost in the presentation of our conclusions; we therefore propose first to discuss the etiology of certain affections of the heart, as far as our cases are concerned, reserving the reasons for our diagnoses for later communications, though some of these communications are already written. While asking the reader to suspend judgement for the time being, we desire to record the fact that the diagnoses have in all cases been arrived at as the result of physical examinations only, and that the etiological factors, such as a history of acute rheumatism and the like, have in no case been taken into consideration in arriving at a decision. Since physical signs alone enable a diagnosis of aortic regurgitation and mitral stenosis to be made with a considerable degree of certainty, we shall treat of the etiology of these lesions first; moreover, since it is generally admitted that the diastolic murmur over the base and down the sternum, which is characteristic of aortic regurgitation, and the apical presystolic and apical diastolic murmurs of mitral stenosis are as a rule associated with structural lesions of the valves, and hence are not likely to be confused with the so called functional murmurs, there is a distinct advantage in investigating the etiology of these affections before proceeding to more debatable ground.

AORTIC REGURGITATION.

Etiology.

In dealing with the etiology of the cases of aortic regurgitation it must be pointed out in the first place that the cases dealt with were all between the ages of 16 and 42. Consequently, those causes which act late in life necessarily will not figure as prominently as those which occur earlier. It may also be suggested that, since we are dealing with a selected population, the medical boards may have sent a preponderance of a particular class. This, however, is hardly likely, for the War Office instruction was that cases only should be sent in which a doubt as to the classification for military purposes had arisen, and there is no reason to suppose that cases of aortic regurgitation due to any particular cause are likely to furnish a larger proportion of doubtful cases than those due to any other cause. The causes to which aortic regurgitation has been assigned are very numerous, including a great variety of microbic infections, but it is generally recognized that acute rheumatism is one of the commonest. Chorea, and the vaguer and slighter forms of rheumatism described as "growing pains" and the like, are credited with producing it in many cases. An increasing volume of opinion seems to exist which credits syphilis with being the efficient cause of a large proportion of cases; it has been stated that as many as 41 per cent. of aortic regurgitants show evidence of the presence of syphilis. The gonococcus is likewise suspect, while many consider that severe and continuous muscular strain is a common cause of the affection. The arterial changes grouped as atheroma are undoubtedly found, *post mortem*, to be the immediate cause of aortic regurgitation in many cases, particularly in later life, but this is a pathological phenomenon and a proximate rather than an original or true cause, and the question still remains—What was the cause of the atheroma?

Out of the 10,000 recruits examined 307 cases were considered to be definite examples of aortic regurgitation. In all of these a diastolic murmur was audible over the base or down the sternum, though the point of maximum intensity was not always over the aortic area, and in practically every instance other signs suggestive of aortic regurgitation were found. In many cases there was reason to believe that other lesions were present as well. The

following table shows the distribution of the 307 cases according to the diagnoses arrived at.

TABLE I.—Cases of Aortic Regurgitation.

Diagnosis.	No. of Cases.
Pure Aortic Lesions:	
Aortic regurgitation alone	94
Aortic regurgitation and aortic stenosis	14
Aortic regurgitation and doubtful aortic stenosis	16
Mixed Lesions:	
Aortic and mitral regurgitation	112
Aortic and mitral regurgitation and aortic stenosis	5
Aortic regurgitation and mitral stenosis	15
Aortic and mitral regurgitation and mitral stenosis	33
Aortic and mitral regurgitation and aortic and mitral stenosis	4
Aortic, mitral, and tricuspid regurgitation	1
Aortic regurgitation and old pericarditis	8
Aortic and mitral regurgitation and old pericarditis	2
Aortic and mitral regurgitation, mitral stenosis, and old pericarditis	3
Total	307

With a view to elucidating the influence of the various suggested factors in the production of aortic regurgitation in cases of men up to 42 years of age, the histories of the recruits have been analysed.

TABLE II.—Giving a Comparison between a History of Various Antecedent Diseases and a History of Strain in the whole 10,000 Recruits on the one hand, and like Histories in the 307 Aortic Regurgitants on the other.

Total 10,000 Recruits.			307 who showed Definite Signs of A.R.	
Possible Etiological Factor.	No. of Cases.	Percentage of Total 10,000.	No. of Cases.	Percentage of 307 A.R.'s.
Rheumatic fever*	1,921	19.2	162	52.8
Chorea	265	2.6	20	6.5
"Rheumatism"	1,613	16.1	55	17.9
Growing pains	2,649	26.5	84	27.3
Tonsillitis... ..	2,210	22.1	60	19.5
Scarlet fever	2,185	21.8	71	23.1
Diphtheria	728	7.3	22	7.2
Pneumonia	537	5.4	20	6.5
Influenza	5,629	56.3	142	46.3
Syphilis	200	2.0	11	3.6
Gonorrhoea	596	6.0	16	5.2
Strain	2,711	27.1	113	36.8

A.R. = Aortic regurgitation.

* No case was credited with rheumatic fever unless there was a clear history of pain and swelling in the joints, fever, and an illness necessitating confinement to bed over a period of some weeks. Some recruits naturally gave a history of more than one of the diseases recorded above.

It will be seen that the aortic cases give a strikingly higher percentage of histories of rheumatic fever than the average, and that they also show higher percentages of histories of chorea and strain. The absence of marked differences of percentages in the other groups makes us doubtful whether a history of these ailments in the cases of aortic regurgitants is not merely accidental.

The percentage method of investigation is open to so many sources of error in numbers like these, that while drawing attention to the figures for rheumatic fever and strain, we do not wish to base any conclusions on the table just given alone. There is, however, another method by which the problem may be investigated. We can calculate the correlation coefficient for aortic regurgitation and each of the factors which may be in etiological relation with

it.* One hundred and sixty-two cases gave a history of rheumatic fever and symptoms of aortic regurgitation, 145 aortic regurgitants gave no history of rheumatic fever, while 1,759 cases had a history of rheumatic fever but no evidence of aortic regurgitation, and 7,934 cases no signs or history of either. The coefficient of correlation comes out at 0.499, the limit of probable error being ± 0.015 , while $\chi^2 = 229$. This is very definite correlation, and may be defined as from moderate to considerable.

TABLE III.—Showing the Numbers for the Various Diseases or Possible Causes Investigated, with the Correlation Coefficient, Limits of Probable Error, and Value of χ^2 in Every Case.

A.	B.	Number of Cases.				Coefficient of Correlation.	Limit of Error.	χ^2 .
		History of A. and B.	History of A. only.	History of B. only.	No History of A. or B.			
A. R.	Rh. fever ...	162	145	1,759	7,934	0.499	0.015	229.83
"	"Rheumatism" ...	55	292	1,558	8,135	0.039	0.020	0.75
"	Growing pains ...	84	223	2,565	7,128	0.016	0.020	0.123
"	Chorea ...	20	287	245	9,448	0.179	0.019	18.34
"	Tonsillitis ...	60	247	2,150	7,543	0.053	0.020	1.20
"	Scarlet fever ...	71	236	2,114	7,579	0.025	0.020	0.30
"	Diphtheria ...	22	285	706	8,987	0.004	0.020	0.006
"	Pneumonia ...	20	287	517	9,176	0.045	0.020	0.82
"	Influenza ...	142	165	5,487	4,206	0.161	0.019	12.96
"	Syphilis ...	11	296	189	9,504	0.107	0.020	4.05
"	Gonorrhoea ...	16	291	580	9,113	0.032	0.020	0.317
"	Strain ...	113	194	2,598	7,095	0.164	0.019	15.07

A. = Aortic regurgitation. B. = Etiological factor under consideration—for example, rheumatic fever, chorea, or the like.

The value of χ^2 in the above table is so small in the case of "rheumatism," growing pains, tonsillitis, scarlet fever, diphtheria, pneumonia, syphilis, and gonorrhoea, as strongly to suggest that the system is not really a random sample from material in which the two variates are independent, but that, on the contrary, the two variates are correlated with each other in various degrees. χ^2 , however, is sufficiently high in the cases of rheumatic fever, chorea, influenza, and strain, practically to exclude a chance distribution. Before accepting the correlation figures for chorea, influenza, and strain, we have to remember that many cases giving a history of these illnesses also gave a history of rheumatic fever. In view of the well marked correlation of 0.499 ± 0.015 between aortic regurgitation and rheumatic fever, and the fact that no less than 52.8 per cent. of cases of aortic regurgitation gave a definite history of rheumatic fever, it is obviously dangerous to attribute aortic regurgitation to any other cause, such as influenza, strain, or syphilis, where there is also a history of rheumatic fever.

We therefore propose now to discuss in detail the cases of aortic regurgitation giving histories of the various diseases with which we are concerned, and shall compare the percentage of cases in any group giving a history of rheumatic fever with the percentage of the whole 307 cases that gave this history. It is obvious that if rheumatic fever and any other disease, such as syphilis for example, are both causes of aortic regurgitation, we should expect to find among a random sample of aortic regurgitants giving a history of syphilis a smaller proportion giving a

history of rheumatic fever than among aortic regurgitants as a whole; or, put in other words, there would be more without a history of rheumatic fever than among a sample of cases of aortic regurgitation selected without regard to the syphilitic history; while, if syphilis were not a cause of aortic valvular trouble, we should expect the proportion of rheumatic cases to be as big as or bigger than in the whole class. While we have shown in Report II that there is no correlation to be found between a history of rheumatic fever and either one of "rheumatism" or growing pains, and while the percentage and correlation figures just given lend no support to the view that they are efficient causes in producing aortic regurgitation, it is possible that such histories in some of these cases may refer to slighter attacks of the same ailment as that which we have dealt with under the head of rheumatic fever, though the evidence we have already brought forward makes it improbable that they do so as a rule. We have therefore thought it wise to include a heading of "History of 'Rheumatism,' Growing Pains, or Chorea"; the reasons for including chorea will be given under the head of that disease.

There is yet another method by which we can approach the problem. As it is well known that the damage caused by acute rheumatism is by no means confined to one set of valves, and that it frequently produces multiple lesions, we can see if, in cases of aortic regurgitation, there is a great excess of either simple or multiple lesions in those cases giving a history of any particular disease beyond what we should expect if true rheumatism were the cause.

Rheumatic Fever.

One hundred and sixty-two of the 307 cases of aortic regurgitation, or 52.8 per cent., gave a history of this disease, as against 19.2 per cent. of the 10,000 cases examined. The correlation coefficient between a history of rheumatic fever and aortic regurgitation was 0.499 ± 0.015 , while $\chi^2 = 229$. These facts are powerful arguments in favour of rheumatic fever being an important cause of aortic regurgitation. In comparing the ratio of the pure aortic lesions to mixed lesions we thought it wise, in the first instance, to divide our cases into three groups, shown in Table IV:

TABLE IV.—Group 1, a Clear and Definite History of Rheumatic Fever. Group 2, a Rheumatic History such as "Rheumatism," Growing Pains, or Chorea, but no Definite History of Rheumatic Fever. Group 3, no History Suggestive of any form of Rheumatism.

Group.	Total	Pure Aortic Lesions.	Mixed Lesions.	Ratio of Aortic to Mixed Lesions.
1. With history of rheumatic fever	162	70=43.21%	92=56.79%	0.76
2. With history of "rheumatism," growing pains, or chorea	73	29=39.72%	44=60.27%	0.66
3. With no rheumatic history	72	25=34.72%	47=65.28%	0.53
Total ...	307	124	183	0.68

It will be seen that the ratio between aortic and mixed lesions steadily falls as we pass from Groups 1 to 3, and that in those cases showing no history of any form of rheumatism the largest proportion of mixed lesions occurs. A reference to the table already given of the diagnoses will reveal the fact that in most cases where a mixed lesion occurred mitral regurgitation was present, and as the diagnoses were founded on physical signs alone, and largely on murmurs, this may have been either due to structural damage of the valves or to relative incompetence from stretching of the mitral ring or other causes.

"Rheumatism."

Fifty-five of the 307 cases gave a history of "rheumatism"; 17 of these also gave a definite history of rheumatic fever either before or after the "rheumatism." In the remaining 38 no clear account of rheumatic fever, as we have defined it, could be elicited, though in some there was a history of growing pains or chorea as well as rheumatism.

* The formulae used were—

$$Q_c = \sin \frac{\pi}{2} \frac{1}{\sqrt{1+K^2}}$$

$$\text{where } K^2 = \frac{4abcdN^2}{(ad-bc)^2(a+d)(b+c)}$$

Q_c being taken as a sufficiently near approximation to r (see Pearson, *Phil. Trans.*, 1900, series A, vol. 195).

$$(\text{Prob}) \chi^2 = \frac{N(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

$$\text{Error: } \pm 2.02347 \times \frac{1-r^2}{\sqrt{N}}$$

TABLE V.—Comparison of the 307 Aortic Regurgitants with the 55 giving a History of "Rheumatism," as regards the Incidence of Rheumatic Fever.

	No. of Cases	With History of Rh. Fever.	Without History of Rh. Fever.
Total Ao.R.	307	162=52.8%	145=47.2%
Ao.R. and "rheumatism" ...	55	17=30.9%	38=69.1%

The fact that a smaller proportion of cases with a history of "rheumatism" (30.9 per cent. against 52.8 per cent.) give a history of rheumatic fever than the whole 307 do, suggests that "rheumatism" may have been the cause of the aortic regurgitation in some of these cases; or, what would come to the same thing, that some cases of the disease we have called rheumatic fever were included in the "rheumatic" group.

Of the 38 "rheumatic" cases without a history of rheumatic fever, 14 were diagnosed as instances of aortic lesions, and 24 as mixed lesions—a ratio of 0.58 as compared with 0.76 for rheumatic fever.

Growing Pains.

Out of the 307 aortic regurgitants, 84 gave histories of growing pains; 48 of these gave a definite history of rheumatic fever as well, and of the remaining 36 some 7 gave a history of either "rheumatism" or chorea in addition to growing pains.

TABLE VI.—Comparison between the Incidence of Rheumatic Fever in this Group with its Incidence in the whole 307 Cases.

	No. of Cases.	With History of Rh. Fever.	Without History of Rh. Fever.
Total Ao.R.	307	162=52.8%	145=47.2%
Ao.R. and growing pains ...	84	48=57.14%	36=42.85%

The close agreement between these figures obviously makes it unsafe to attribute aortic regurgitation to growing pains. Of the 36 cases without a history of rheumatic fever 15 were classed as pure aortic and 21 as mixed lesions; a ratio of 0.71, which is practically the same as the 0.76 found in the cases with a history of rheumatic fever.

Chorea.

In 20 cases there was a history of chorea, 10 of these giving also a history of rheumatic fever, 6 of chorea with either growing pains or "rheumatism," and 4 a history of chorea without any other rheumatic manifestation.

TABLE VII.—Comparison between the Rheumatic History of those Cases showing Chorea and the Rheumatic History of the Total Number of Aortic Regurgitants.

	No. of Cases.	With History of Rh. Fever.	Without History of Rh. Fever.
Total Ao.R.	307	162=52.8%	145=47.2%
Ao.R. and chorea ...	20	10=50.0%	10=50.0%

The question arises whether those cases in which there is a history of chorea should be classified definitely with true rheumatism, and put in the same group as rheumatic fever, or not. In favour of such a classification are the facts that chorea is a definite illness, persisting for a long time, and hence it is comparatively easy, from a careful inquiry into the history of the case, to make sure of it having occurred. Since at the present time there seems to be a growing tendency to regard true chorea and acute rheumatism as different manifestations of the same disease, and since there is, as shown in our last report, a certain degree of correlation between a history of chorea and rheumatic fever, we were at first inclined to classify them together, but, on further consideration, it was thought wiser to adopt a more conservative attitude, and to put the chorea cases together with the more doubtful rheumatic manifestations such as "rheumatism" and growing pains, and only to credit to rheumatic fever those cases where there was a history of true rheumatic fever as well as of chorea. One of the considerations which induced us to do this was the fact shown in the above

table, that the proportion of chorea cases giving a history of acute rheumatism—namely, 50 per cent.—was practically the same as the proportion of total cases of aortic regurgitation giving a similar history, which was 52.8 per cent.

Of the ten cases without a history of rheumatic fever, three were considered to be examples of pure aortic lesions, and seven of mixed lesions—a ratio of 0.43. The numbers are, however, too small to be worth considering.

Tonsillitis.

Tonsillitis is considered by some to be an affection of rheumatic origin; others, while not admitting this, yet consider that it may be the cause of valvular affections. Confining ourselves for the moment entirely to aortic regurgitation, we may say at once that our figures for these cases afford but little support of these views. Sixty cases in all—that is, 19.5 per cent. of the 307—gave a history of tonsillitis, but in 40 there was also a history of rheumatic fever, and in 7 one either of "rheumatism," growing pains, or chorea. In other words, in 78.3 per cent. there was a possible rheumatic history, and in only 21.7 was this absent.

TABLE VIII.—Tonsillitis.

	No. of Cases.	With Rh. Fever.	With Rh., G.P., or Ch.	Without Rh. History
Total Ao.R.	307	162=52.8%	73=23.8%	72=23.4%
Ao.R. and tonsillitis ...	60	40=66.6%	7=11.7%	13=21.7%

G.P. = Growing pains; Ch. = chorea.

The ratio between the cases showing pure aortic lesions and those with mixed lesions was 0.58, as against 0.76 for rheumatic fever; while of the 20 without a history of rheumatic fever 6 show pure aortic lesions and 14 mixed—a ratio of 0.43, so that here there is a preponderance of mixed lesions.

Scarlet Fever.

Scarlet fever has been regarded as a not uncommon antecedent of valvular lesions; but, as this fever is not infrequently followed by a fever bearing a close resemblance to acute rheumatism, many have thought that the valvulitis following scarlet fever are really of rheumatic origin. The figures for these cases give a slight support to this view. In 9 out of the 45 cases where rheumatic fever and scarlet fever both occur, the rheumatic fever followed immediately after the scarlet fever—that is, in 20 per cent. of the cases there was a close connexion between them. In the remaining 36 cases the two diseases were separated by some years.

Seventy-one out of the 307 cases—that is to say, 23.1 per cent.—gave a history of scarlet fever. In 45, as mentioned already, there was a history of rheumatic fever; in 13 a history of either "rheumatism," growing pains, or chorea; in 13 there was no history of any rheumatic affection.

TABLE IX.—Contrasting the Total of Aortic Regurgitants with those giving a History of Scarlet Fever, showing a Slight Preponderance (63.4 per cent. as against 52.8 per cent.) giving a History of Rheumatic Fever where Scarlet Fever had also occurred; in the Scarlet Fever Group there is rather a Smaller Proportion with no Rheumatic History.

	No. of Cases.	With Rh. Fever.	With Rh., G.P., or Ch.	Without Rh. History
Total Ao.R.	307	162=52.8%	73=23.8%	72=23.4%
Ao.R. and scarlet fever ...	71	45=63.4%	13=18.3%	13=18.3%

Ratio of Pure to Mixed Lesions.—In 27 cases lesions of the aortic valve alone were diagnosed, in 44 the mitral valve was also affected—a ratio of 0.61 against 0.76 for the cases with a history of rheumatic fever. Of the 26 cases without a history of rheumatic fever, 8 had pure aortic lesions and 18 mixed—a ratio of 0.4, so here, as in the case of tonsillitis, mixed lesions predominate.

These results do not in themselves lend any support to the view that scarlet fever is an efficient cause of aortic regurgitation.

Diphtheria.

Of the 307 cases of aortic regurgitation 22, that is, 7.2 per cent., gave a history of diphtheria.

TABLE X.—Showing the Distribution of Cases with a History of Diphtheria and a Comparison between them and the Total Aortic Regurgitants with regard to their Rheumatic History.

	No. of Cases.	With Rh. Fever.	With Rh., G.P., or Ch.	Without Rh. History
Total Ao.R. ...	307	162=52.8%	73=23.8%	72=23.4%
Ao.R. and diphtheria ...	22	15=68.2%	5=22.7%	2= 9.1%

A comparatively large proportion of these cases were pure aortic lesions, namely, 13 as against 9 with mixed lesions, the ratio here being 1.44 instead of the ratio 0.76 shown by the total number of aortic cases with a history of rheumatic fever. Of the 7 cases without a history of rheumatic fever, 4 were pure aortic lesions and 3 mixed—a ratio of 1.3.

These figures cannot be said to lend any support to the idea that diphtheria is a cause of aortic regurgitation, but the large proportion of pure aortic cases in this group is interesting, though it may well be accidental.

Pneumonia.

The proportion giving a history of pneumonia is not large, 20 cases in all, that is, about 5.9 per cent. of the total 307 cases. Twelve of these gave histories of acute rheumatism, 2 of some rheumatic affection, and 6 no rheumatic history. Here again, as the table shows, there is no evidence from the figures that pneumonia is in itself a cause of aortic regurgitation.

TABLE XI.—Pneumonia.

	No. of Cases.	With Rh. Fever.	With Rh., G.P., or Ch.	Without Rh. History
Total Ao.R. ...	307	162=52.8%	73=23.8%	72=23.4%
Ao.R. and pneumonia ...	20	12=60.0%	8=40.0%	6=30.0%

Since an attack of pneumonia is apt to affect the muscle of the ventricles, it is not surprising that these cases of aortic regurgitation with a history of pneumonia show a larger proportion of mixed lesions than is shown by the 162 cases with a history of acute rheumatism; the ratio of pure aortic to mixed lesions being 0.43 where pneumonia had occurred, as against 0.76. The cases without a history of rheumatic fever comprised 2 cases of pure aortic lesions and 4 of mixed, a ratio of 0.5.

The analysis of these cases is against pneumonia being a cause of aortic regurgitation.

Influenza.

As judged by these cases, influenza is but of little importance in the production of aortic regurgitation. Of the 307 cases, 142 (46.3 per cent.) gave a history of one or more attacks of influenza, but in 82 of these there was also a history of rheumatic fever, and in 31 a history of chorea, "rheumatism," or growing pains—that is, in 79.6 per cent. there was a possible rheumatic history.

TABLE XII.—Influenza.

	No. of Cases.	With Rh. Fever.	With Rh., G.P., or Ch.	Without Rh. History
Total Ao.R. ...	307	162=52.8%	73=23.8%	72=23.4%
Ao.R. and influenza ...	142	82=57.7%	31=21.8%	29=20.5%

The ratio of pure aortic to mixed lesions was 0.73, which is very similar to that of the total number of aortic regurgitants with a history of rheumatic fever. Of the 60 cases without a history of rheumatic fever, 21 were pure aortic cases and 39 were instances of mixed lesions, the ratio being 0.5, against 0.76 for the whole of the cases of aortic regurgitation with a history of rheumatic fever.

(To be continued.)

A PLEA FOR THE HOMOGENOUS NERVE GRAFT.

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In the majority of cases of complete nerve division that have resulted from gunshot injury the nerve ends are capable of approximation for suture when operation is performed for this purpose. But there are quite large numbers in which approximation is not possible owing to the destruction of a considerable segment of nerve trunk, together with extensive tissue loss. Many such a case has been operated upon, and the surgeon who has been confronted with the problem of how to make good the loss has failed to proceed further or has resorted to one of various illogical expedients, without, in my experience, any good result.

As surgical specialist to the Pensioners' Resurvey Boards at the Duke of York's Head Quarters I have had ample opportunity of observing these results, and I have seen no instance of recovered nerve function where bridging with foreign material has been done, or where the nerve ends have been connected by a wrapping of fascia, Cargile membrane, or vein. If Van Lair's experiments are to be relied upon, it is inconceivable how anatomical union can by such means occur.

He found, as a result of nerve trunk excisions in animals, that where a space of 4 cm. was left between the nerve ends no recovery occurred; with an excision of 2 cm., recovery did not occur for thirty months; with a 1 cm. excision, recovery of function was delayed to fourteen months; whereas in the case of approximation and suture, recovery occurred in eight months.

These experimental operations were aseptically performed so that there would be absence of scar tissue and the circumneural areolar and fatty tissue left would offer but little obstruction to growth, if any, furnishing rather an admirable conducting sheath to support and direct the growing nerve fibres in a correct course were this all that was required.

But it is clear that something more than a conduit is necessary. It is recognized that the neurilemma elements are essential to sustain and nourish nerve fibres in their growth. Where interrupting scar is present, as it invariably is in gunshot injuries, it is doubtful if the smallest breach is passed. Wherever a nerve has been wounded and divided, completely or in part, palpation will reveal the presence of a neuroma, which means a mechanical and functional block, and my experience is that until this block is removed and direct approximation of healthy elements obtains, function is not restored, in spite of massage, electricity, and other futile means wastefully expended over a period of years. It is not reasonable to expect growing fibres, after being contorted in scar, to traverse such a bewildering obstacle and reach their destination. Thus excision of a lateral scar the result of a lateral notch is perforce a recognized operation.

In view of the large number of pensioners still languishing with disabilities that are the direct result of sectional nerve lesions it is fortunately proving by accumulating evidence that lapse of time should be no deterrent against suture. The longest period that has elapsed between section and suture of the cases I have observed that have been followed by recovery is two years and seven months. This was a case of complete ulnar nerve division.

The results in general of nerve suture as they appear at the Resurvey Boards are remarkably good, and the degree of restoration of function is found on palpation to be in inverse ratio to the development of a neuromatous swelling where junction has been effected. Conformity at the site of union approximates the normal when coaptation is exact and restoration of function is complete; whereas if operation results in failure, marked neuromatous swelling occurs, which is a help in deciding for reoperation without undue delay. "What is anatomically correct will not be physiologically wrong" is a phrase that in nerve surgery may be taken as a guide if operative results are to give satisfaction. It is not possible to make certain of establishing perfect histological union, but the oval contour and striation of a nerve does permit of coaptation that approximates morphological perfection, so that torsion can be avoided and nerve fibres in their growth are likely on the whole to

find their paths correctly. The sectional area of a nerve has the appearance and manner of a cribriform connective tissue plate, the apertures of which are occupied at the proximal end by severed normal nerve fibres and at the distal end by protoplasmic neurilemma cords of equal number. If nerve fibres in their growth pass into other than their rightful channels, so-called paradoxical regeneration will occur that in mixed nerves in particular is followed by disconcerted and incomplete recovery; but when coaptation of nerve ends is made morphologically exact, such paradoxical regeneration is unlikely, for sensory and motor nerve fibres are not intimately admixed but can be traced throughout their course in separable strands.

A nerve graft fulfils all histological and anatomical requirements. Successfully introduced, it may be regarded as deriving vascularity and nutrition from capillary connexions that must at once form, and as undergoing the same Wallerian degenerative change of its nerve fibres, in common with all medullated nerve fibres severed from their cells. The loose connective tissue which surrounds and is introduced with a graft affords protection and mobility, and is a natural safeguard against adhesion that is so commonly responsible for local tenderness, contracture, irritative phenomena, and pain.

If a nerve graft is to afford a normal channel for every separate axis cylinder growing from above it must have a sectional area at least as great as or greater than that of the nerve trunk itself. Any provision short of this will be inadequate, and will result either in a syndrome of dissociation, a recovery at most of partial degree, or in failure of any recovery owing to the block of a faulty and defective union. Such unsatisfactory results are to be seen by the utilization of autogenous grafts for the median, ulnar, and musculo spiral nerves when their continuity is re-established by the interposition of segments of cutaneous trunks of small and disproportionate calibre, like the radial and internal cutaneous nerves taken from the same subject. Union by suture of the epineural sheath, so insisted upon by many operators, is in this connexion an essential desideratum in the prevention of block, by eliminating the ingress of scar tissue and the emergence of nerve fibres, which become governed and directed on a normal course.

Homogenous nerve grafts are obtainable from amputation stumps which are being operated upon for painful neuromata, and it is quite feasible that certain men would be donors to their comrades who remain disabled from extensive nerve loss. In such case the time of operation is a matter of arrangement and choice. Opportunity is also afforded when amputation is performed if disease does not contraindicate, but such is only of chance occurrence, and rarely available opportunely. It is possible that nerve segments preserved in a cooling chamber might be employed with success as grafts, but, though I have had them ready in case of need, no occasion has arisen to prove their use, nor have I seen their use reported.

There are considerations other than anatomical which have been dealt with above that contribute to success in nerve reconstruction, but taking for granted a recognized and approved surgical technique, it is the anatomical factor which, in my opinion, counts above all others for or against a good result, and the importance of which as fundamental requires emphasizing. And the anatomical factor as a matter for attentive consideration is not confined to the nerve. The other tissues in the wound area that have suffered injury and loss are replaced by scar tissue, which is the product not of differential regeneration but of repair, in which the cellular elements of the universal connective tissues alone take a proliferating part. The breach of the surface and underlying tissues becomes indiscriminately occupied and mended by an inelastic material, binding parts together which should possess free mobility, dragging and distorting them from their normal positions and course, and fixing them to the overlying surface or subjacent bone.

I made it a practice in my military hospital work to excise all adherent scars with the object of reconstituting disturbed anatomy and restoring the mobility and normal function of the various structures. The aching of scars in cold damp weather is real, from loss of the insulating subcutaneous fatty covering; the pain of scars is true, and can be localized by careful palpation to fine neuromatous

terminations of divided subcutaneous nerves. Contraction and extension of muscles, free action of tendons, and consequently joint movement, are compromised by adhesion to skin and underlying bone. Nerves by implication evince not only disordered conduction, but distressing tenderness at the affected region both on manipulation and pull, so that attitudinization and protective contracture maintain deformity that resists correction from fear of pain. Many so-called functional cases have in these conditions an underlying cause, a sufficient aggravant in susceptible subjects being an adherent scar by the mere annoyance of its continued drag and pull. All these evils can be eliminated by excision of the scar, which, when an implicated nerve is approached, should be the route chosen rather than another elsewhere.

The foregoing remarks will, I hope, suitably preface the report of a case which I operated upon at St. George's Hospital, a case of extensive loss of the median nerve in which the intercalation of an homogenous graft fifteen months after injury was followed by a result so successful and rapid that I enter a plea for its general adoption and its trial at all events before resorting to tendon transplantation.

J. H. P., aged 32, was wounded on June 7th, 1917, the disability recorded being "gunshot wound of the right forearm with fracture of the radius." When seen by me in August, 1918, there were anterior and posterior long scars in the middle line above the wrist, adherent to and binding the underlying tendons and preventing their free action, especially as affecting extension of the fingers. Beneath the upper end of the anterior scar, which was 4 inches long by $\frac{3}{4}$ inch broad, a large fixed and tender neuromatous swelling was palpable in the course of the median nerve, giving rise on manipulation to electrical painful sensations referred to the area of cutaneous distribution of the median nerve in the hand, in which there was complete median paralysis and anaesthesia, with sores and other trophic changes. There was shortening of the radius by fracture and sequestration, but union was firm and its alignment good. An undue prominence of the head of the ulna was a consequence, with a disabling outward deviation of the hand.

He was admitted to St. George's Hospital, where I operated upon him on August 30th, 1918. In the first place the posterior scar was excised and the extensor tendons involved were freed. The anterior scar was then excised and the damaged implicated tendons were rectified and freed. All scar tissue as it involved the median nerve was removed, leaving an interval of $4\frac{1}{2}$ inches between the cut ends, the lower being flush with the upper margin of the anterior annular ligament.

Whilst this operation was in progress Mr. Fedden, in an adjacent theatre was amputating a lower limb through the thigh. The case (female) was one of chronic ulceration, but he was able to reassure me that the Wassermann test was negative. The skin surface was smeared with iodine, and I hastily cut down upon and removed a long portion of posterior tibial nerve, which, being of approximate calibre to the median nerve and abundantly surrounded with a loose fatty covering, appeared ideal for the purpose of a graft. This I dropped into a dish of methylated spirit and inserted in the wound, which was found bloodless on removal of its packing. The introduced nerve was cut to suitable length and sutured with fine catgut in position in accord with the anatomical principles described, a stay suture passed through the body of the nerve and graft first securing the ends, and small interrupted sutures circumferentially placed giving continuity of the sheaths. The wound surface was drenched with methylated spirit, dried, and given the slightest smear of bipp as an inhibitory agent against the development of sepsis. Fascia, skin, and subcutaneous tissue were united by catgut suture, no drainage being employed. Skin approximation was found impossible until linear incisions parallel to the wound on the radial and ulnar borders had first been made, the incisions passing only through the skin, leaving undivided the subcutaneous layer to preserve mobility when epithelialization should subsequently occur. The wounds healed by first intention, and the breaches made in the skin closed in a few weeks' time.

On October 14th, 1918, I performed a second operation, excising three-quarters of an inch of the ulna just above the attachment of the pronator quadratus. Coaptation was found difficult, and from the bone removed a disc the thickness of a shilling was therefore sawn and inserted to make the fit exact. Apposition was effected by a metal plate, the union being made secure and firm by screwing away from the line of junction. The deformity of the hand was thereby corrected. Healing was primary.

The subsequent progress of the case was most satisfactory. The man soon expressed a feeling that the hand was changed, that it felt alive. Tinell's sign was obtainable in the palm within three months' time. At the beginning of February, 1919, five months after the introduction of the nerve graft, an examination was made and the following notes recorded:

Union of the ulna firm; hand in straight alignment with the wrist. Extension of little and ring fingers beyond the straight line prevented by flexor tendon contracture. Hand grip good.

The hand was in a state of good nutrition, all signs of trophic

change having disappeared. There was absence of discomfort, tenderness, and pain.

Sensation to pin-prick wellnigh complete, being present over the whole median area with the exception of the tip of the index finger and the two terminal phalanges of the middle finger. Epicritic sensation present over the whole median area with the exception of the terminal phalanx of the thumb, the whole of the index finger, and the middle and distal phalanges of the middle finger. Thenar muscular power largely recovered, opposition of the thumb being present to considerable degree. Slight faradic response of abductor pollicis observable. Tip of thumb appposable to that of index and middle, not quite to that of ring and little fingers.

The hand at this time was restored to considerable practical use, and the man had resumed his occupation, which was that of a skilled electrician.

HYPERPYREXIAL HEATSTROKE:

A BRIEF NOTE ON ITS ETIOLOGY AND PREVENTION.

BY

K. G. HEARNE, M.B., CH.B. EDIN.

In a recently written thesis on heatstroke—a disease which I studied in Mesopotamia during the exceptionally hot summer of 1917—the etiology, prevention, and treatment of the condition has been discussed more or less fully. It is impossible here to do more than touch lightly upon a few of the chief points which have a practical bearing on the causation and prevention of the disease. The object of this note, therefore, is to suggest the adoption, in heatstroke countries generally, of the following principles of prevention, which have proved completely successful in Mesopotamia after a prolonged and very thorough test under varying conditions. The remarks on etiology are based on a close study of some 240 cases, many of which occurred in the huts of a large base hospital among patients who were already in hospital with some other complaint, and in consequence an excellent opportunity of observing the disease in all stages of its development was afforded.

Etiology.

As regards etiology, and notwithstanding the diverse theories that are put forth in present-day textbooks on the subject, my observations in Mesopotamia point most conclusively to the belief that heatstroke is entirely due to suppression of sweating, which may be present from one to forty-eight hours before the attack.

With sweating suppressed, the bodily temperature tends to adjust itself, in accordance with physical laws, to the temperature of the atmosphere, which may be 115° to 120° at the time, and even to rise higher, for, as Sutton¹ and Graham and Poulton² have pointed out, a rise in bodily temperature produces increased respiratory and nitrogenous changes, resulting in a further increase of internal bodily heat. The processes continue until, when a temperature of about 103° or more is reached, sudden unconsciousness, delirium, and convulsions appear—the result of the physical action of heated blood on the specialized brain cells. The clinical picture of the fully developed attack of heatstroke is thus formed.

I have myself repeatedly observed the pre-existence of suppression—in one case for as long as eighteen hours before the attack—while in numerous other instances I have obtained absolutely reliable histories of it from patients on their recovery.

The cessation of perspiration is probably due to exhaustion of the sweating mechanism during several previous days of intensely severe weather, and there is strong reason to believe that the defect is localized in the sweat glands themselves. Furthermore, large doses of diaphoretics are powerless to produce sweating when once suppression has set in.

Prevention.

By the early recognition of suppressed sweating the prevention of heatstroke becomes an extremely simple matter. The practice which I adopted among hospital patients under my charge in Mesopotamia was to inspect them all periodically—every hour on extremely hot days—and to detect in this way those who required preventive treatment; any who were discovered to have a temperature

of 103°, with complete suppression, were stripped and covered with a wet sheet. This measure simply amounts to an artificial means of producing the same physical effects as sweating. In cases in which the temperature had already risen dangerously high before discovery a portable electric fan directing a current of air over the surface of the wet sheet was placed beside the bed; the evaporative process was greatly assisted by it.

In mild cases, or where the treatment requires to be maintained for several days until the natural sweating power returns, a convenient modification of the method, and one more comfortable for the patient, is to raise the wet sheet on a couple of bed cradles, thus forming a kind of cool chamber in which the naked patient lies protected from the surrounding hot atmosphere of the hut. With this device the additional aid of a fan playing a current of air over the outside surface is usually necessary in order to produce an efficiently cool atmosphere below the cradles on very hot days.

Needless to say, the sheet requires to be kept wet, and much time and labour is saved by using for this purpose some form of spray, such as the Holder-Harriman pneumatic disinfecting spray, filled with cold water.

If it were possible to remove the patient to a ward which was artificially cooled to a suitable temperature the individual cooling devices would, of course, be unnecessary. The success of these preventive measures can be judged from the fact that in my hut (sixty beds constantly occupied) at the hospital, nine cases of heatstroke with four deaths occurred within the first few days of the 1917 heat wave, but, directly the preventive system was commenced, the outbreak stopped; only two more cases occurred during the remainder of the heatstroke weather, which lasted continuously for two months. The average number of cases occurring in this district (Basra) during the whole period was nine a day. Neither of the two patients who developed the condition in my hut after prevention had been commenced had been placed under preventive treatment.

It will thus be seen that hyperpyrexial heatstroke is an absolutely preventable disease, the leading signs of onset being a hot dry skin, which is typically harsh to touch, and a raised bodily temperature. There is usually also frequency of micturition. These signs are present from one to forty-eight hours before the attack, consequently ample warning is given. The position is simply this: that the patient, having lost his natural means of heat dissipation, requires his bodily temperature to be artificially regulated for him during extremely hot weather until he again begins to sweat, or until the heat wave abates.

If Europeans in heatstroke countries were made acquainted with the premonitory signs and principles of prevention, I see no reason why heatstroke, in a dry climate at least, should occur. I have had no experience of prevention in extremely humid climates such as Calcutta, where the atmospheric moisture may, possibly, hamper the evaporative process, but have no doubt that such a difficulty, if present, could be easily met by employing some other method of cooling the patient.

Even among troops on the march the principle of prevention is applicable. Water, and something that will act as a fan, are practically always obtainable, thus permitting an efficient form of first aid being applied to any man who exhibits the warning signs.

Among sleeping communities—for example, patients in hospital, or soldiers sleeping in barracks on very hot afternoons during heatstroke weather—periodic inspections are necessary in order to detect developing cases. These inspections can easily be carried out by an intelligent orderly, or staff of orderlies. The patient's general condition can be estimated roughly by touching the skin, and only occasionally is it necessary to take a thermometer reading, while those who are freely sweating can, practically speaking, be entirely disregarded.

In the after-treatment following upon an actual attack of heatstroke the tendency to relapses of hyperpyrexia are treated on exactly the same lines as for prevention. The patient frequently does not regain his powers of sweating for days after the attack.

REFERENCES.

¹ Sutton: *Journ. of Path. and Bact.*, 1909, vol. xiii, p. 62. ² Graham and Poulton: *Quart. Journ. Med.*, 1912, vol. vi, p. 82.

A STOCK VACCINE IN PNEUMONIA.

BY

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DURING two and a half months I had in my wards eighty-one cases of pneumonia. All were Indians, and almost all started as influenza, although such complications as malaria (M.T., B.T.), dysentery, and relapsing fever were present in addition to the pneumonia. All the cases were of the bronchopneumonic type; the sputum in practically all cases was excessive, purulent, and very often blood-stained, but not rusty. In over 90 per cent. of cases a Gram-positive strepto-diplococcus was the predominant organism; it was found also *post mortem* in the lungs. It was isolated by Captain J. D. Benjafield, R.A.M.C., and a vaccine was prepared from several strains, this vaccine being used as the stock vaccine in my treatment.

When I was using the vaccine for the first time I divided my cases, so that every third of those who had the strepto-diplococcus in the sputum was treated with the vaccine. Later, as I found the vaccine to be of value, every second case was treated with vaccine, and latterly every case of pneumonia which had had the streptococcus in the sputum received vaccine treatment; the sputum of every case of pneumonia was examined for the organism.

As regards other treatment, all cases have been treated similarly. All have been treated with a stock mixture consisting of potassium iodide, tincture of belladonna, and aromatic spirits of ammonia; as the cases occurred in a region where malaria is very common, even though that disease was not found to be present on the examination of two blood films at least, quinine was given daily. As the mouth was usually very dirty, and pyorrhoea alveolaris by no means uncommon, a thymol mouth-wash was given daily to every case. The usual stimulants and oxygen were given according to the circumstances of the case.

The dosage of the vaccine used as a standard was as follows, slight deviations being necessary according to the circumstances of the case; for instance, if a marked reaction followed one dose of vaccine the same dose was given when next the vaccine was due, and not the increased dose. The first dose consisted of five million of organisms injected subcutaneously; the second, given two days later, of ten million; the third, given three days after the second, consisted of fifteen million, and the fourth, given four days after the third, of twenty million. In every case when the temperature came down to normal the vaccine was stopped, but was given if any rise of temperature occurred again.

The statistics for the 81 cases seem to show that the stock vaccine is of great value:

1. Treated with vaccine (35 cases).					
Cures	...	...	...	...	30
Deaths	...	...	...	...	5
Mortality, 14.3 per cent.					
2. Not treated with vaccine (46 cases).					
Cures	...	...	...	...	30
Deaths	...	...	...	...	16
Mortality, 34.8 per cent.					

Among the five deaths in those treated with the vaccine three were complicated, one with malaria (B.T.), the second by acute bacillary dysentery, and the third was found at necropsy to have acute tuberculosis of the lung and pleura combined with tuberculous laryngitis as well as pneumonia. Only two of the deaths were uncomplicated, thus lowering the mortality in the uncomplicated cases to 5.7 per cent. In the cases not treated with vaccine six of the deaths occurred in cases complicated by other diseases, three being complicated by malaria (M.T.), two by malaria (B.T.), and one by a liver abscess, leaving a total of ten deaths from uncomplicated pneumonia, the mortality being decreased to 21.7 per cent. in such cases.

Four cases were treated with autogenous vaccines prepared by Captain Benjafield from the sputum of each case. All these cases seemed to be chronic, but all recovered, and a marked improvement was shown after the use of the autogenous vaccine.

THE HEALTH RESORTS AND THE STATE.*

BY

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THE establishment of a Ministry of Health marks a new era in the history of the medical profession and demands the closest attention and criticism, with a view to co-operation of every practitioner, without which it must fail to achieve any substantial success. In addition to united effort to further the broader aims of medicine each special branch must seek to develop its opportunities for the welfare of the nation. Sir Bertrand Dawson, in his recent addresses on the future of the medical profession, has pointed out how great a field of usefulness exists for the health resorts in this direction, especially in the early and preventive treatment of many diseases which seem peculiar to the strenuous life of to-day. If this field is to be cultivated to its fullest extent it is essential that all practitioners in such resorts should combine to guide the development of such places, whether they be spas, seaside resorts, or simple climatic stations, and to bring their claims as the convalescent homes of the nation prominently before the notice of the public and the state. A Ministry of Health, whatever its initial programme, must develop in the direction of providing care and treatment for the sick—primarily the poor, but ultimately for the whole community so far as they may elect to take advantage of it. National sanatoriums for tuberculosis already exist; health resort treatment for the soldiers has been freely provided during the war, and its logical sequel in the provision of the same for pensioners has followed; nationalization of hospitals is in the air, and will, I have no doubt, soon become a fact, and state recognition and control of health resorts will follow sooner or later, and it ought to be in the hands of the medical profession to determine what form it shall take.

Of the total working time lost by the population through illness a very large proportion is due to chronic diseases of the rheumatic type which are capable of being effectively treated in our spas. If sent for treatment early they can be restored to usefulness, but if allowed to drift, as they often are, they become hopeless cripples, such as may be seen in numbers in the Poor Law hospitals. In no class of case is there a greater prospect of saving years of usefulness to the state by early treatment, and such cases ought to be able to obtain the best treatment directly they are diagnosed. But how can this be done so long as the only hospitals specializing in such work are dependent on charity, and bound to limit the stay of patients by the subscriber's letter of recommendation or some similar means of accommodating the supply to the demand? The hospital at which I have the honour to be a member of the staff possesses over 300 beds; I have known a waiting list of over 500 names, many of the unfortunate people losing time which must make all the difference to their chances of cure. All such institutions should be controlled by the state in such a manner that no other factor shall influence the stay of the patient than that of the maximum benefit having been secured. In urging this I am not advocating the claim of any particular mineral water or, indeed, of any special line of treatment, but simply that such cases should be brought together under conditions of the most favourable kind as regards climate and surroundings—in fact, in health resorts, where will necessarily be congregated practitioners of the greatest experience in the management of such diseases. The equipment available must be of every kind—bathological, electrical, dietetic, etc.—and full provision must be made for bacteriological and chemical research, and x-ray work.

Nor is it only for the rheumatic diseases that such provision must be made, nor for the poorer classes only. A large section of the middle classes, who work long hours in shop or office, often under unfavourable conditions, cannot afford the cost of a visit to the spa or the sea of sufficient duration to restore their mental and physical balance, or the loss of income entailed by absence from work, while their income and so-called social position exclude them from hospital treatment on charitable lines. Largely for such cases Sir Bertrand Dawson has suggested

* Shortened version of a paper read before the Section of Balneology and Climatology of the Royal Society of Medicine on March 6th.

the provision of sanatoriums in the neighbourhood of large towns where they might reside for a period under a proper regimen of diet, hydrotherapy, systematic games, etc., while at the same time continuing in some measure to attend to their business. He looks for the establishment of such sanatoriums to private munificence, but it is doubtful if more than a fraction of what is required could be provided in that way, and it is not right that we should look to private charity for the performance of a duty which belongs to the state. It is to the interest of the state that the fullest facilities for maintaining and regaining health should be brought within the reach of every one; and, applying this principle, it follows that some scheme must be evolved in our health resorts to bring their advantages within the reach of all.

Some form of state supervision is therefore inevitable sooner or later, and it ought to lie in our own hands to decide what form it shall take. It will have to be decided whether every resort should provide for every class of patient or whether it would be better that there should be selected places wherein by means of a state subsidy the cost of treatment would be so reduced as to be within the reach of all, or whether the establishment of state sanatoriums would be the better plan. The natural advantages of small places, which may be far greater than those of their more prosperous rivals, should be developed to their fullest extent for the common good, remembering that they are often more beneficial to the neurasthenic or the sufferer from the early manifestations of arteriosclerosis than the fashionable spa or seaside resort. The sanitary equipment of every place claiming to be a health resort must be made as perfect as possible, satisfactory water supplies secured, and natural amenities developed; but so long as these requirements have to be provided out of local rates they will be beyond the reach of small places, and even the larger towns will be administered as trading concerns, and the financial welfare of the municipality will come before provision for the welfare of the seeker after health. To meet this difficulty the imposition of a cure tax on Continental lines has been advocated, but the establishment of such an innovation might prove disastrous to the town which set the example, and to be equitable it should be collected by the state and distributed according to the need of the different resorts without regard to the proportion contributed by each.

The medical profession in every resort ought to organize itself for the purpose of team work, either as a whole or in groups of partners, so that every case might be dealt with as if in a modern and perfectly equipped hospital—the physician, the surgeon, the practitioners in special branches, the radiographer, and the pathological chemist each doing his share. The *malade imaginaire* would soon be eliminated, or perhaps be found to be the subject of some obscure pathological process which has hitherto escaped our ken, and great discoveries would, I am convinced, be made in the beginnings of chronic disease and in its treatment, with infinite benefit to the community.

State recognition of the value of health resort treatment must be accompanied also by the establishment of systematic instruction in physical methods of treatment—hydrotherapy, climatotherapy, electrical and mechanotherapeutic methods, and short courses of instruction might with advantage be arranged in the great mineral water hospitals. This would not only benefit those whose intention it might be to practise in the health resorts, but would extend the use of physical methods in home treatment and would enable the doctor to select the right climate, mineral water, or type of sanatorium which would be of most benefit to his patient.

Possibly to some these views will seem Utopian, but to establish Utopia in the matter of health must be the aim of our profession if we are true to it. Our duty to the state demands all our energies and the subordinating of personal ambitions and inclinations to the common cause.

At a recent meeting of the Belgian Academy of Medicine, Dr. De Moor, of Brussels, read a communication embodying the results of a study of the growth (weight and size) of 11,000 children attending the schools of the Belgian capital during the four years of the war. He found that there was an average retardation of nine to twelve months in their development. This result he attributed to the bad food and housing conditions.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE ETIOLOGY OF RICKETS.

THE cause of rickets is still somewhat obscure. Still (*Osler's System of Medicine*, p. 776) considers the one determining cause to be faulty feeding or faulty assimilation. Rickets, he says, "is in fact a food disorder." Adami (*Principles of Pathology*, p. 1008) is inclined to regard the disease as a disorder of growth due to improper diet, overcrowding, and general unhygienic surroundings.

The contribution by Noël Paton, Findlay and Watson (*BRITISH MEDICAL JOURNAL*, 1918, vol. ii, p. 625) is welcome as throwing further light on the subject. Their observations appear to show that, in puppies at any rate, fresh air and exercise are more important than diet in averting the disease. In fresh air and exercise there are three factors—the actual air with its oxygen content, sunlight, and bodily exercise. In these observations several of the puppies which became rachitic were admittedly in a large airy room, and some of them apparently took quite a fair amount of exercise. Is it not, then, the third factor—sunlight—which is the determining element?

Experience in this country seems to support this conclusion. Nothing could be worse than the sanitation of the city of Srinagar. Filth diseases abound. The children are poorly fed. Hydrocarbons are deficient in their diet. Infants are often suckled for two or even three years. Poverty and squalor are universal. But rickets is extremely rare. In twenty thousand out-patients perhaps half a dozen cases may be seen. The overcrowding and unhygienic condition of Srinagar differs from that of large towns at home in the amount of sunlight. For nine months in the year the sun shines nearly all day. Even in the month of September the rays are so strong that a thermometer in sunshine will sometimes show a temperature of 130° F. When the sun shines, whether in winter or summer, the poor come out of their dirty close little rooms and work and sit about in the sunshine.

The only case of rickets I have seen here in an English child was in a large house, sufficiently airy, and under conditions where there was no lack of good nourishing food. But the house was gloomy. The light was obstructed by deep verandahs, and no sunshine ever penetrated the rooms. When the family moved to a new house with free access of sunshine the disease cleared up.

The essential point is that in the East, even where dwellings are insanitary and dark, the people live in the sunshine during the daytime.

There is one other point. Can rickets be an infective disease? This view has been put forth by Kassowitch and Morpurgo (*Centralbl. f. Path.*, xiii, 1902, p. 113). The experimental work on young rats with resulting rickets may, however, have been vitiated by operation of the same causes as those at work in the physiological laboratories of Glasgow. At the same time infection cannot be summarily excluded. It is possible that absence of sunlight is only a predisposing cause, just as waters rich in magnesian limestone salts do not produce goitre but predispose to the infection which causes it.

Kashmir.

ERNEST F. NEVE.

APPENDICITIS COMPLICATED BY UMBILICAL HERNIA.

A PRIVATE in the West African Regiment, about 30 years of age, was admitted to the Military Hospital, Tower Hill, Sierra Leone, complaining of pain in the right side; it had come on suddenly three days previously; he had not had a similar attack before. The temperature was 100° F., and the pulse 90. The bowels were regular; the tongue was slightly furred and moist; micturition was normal. He was very tender over the right iliac fossa, and the lower right rectus was distinctly rigid. Pain was most intense on deep pressure over McBurney's point. There had been no vomiting. A small reducible umbilical hernia was noted. This is very common in both sexes, and rarely gives rise to any trouble. A diagnosis of acute simple appendicitis was made. During the night the patient was very restless, and in the early morning complained of pain at the umbilicus. The hernial swelling was tense, and

tympanitic and could not be reduced. He stated that this had occurred once before.

A transverse elliptical incision was made round the umbilicus and the neck of the sac exposed and slit up. A loop of slightly congested ileum was reduced and a radical cure effected by overlapping the rectus sheath transversely, after closing the peritoneum with a purse-string suture.

The appendix was approached through a gridiron incision. It was found lying behind the caecum, to which it was bound by slight adhesions. It was about four inches long and acutely inflamed, the tip being nearly perforated. The adhesions were separated by gauze dissection and appendicectomy performed, the stump being carbolized and invaginated. The wound was closed in the usual manner, and the patient made an uninterrupted recovery.

The appendix was very oedematous, and there was a small patch of necrosis at the tip, through which a large stercolith escaped. The mucosa was acutely inflamed and showed numerous small haemorrhages.

Appendicitis is stated to be of very rare occurrence among the natives.

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Reports of Societies.

POLYCYTHAEMIA.

At a clinical meeting of the Medical Society of London held on April 14th, the President, Dr. A. F. VOELCKER, in the chair, amongst the cases shown were three with polycythaemia, in two of which it was symptomatic, whilst the third was an example of true splenomegalic polycythaemia.

In a case shown by Dr. J. WALTER CARR the patient was a man aged 22, who was suffering from dyspnoea and exhaustion on any exertion, and was subject to attacks of giddiness, loss of consciousness, and convulsive movements. Cyanosis and clubbing were present, the heart was a little enlarged to the right, but was otherwise normal. The red blood corpuscles numbered 8,200,000 per c.mm., the white corpuscles 7,200 per c.mm. The differential count was normal. Haemoglobin amounted to 136 per cent.; the colour index was 0.8. The blood pressure was equal to 120 mm. Hg. There was no enlargement of the liver or spleen. The urine was normal. Without enlargement of liver or spleen the case could hardly be regarded as one of idiopathic polycythaemia (Vaquez's disease), and the question arose as to whether it was a case of congenital heart disease without a murmur.

In the course of the discussion Dr. PARKES WEBER said that he thought it was probably a case of polycythaemia secondary to a large hole between the ventricles.

Dr. CARR also showed a case of congenital morbus cordis with polycythaemia in a girl aged 16. She had always suffered from breathlessness on exertion, and occasionally from attacks of precordial pain. She had had four attacks of rheumatic fever, but otherwise her health had been good. There was a loud rough systolic murmur accompanied by a well marked thrill in the pulmonary area, which was heard less loudly all over the precordium and in the back. The apex beat was in the fifth space in the nipple line, and the heart was slightly enlarged to the right. The blood pressure equalled 130 mm. Hg. The red blood corpuscles numbered 7,000,000 per c.mm., the white blood corpuscles 8,300 per c.mm.; the differential count was normal. The haemoglobin equalled 112 per cent., the colour index was 0.8. There was slight clubbing of the fingers and a little cyanosis.

The PRESIDENT pointed out that it was unusual that in this case, which on examination of the chest presented the features of pulmonary stenosis, there should be so little cyanosis and no definite clubbing.

Dr. F. S. LANGMEAD, while agreeing that in cases of pulmonary stenosis the most extreme degrees of cyanosis and clubbing were met with, said that he had often found a very loud murmur and considerable thrill in the pulmonary area in children who were quite free from symptoms of any kind.

The PRESIDENT showed a case of polycythaemia rubra with splenomegaly. The patient was a man aged 64. The family history was unimportant. The man had had pleurisy thirty years ago, but no other illness until twelve months ago, when he began to complain of pain across the abdomen and afterwards of pains in the back and in the veins of the legs. There was cyanosis of the ears, face, hands, and feet, and of the mucous membranes (conjunctivae, lips, mouth). The veins were turgid, but their walls not thickened. The spleen was enlarged, not tender, and reached for three fingerbreadths below the costal margin. There were no valvular lesions of the heart. A trace of albumin was present in the urine.

Blood Count: Red corpuscles, 11,320,000 per c.mm.; white corpuscles, 5,900 per c.mm.; haemoglobin, 120 per cent.

Differential Count: Polymorphs, 72 per cent.; lymphocytes, 22 per cent.; hyalines, 3 per cent.; eosinophil, 1 per cent.; basophil, 2 per cent.

The blood pressure equalled 135 mm. Hg.

Dr. EDMUND CAUTLEY showed a case of aortic aneurysm and (?) gumma in mediastinum, one of severe anaemia in a man aged 57 years, and a case of coeliac disease.

Lieut.-Colonel DONALD ARMOUR showed a case of cirroid aneurysm in the palm of the hand.

ANAESTHESIA.

A CLINICAL evening of the Section of Anaesthetics of the Royal Society of Medicine was held on April 4th, the President, Dr. LL. POWELL, in the chair. Mr. ASHLEY DALY reported a case in which direct massage of the heart restored the circulation and respiration when both had ceased in the course of an abdominal operation upon a patient in a state of severe shock. The PRESIDENT quoted a case of successful heart massage during laparotomy upon a middle-aged man with rigid abdomen. Dr. F. E. SHIPWAY related a case in which in a feeble man of 60 collapse ensued upon withdrawing the stomach from the abdomen. Heart massage was successful in restoring the circulation.

Mr. R. E. APPERLY read notes of a case in which heart failure followed change of position. The patient was a stout woman anaesthetized with "gas and ether" and open ether, for laparotomy. When the Trendelenburg position was adopted pulse and breathing ceased. These were restored by artificial respiration and horizontal posture. The operation being nearly completed, the Trendelenburg position was tried again, when the same sequel of events resulted.

The PRESIDENT related a case in which "twilight sleep" and spinal analgesia were successfully employed for Caesarean section upon a woman suffering from influenza and double pneumonia.

Dr. F. E. SHIPWAY read notes showing the value of oil-ether anaesthesia in a case in which a physician had advised against operation on the ground that no anaesthetic could be tolerated. The patient had carcinoma of the stomach and had been the subject of aortic aneurysm for four years. He also related a case of enucleation of tonsil in a man weighing 24 st., whose build, huge abdomen, large pendulous cheeks and chin, and very short neck, made him appear a most unfavourable subject for anaesthesia. Operation was successfully performed under anaesthesia induced by C.E. mixture, and continued by warm chloroform and oxygen, bromide and morphine and atropine having been used as preliminaries.

Mr. H. E. G. BOYLE read notes of a case of laryngofissure with removal of intralaryngeal growth, performed under gas and oxygen. Morphine and atropine were used beforehand, and "gas and oxygen" was admitted through a catheter passed into the tracheotomy tube, the tracheotomy having been performed under gas and oxygen with rebreathing.

THE ENIGMA OF THE BIRD'S BRAIN.

At the meeting of the Manchester Literary and Philosophical Society on March 18th Professor G. ELLIOT SMITH, M.A., M.D., F.R.S., read a paper entitled "The Bird's Brain." It had, he said, always been an enigma that, in spite of their very scanty equipment of obvious cerebral cortex, birds should display, in their powers of tactile, visual, and acoustic discrimination, their associative memory, and their ability to learn by individual experience,

outstanding evidence of functions such as are intimately associated in mammals with the activities of the cortex. The explanation of this apparent discrepancy between the morphology of the brain and the bird's aptitude to profit by experience was provided by the fact that a great part of the structure usually called "corpus striatum" was cortical in origin and in its fibre-connexions. The structures called by Edinger "hyperstriatum" (Kappers's "neostriatum") and "epistriatum" (Kappers's "archistriatum") were composed of modified cerebral cortex; and the former represented not only the neostriatum (nucleus caudatus and putamen) of the mammalian brain, but also the primordial neopallium or true cerebral cortex. The clue to the interpretation of these homologies was provided by the archaic reptilian brain that had survived in *Sphenodon*, in which was displayed with diagrammatic clearness the formation of a great cortical ingrowth into the lateral ventricle. The reason for this curious transformation was the expansion of the lateral edge of the pallium under the influence of a suddenly increased influx of sensory fibres (tactile, visual, and acoustic) from the thalamus. In virtue of the principle of neurobiotaxis (Kappers), this cortical overgrowth remained moored as near as possible to the incoming thalamic fibres; hence the development of the "dorsal ventricular ridge" (Johnston). In mammals the whole of the newly modified cortex did not become drawn into the ventricular ridge; part of it remained upon the surface, free to expand and develop into the neopallium; the rest became transformed into nucleus caudatus, putamen, and nucleus amygdalae. But in birds the whole mass became intraventricular, and represented not merely the neostriatum but also the rudimentary neopallium.

Reviews.

WAR NEUROSES.

THE treatment of the important group of cases classed as war neuroses has hitherto been mainly confined to a few selected officers in the R.A.M.C., but now that such cases are being dispersed in largely increasing numbers throughout the country it becomes necessary for all practitioners to have some knowledge of the best methods of diagnosis and treatment. Relapse of the apparently cured and care of those discharged to pension will give cause for anxious thought, and therefore Dr. MACCURDY'S simple and clear statement of the main conditions will be welcomed.¹ Bringing to the subject many years of experience in civil neurological work, and viewing the war problems from the standpoint of an observer in British military hospitals, he has arrived at certain definite conclusions which, if not altogether accepted by most war neurologists, are yet likely to prove helpful to those less experienced.

A true conception of war neuroses demands a study of psychology in warfare. This has not always been sufficiently recognized in the past, either by the medical profession or by the military authorities. For the latter, since warfare leads to an increasing strain on the human mechanism, such knowledge is essential. A careful study of the psychological results of aerial bombing, for instance, is likely to lead to more useful conclusions than a mere regard for the material results. So also knowledge of how to produce in the armed forces of the enemy the mental breaking strain, whether in individuals or in formations, and at the same time to protect his own troops, becomes to an army commander almost as important as the infliction or the prevention of physical injuries.

Dr. MacCurdy considers that war neuroses may be divided into two classes—the "anxiety states" and the "conversion hysterics." He regards them as being simple in origin—far more so than similar conditions in civil life, and as originating largely in the elementary instinct of self-preservation. In the "anxiety states" the more common causes are shown to be fatigue—whether physical or mental—and the strain of living constantly on the alert, associated, in officers especially, with a sense of great responsibility. This produces disturbed sleep, and a vicious

circle is set up, leading ultimately to a desire for death as an end to the misery, and the final collapse, which may be ushered in by a stuporous condition. The author considers that disturbance of the endocrine functions has not been proved to play a very important part. He also regards an intensive bombardment as being a prominent factor in the causation of these mental states. Both these views may be questioned. The slow, intermittent bombardment at uncertain intervals is by some regarded as more trying than the short hurricane of shells. The mental struggle of the man who feels himself beginning to break, and who makes conscious efforts to conceal his condition, and to avoid the appearance of cowardice, living meanwhile a life of mental martyrdom, is well portrayed. Perhaps one day we shall have an account written by a neurologist or a psychologist of his own condition, if such a one has had the necessary personal experience. As might be expected, officers suffer more in proportion than men from these "anxiety states." The treatment may be summarized as immediate rest, the avoidance of drugs, progressive work, and the intelligent individual sympathy of the doctor with his patient.

"Conversion hysteria" is defined as a neurosis in which there is an alteration or dissociation of consciousness regarding some physical function; for example, mutism, paralysis, or anaesthesia. It occurs more frequently in soldiers than in officers, and is often implanted on some physical trauma. Here again self-protective individualism plays its part, for such a manifestation will naturally protect the individual from further fighting. For these conditions re-education is advocated as the best treatment, to the exclusion of electricity and hypnotism.

The argument of the book is supported by many illustrative cases, and the author has given a simple but eminently helpful outline of this complex subject.

SYPHILIS AND PUBLIC HEALTH.

At the present time, when the air is full of reconstruction and the attitude of the lay and professional mind is that of expectancy as to changes in the way in which syphilis should be regarded and dealt with, an impartial survey of the data as to prevalence, sources of infection, personal prophylaxis, and public health measures against this disease is of great value. Lient.-Colonel E. B. VEDDER'S book on *Syphilis and Public Health*,² published by permission of the Surgeon-General of the United States Army, admirably meets this want. The author has had exceptional opportunities of studying the subject in the United States army, having had a long term of service both in the field and in garrisons, followed by four years of laboratory work. The error in his method of carrying out the Wassermann reaction, which is described in the appendix, works out at 1 per cent.

The first hundred pages are devoted to a statistical account of the prevalence of the disease, about half the space being occupied by details about the United States, where the importance of the disease as a disposing factor to pulmonary tuberculosis is shown by the presence of syphilis in 20 to 30 per cent. of the ordinary class of consumptives in the sanatoriums. In speaking of the spread of the disease in remote parts of the world he epigrammatically remarks that probably whole races become thoroughly syphilized much faster than they become civilized.

On the basis of numerous statistics a strong case is made out for prophylaxis both before and immediately after coitus, and in meeting the objection to prophylaxis—that venereal disease is God's punishment for immorality and that the fear of disease deters many from vice—he insists that the punishment falls on innocent wives and children, and is therefore not a just punishment such as a just God would devise; and that the idea that the fear of disease acts as a deterrent to immorality is a very widespread delusion, for young men fear little; this is not due to ignorance, as medical students are not more moral than other students. He, however, insists that satisfactory results from prophylactic measures can only be expected among bodies of men under strict discipline, military or otherwise. He concludes that notification, although desirable, cannot be effective until ample facilities for treatment

¹ *War Neuroses*. By John T. MacCurdy, M.D.; with a preface by W. H. R. Rivers, M.D. Cambridge University Press. (Pp. ix + 132. 7s. 6d.)

² *Syphilis and Public Health*. By Edward B. Vedder, A.M., M.D., Lieutenant-Colonel, Medical Corps, United States Army. Philadelphia and New York: Lea and Febiger. 1918. (Pp. 315. 2.25 dols.)

are provided, and gives a detailed summary of the requirements for the control of syphilis by a community. Though largely based on the conditions in the United States this work should be read by any one in this country seriously interested in the problem of venereal disease.

CONSCIENCE AND FANATICISM.

It is a far cry to the thirteenth century Ayenbite of Inwit, wherein the first English writer on this theme essayed to expound his subject in 10,000 lines. To the formidable mass of literature that has grown up on this foundation during the passage of seven hundred years Mr. G. PITT-RIVERS has now added a volume entitled *Conscience and Fanaticism: An Essay on Moral Values*.³ When conscription became law the subject entered a new phase and has taken a place in public general discussion such as it never had before.

The "conscience" in matters of religion has always been recognized and accepted, but the conscience which forbids a man to make a road for an army or to infuse a cup of tea for a soldier, or even to hand a bandage to a wounded combatant, is something entirely novel. But there it is, and even the law has given public acknowledgement of its existence and provided safeguards against its being outraged. The time is, therefore, opportune for a discussion of what conscience really is, and as to the sphere within which its dictates should be regarded as inviolable. Mr. Pitt-Rivers's contribution to the subject puts aside all religious sanctions and frankly bases "conscience" upon utilitarian grounds. The utility may not be very clear to the individual, but it comes down to him by inheritance from ancestors who experienced it. This instinct, or hereditary influence, in a particular life will be modified by various factors—Emotion, Judgement of Ends, Environment, and Cosmic Suggestion. The last of these is the author's explanation of the psychology of the crowd. In the exposition of this thesis many subjects are touched upon—subliminal consciousness, faith healing, hypnotism, symbolism, auto-suggestion. As the press is described by the author as an organized concern for the dissemination of lies and counter lies and the propagation of hate, envy, and humbug, we have some hesitation in giving any opinion as to his work. This we may say, however, that the links of the argument are not always very evident, and that the explanation of conscience seems to consist in explaining it away altogether.

JOHNSTONE'S "MIDWIFERY."

THE second edition of *A Textbook of Midwifery*,⁴ by Dr. R. W. JOHNSTONE, has appeared from the Edinburgh Medical Press Series, and, without presenting any very unusual features, it has substantiated its claim to place before the student and practitioner a concise presentment of midwifery. The new edition contains additional matter which deals with the most recent topics of midwifery and gives the author's views on them. They are a little disappointing and are not dealt with in any great detail, but this will doubtless be remedied as knowledge of these subjects accumulates and becomes more definite. Apart from this, the subject matter is clearly handled, and a very commendable feature of the book is the simplicity and brevity of the language in which the main outlines are laid down. This is especially true of the chapter on embryology, for, although there is a difference on certain points from the usually accepted teaching, the author gives a clear account of his own view of the subject and does not allow himself to wander from the main issue to detail at length what other people think and so confuse the mind of the reader. The illustrations are skilfully drawn and include a considerable number from other textbooks on the same subject. These enhance the value of a very serviceable volume, which can be recommended to students and practitioners of midwifery.

³ *Conscience and Fanaticism: An Essay on Moral Values*. By George Pitt-Rivers. London: Wm. Heinemann. 1919. (Demy 8vo, pp. xvi + 112. 6s. net.)

⁴ *A Textbook of Midwifery*. For Students and Practitioners. By R. W. Johnstone, M.A., M.D., F.R.C.S., M.R.C.P.E. Second edition. London: A. and C. Black, Ltd. 1918. (Cr. 8vo, pp. xxvi + 495; 264 figures. 12s. 6d. net.)

NOTES ON BOOKS.

SIR HENRY MORRIS's introductory address to the meeting of the medical profession held in the Steinway Hall, London, on October 1st, 1918, was reported in the *JOURNAL* of the same week. He has since published it in a pamphlet,⁵ together with additional remarks on the need of medical representation in Parliament.

In a pamphlet coming to us from Buenos Aires Drs. CASTEX and MATHIS uphold the simple theory that ulcers of the stomach and duodenum are exclusively syphilitic in origin.⁶ The infection is to be regarded as congenital in nine-tenths of the patients developing such ulcers before the age of 30, and as acquired in nine-tenths of those suffering from them after that age, the remaining tenth of the cases being due to the acquired or the congenital forms of syphilis respectively. The authors argue that the treatment of gastric and duodenal ulcer must be anti-syphilitic if it is to be curative; treatment on dietetic lines they describe as palliative only. They record a number of cases illustrating their point of view. The essay suggests that the etiology of these ulcers is not the same in the Argentine as it is in this country.

Volumes 32 and 33 of the *Transactions of the American Climatological Association*, for the years 1916 and 1917, contain a number of papers that should interest general practitioners of medicine in America as well as specialists in balneology and climatology all the world over; to a large extent these papers deal with the general aspects of diseases of the lungs or heart.

⁵ *Medical Men in Parliament*. An address delivered by Sir Henry Morris, Bt. London: Harrison and Sons. 1918. Price 6d.

⁶ *Sifilis hereditaria tardia. La Ulcera Gastrica y Duodenal*. By Mariano R. Castex and Adolfo Mathis. Buenos Aires: A. Guidi Buffarini. 1918. (Roy. 8vo, pp. 44.)

ROYAL MEDICAL BENEVOLENT FUND.

At the meeting of the Committee on April 8th, 1919, thirty cases were considered and £305 voted to twenty-five of the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 74, of M.D.Lond. who died in 1877. Only certain income £56 12s. per annum from investments, etc. Voted £12 in twelve instalments.

Widow, aged 66, of L.S.A.Lond. who died in 1913. Was left unprovided for. Has army allowance from son, who is a private. One daughter married, and unable to help. Pays 12s. 6d. a week rent. Voted £2, and referred to the Guild.

M.R.C.S.Eng., aged 82, widower, who has a pension of £100 a year, but lost other income through death of wife, who had an annuity. Suffers from ill health. Relatives are temporarily paying the rent, which is £38 per annum. One daughter, aged 44, who was formerly a governess, but is now at home looking after her father. Voted £26 in twelve instalments.

Daughter, aged 58, of M.R.C.S.Eng. who died in 1898. Receives a pension of 6s. per week from an assurance company where she used to work. Pays 3s. a week rent for one room. Relieved four times, £53. Voted £15 in twelve instalments.

Daughter, aged 50, of M.D.Glasg. who died in 1872. Earns £1 per week by clerical work and takes in paying guests when possible. Lives in own house. Pays £8 a year for rates. She finds it difficult to manage owing to the high cost of living. Relieved four times, £40. Voted £10 in two instalments.

Widow, aged 50, of M.B.Edin. who died in 1912. Was left totally unprovided for, with seven children, the two youngest still at school. Receives £22 from other charities and £65 from children. Relieved seven times, £132. Voted £20 in twelve instalments.

Widow, aged 64, of L.R.C.P.Irel. who died in 1916, and was an annuitant of the Fund and other charities. Applicant was left without means. Has £30 from another charity and £15 from friends. Rent and rates, £48. Relieved three times, £29. Voted £15 in twelve instalments.

Widow, aged 43, of L.R.C.P.Edin. who died in 1917. Applicant's husband died unexpectedly, and left her with two children, now aged 15 and 11. Only income £70 from dividends. Rent and rates £20. Relieved once, £10. Voted £15.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.1.

British Medical Journal.

SATURDAY, APRIL 26TH, 1919.

SIR CLIFFORD ALLBUTT'S PORTRAIT.

THE Council of the British Medical Association has asked the President, Sir Clifford Allbutt, K.C.B., F.R.S., to accept a portrait of himself as a gift from members of the medical profession, and he has consented to give sittings for the purpose to an artist of eminence. Sir Clifford Allbutt has been President of the Association since August, 1914, and has on many occasions shown the deep interest he takes in its work. Age sits lightly upon him; he took an active part in the recent most successful Special Clinical and Scientific Meeting in London, and will be in the chair at the annual meeting to be held at Cambridge in 1920. Sir Clifford Allbutt has been Regius Professor of Physic in the University of Cambridge since 1892. So great is the respect, and, if we may be permitted to say, the affection, in which he is held by all ranks of our profession, that very many will without doubt wish to join in this presentation to him. It has accordingly been decided to limit the amount of individual subscriptions to one guinea. The Treasurer of the British Medical Association is now prepared to receive subscriptions of this or lesser amount from any member of the profession. Cheques should be made payable to the "Sir Clifford Allbutt Presentation Fund," and crossed London County, Westminster, and Parr's Bank.

THE PROFESSIONAL WAR COMMITTEES.

To Scotland we owe the origin of the first of the professional war committees. To the Metropolitan Counties Branch Council of the British Medical Association is due the credit for laying the foundations of the Central Medical War Committee. From the Central Medical War Committee arose the suggestion for the formation of the Committee of Reference. To the National Insurance Commissioners the three Committees were indebted for their recognition as statutory bodies. From Mr. Winston Churchill, a politician in a hurry, the professional committees received their *coup de grâce*. Such is the history, in brief, of the movement whereby throughout the war the policy of retaining in medical hands the management of medical affairs was maintained. It may be of interest to give a fuller account of the work undertaken by these committees, and the part played by the Association in their work.

Within a few weeks of the declaration of war the first step was taken by the Scottish Committee of the Association at the instance of its chairman, the late Dr. Hamilton of Hawick, and the Scottish Medical Service Emergency Committee was formed, consisting of representatives of Scottish universities and medical corporations, and of the British Medical Association. It was in January, 1915, that the first definite step was taken in England: two members of the Metropolitan Counties Branch then proposed at the Council meeting of the Association that a special committee of the British Medical Association should be formed

to deal with war questions. The Council, however, considered it better to await the meeting of the Representative Body, and in the meanwhile referred the questions that were arising to the existing Committee of Chairmen of the Standing Committees of the Association.

In April the Metropolitan Counties Branch Council, finding many urgent matters to deal with, set up a War Committee of its own; an office was provided for it in the Common Room of the Association, and it began to make a list of all medical practitioners within the metropolitan area. This experiment after two or three months made it plain that the matter could not be dealt with by areas acting independently, and that the work begun by the Metropolitan Counties Branch must be extended to the whole of England and Wales. The Central Medical War Committee was accordingly constituted at the Annual Representative Meeting in July, 1915. The representatives of the Association were the four *ex officio* members; four members elected by the Council; four members elected by the Representative Meeting from among its own body; and four other persons also chosen by the Representative Body—namely, Sir William Osler, Sir T. Clifford Allbutt, Dr. A. E. Shipley, Master of Christ's College, Cambridge, and Dr. T. Jenner Verrall. Six other members representing the universities, colleges, and other medical bodies were co-opted, and later the number of members was increased to thirty.

The terms of reference of the Committee were "to organize the medical profession in such a way as will enable the Government to use every medical practitioner fit to serve the country in such a manner as to turn his qualifications to the best possible use, and to deal with all matters affecting the medical profession arising in connexion with the war." In October, 1915, the Insurance Commissioners became alive to the fact that the increase of the army and the imminence of conscription might necessitate closer organization of the medical profession if the panel service was to be maintained. Accordingly they approached the Central Medical War Committee, which was then engaged in compiling an annotated list of the whole of the medical profession in England and Wales, with a view to co-operation. From this it resulted that throughout its existence the meetings of the Committee were attended by representatives of the Insurance Commission, the Local Government Board, and other Government departments. This co-operation was of the highest value to the Committee; first because the Insurance Commission, and later the Ministry of National Service, supplied a great deal of indispensable clerical assistance; and secondly, because it was through the Insurance Commissioners that the three committees became recognized as statutory professional committees when the Military Service Acts were passed. Thus the committees, which at their origin were of the nature of advisory committees to the Director-General A.M.S., on matters affecting the relation between the medical demands of the army and the medical requirements of the civil population, subsequently became active recruiting agencies to obtain medical officers for the R.A.M.C., while retaining sufficient independence to criticize from time to time the demands and methods of the War Office authorities.

The work undertaken by the Central Medical War Committee was wide and varied. In addition to the task of preparing the list of the medical profession, showing ages and conditions of practice, a scheme of enrolment was devised while service in the forces was still voluntary, and a system of local war committees

representative of the whole medical profession was set up throughout the country. Difficulties in connexion with the selection of members of the staffs of London hospitals led to representations being made to the two Royal Colleges, and these representations resulted in the formation of the Committee of Reference. An Irish Medical War Committee was also established. Under the Military Service Act of 1916 it was provided that if a medical man of military age produced a certificate of enrolment, the recruiting authority would refrain from further action, and it recognized the committees as professional committees "to deal with claims for exemption made in respect of duly qualified practitioners, the decision of such committees to be binding on tribunals." This recognition involved laborious investigation of the medical conditions of every district and frequent and prolonged meetings of the Committee for the hearing of appeals against military service. It was during this work that the War Office made the unfortunate mistake of calling up for military service, in April, 1917, all medical men under 41. The combined protest of the Central Medical War Committee and the Committee of Reference led to a rapid abandonment of this ill-considered proposal and the tender of suitable apologies by the military authorities.

Other noteworthy pieces of work undertaken by the Central Medical War Committee were the organization of National Service Medical Boards throughout England and Wales at extremely short notice; the nomination of members for Neurasthenia Boards; the preparation, in collaboration with the Committee of Reference, of a scheme for dealing with dischargeable soldiers; the investigation of methods for carrying on central surgeries; the consideration of what was called "mobilization of the whole profession," which led to the drafting of a scheme of substitute medical service for submission to the Ministry of National Service; the criticism of certain orders of the Food Controller as to rations for invalids; and the preparation of a scheme for the release of medical officers from the forces. With regard to central surgeries and substitution service, it so happened that the armistice came in time to prevent the trial of either of these experiments on a large scale. That the supply of doctors for the civil population had reached a dangerously low level was shown by the second wave of the influenza epidemic at the close of 1918. If hostilities had continued it would probably have been impossible to avoid something like mobilization of the whole profession, unless a method had been found to force upon the War Office a more economical use—or at least co-operation with the civil profession in the use—of medical officers in the army.

In the last months of its career the Central Medical War Committee prepared for the Ministry of National Service a scheme for the demobilization of medical officers. The fairness of this scheme was almost universally recognized by the civilians to whom it was to apply. It was adopted by the Ministry of National Service and was in process of application. Unfortunately, however, it could not be made to work rapidly enough in the early stages; and for this various causes may be surmised. Thus, excellent as the scheme was, it was perhaps a little above the comprehension of plain men serving too far away for personal instruction. Again, any scheme of orderly release was handicapped by the fact that applications for demobilization could be made through a dozen channels instead of one, as was the case in matters of mobilization. The slowness of the procedure resulted in questions in the House of Commons. An impulsive

politician, without consultation with those acquainted with the subject, sent an imperious demand for the release of an absurd number of doctors in a totally inadequate space of time. The whole machinery built up by the Central Medical War Committee was thus thrown aside, and for practical purposes the professional war committees ceased to exist.

The basis on which the professional war committees were built up was, as has been said, the wise policy of keeping in medical hands the management of medical affairs through every turn of the wheel of war. To the Association in Scotland great credit is due for its early grasp of this principle, and for the decision to make its war committee representative at once of the whole Scottish profession. The parent Association, when the need for the work became clear, placed its resources in money and organization freely at the disposal of a national committee for the whole profession of England and Wales. The work was often of an invidious nature, and might easily have been dangerous to the prestige of the Association with its members. The fact that it was undertaken as a patriotic duty, and was carried out successfully for so long a period, entitles the British Medical Association to the eternal respect of the medical profession.

ANTIRABIC TREATMENT IN LONDON.

IN consequence of the appearance of rabies in dogs in the neighbourhood of London, and of the fact that three or four persons have been bitten by a dog definitely ascertained to be rabid, a new arrangement has been made by the Local Government Board which will enable antirabic treatment to be given in London as well as in Plymouth. The treatment will be given at the Pathological Department of St. Thomas's Hospital by Dr. L. S. Dudgeon, C.M.G., who has been supplied with antirabic material prepared at the Pasteur Institute in Paris and sent over at frequent intervals. This consists of dried cords of different ages preserved in glycerin and kept in the cold, from which the necessary emulsions are made as required. The normal course of treatment involves daily attendance for a fortnight. There is, of course, no necessity for the persons undergoing treatment to stay in the hospital. In order, on the one hand, that antirabic treatment should be offered to and urged on those who have been exposed to risk, and, on the other hand, to avoid applications for treatment for which there is no occasion, a regular system of interchange of information has been established between the medical officers of the Local Government Board, the Department concerned with the provision of antirabic treatment, and the Board of Agriculture, which is responsible for dealing with all questions relating to rabies in the dog. Persons bitten by suspected dogs should inform the police, through whom the necessary inquiries will be made in regard to the animal. The medical officer of health of the district will be informed in due course through the Local Government Board if the veterinary officers advise that the dog is proved to be rabid or if the symptoms in the dog are sufficiently suspicious to justify antirabic treatment before the confirmatory diagnosis is available. It is part of the system that the inspectors of the Board of Agriculture and the police authorities at once bring to the notice of the medical officer of health any suspicious case of dog bite reported to them. The medical officer of health, who then communicates with the Local Government Board on the case, is asked to obtain and supply the following particulars: (a) Name, age, and address of the person bitten. (b) Date when bitten. (c) Severity of the bite and part of the body bitten. (d) Name and address of owner of the dog, or other information which will enable the dog to be identified. (e) Whether rabies in the dog has been

diagnosed locally. When this information and the veterinary evidence show that the dog was rabid and that there has been a definite wound or abrasion of the skin which may have been infected, the case will be one for antirabic treatment. The medical officer of health will be informed of the facts, and all arrangements for the attendance of cases at St. Thomas's Hospital must be made through him. As previously announced, local authorities are empowered to pay expenses in necessary cases.

AN INDIAN PASTEUR INSTITUTE.

In the report for 1917 of the Pasteur Institute, Kasauli (India), the director, Major A. G. McKendrick, M.B., I.M.S., states that the Indian patients numbered 4,824 and the European 382, a total of 5,206, which was 154 below the number of the previous year. The decrease is attributed mainly to the opening of the new Pasteur Institute at Shillong, which greatly reduced the number of patients going to Kasauli from Bengal and Assam. The number of cases from the British and Indian armies was 724, a marked increase; 311 of them came from Mesopotamia. In the case of 405 persons who applied, treatment was not considered necessary or was discontinued on receipt of information that the biting animal had not succumbed from rabies. Of those who received treatment 68, including two Europeans, contracted the disease. Of these, 9 died during the course of the treatment, which lasts fourteen days, 15 within fifteen days after discharge, and 44 more than fifteen days after discharge. The failure rate was 0.85 per cent., as compared with 0.80 per cent. for the previous year. The total death-rate for all patients was 1.31 per cent. Among Indians it was 1.37 per cent., a rate almost identical with that for the quinquennial period ending 1916. An analysis of 1,771 cases from areas definitely rural in character showed that the proportion of jackal to dog bites was 29.1 per cent.; the mortalities for dog and jackal bites were respectively 1.11 and 2.02 per cent. An analysis is being made of upwards of 6,000 cases to ascertain whether the difference noted above is due to the saliva of the jackal being peculiarly virulent, or whether, as is considered more likely, this apparent greater virulence is a secondary effect, dependent upon multiplicity of bites, their depth, position, etc. In addition to inoculations for rabies, the Institute, which is the provincial laboratory for the Punjab, made a number of examinations for the diagnosis of the enteric fevers, Malta fever, syphilis, malaria, and tubercle. Over 600 doses of vaccines and autogenous vaccines were sent out.

THE INTER-ALLIED RED CROSS CONFERENCE.

An inter-allied conference of representatives of national Red Cross societies was held at Cannes during the first fortnight of the present month. Delegates were present from France, Great Britain, Italy, the United States, and Japan. The conference formed the first step towards the drawing up of a wide programme of Red Cross work, in the interest of mankind in general under peace conditions. The opening discussions were concerned with the desirability of proceeding at once with the immediate organization of an international council and bureau of hygiene and public health, to act as a link between the national Red Cross societies. This central health bureau, as outlined, would be concerned with schemes for child welfare and for the prevention of tuberculosis, venereal disease, and epidemic disease generally. After full discussion the conference formally gave its support to the proposal of the Committee of Red Cross Societies, that a central organization should be set up to stimulate and co-ordinate the voluntary efforts of all nations, through their respective Red Cross societies, for the promotion of sound measures for public health. In the report of the section of tuber-

culosis the signatories express the opinion that the following factors are fundamental in any organized campaign: (1) Dispensaries on an adequate scale, furnished with laboratories and proper equipment, and facilities for early diagnosis, and with specially trained nurses to carry into the patient's home the necessary care, instruction, and advice; (2) systematic inspection of school children; (3) adequate hospital treatment for advanced and acute cases; (4) sanatorium facilities for all suitable cases; (5) popular education. The report recommends the encouragement of all efforts for the improvement of the standard of general living and of working conditions of the people. The subcommittee on venereal diseases in its report lays down that any comprehensive scheme for combating these diseases must embody measures for the protection of individuals not yet affected; the elimination of environmental conditions favouring the spread of venereal disease; the discovery, treatment, and control of persons already infected; and the education of medical practitioners, nurses, and attendants. The malaria subcommittee's report deals with international control of this disease, and recommends that the proposed international health bureau should keep in touch with the progress of malaria control in each country for the stimulation and guidance of all. It was originally proposed that the general programme drafted by the delegates should be submitted to a further conference of all the Red Cross societies, to be held at Geneva thirty days after the declaration of peace; but it is understood that this conference has been postponed indefinitely.

PITUITARY HEADACHES.

The severe headache of frank acromegaly is familiar, but perhaps more interest attaches to the early and less easily recognized manifestations of pituitary disorder before there are any permanent structural changes in the gland. The etiology of headache is so multifarious as to be sometimes baffling, and accordingly an article on pituitary headaches and their cure, by Pardee,¹ is of practical use. This headache is frontal, deep behind the eyes, and the patient may indicate its position by placing a finger on each temple and pointing inwards towards the hypophysis. It resists ordinary treatment, is accompanied by so much fatigue that the victim can hardly drag himself or herself about, lasts from half an hour to two days, is commoner in women than in men, may coincide with menstruation, and pass off very suddenly. The skin on stroking shows a broad white line due to adrenal insufficiency, which is ascribed to the drain on adrenal function by the exhausted pituitary; and at the climax of the attack there may be nausea and vomiting. As the pituitary and the adrenals control the mobilization of sugar the subjects of these headaches not unnaturally show anomalies of sugar metabolism and periodically have an intense craving for sweets, the satisfaction of which is almost invariably followed by a characteristic headache. The patients show signs of dyspituitarism, such as coarse hair with male distribution on the female, and vice versa, the eyebrows heavy and tending to meet, and in the female a moustache. The headaches are due to enlargement of the gland either from physiological or pathological causes, such as adenoma. The enlargement may be cyclical and connected with menstruation, compensatory to disease of the other ductless glands, or due to mental or traumatic shock. Skiagraphically the sella turcica may show various abnormalities, contraction or enlargement with apposition of the clinoid processes, or erosion of the clinoid processes. The administration of the whole pituitary gland cures these headaches and the accompanying symptoms in a large percentage of the cases, provided there is no progressive new growth of the pituitary body.

¹I. H. Pardee, *Arch. Int. Med.*, Chicago, 1919, xxiii, 174.

THE SECTIONS AT THE CLINICAL AND SCIENTIFIC MEETING.

IN our issues of April 5th and 12th short notes were given of the discussions in the Sections of Medicine and of Preventive Medicine and Pathology; the first day's discussion in the Section of Surgery, on gunshot wounds of the chest, was briefly reported on April 12th, p. 457. We bring to a close these short and necessarily incomplete accounts of the morning sessions by printing below reports of Thursday's and Friday's discussions in the Section of Surgery. The opening addresses on each day in each of the sections had been printed beforehand and circulated to those intending to take part in the discussions, and were published in the Handbook of the Meeting. They will be included in the full "Proceedings," which will be published later in a separate volume and forwarded to every one attending the meeting whose address is known, and to all members of the Association. We also complete this week our account of the afternoon demonstrations which formed so valuable a feature of the meeting.

WOUND SHOCK.

A discussion on shock was held in the Section of Surgery on April 10th, with Sir Anthony Bowlby in the chair.

Professor W. M. Bayliss, in opening the subject, said that several causes entered into the production of shock, such as haemorrhage, toxic products from injured tissues, cold, and fatigue, with the consequence that there was a deficiency of blood in the circulation, usually shown by a fall of blood pressure. The blood was held up in the tissues and diminished by loss of plasma through the capillary walls, which had become abnormally permeable owing to defective blood supply. Whatever fluid was used for intravenous injection it ought to be one that did not leave the blood vessels. It had become evident that the really vital matter in the treatment of wound shock was to keep up the blood volume, for a deficient blood volume was more serious than decrease in the oxygen-carrying capacity of the blood. Gum saline seemed to fulfil all the requisites; and though it would seem natural that if the tissues had suffered from want of oxygen for any length of time recovery would be more probable from blood than from gum, yet several medical officers had shown that in the later stages no case that failed to respond to gum was found to respond to blood. Gum saline was thought to be more appropriate to cases of shock without haemorrhage because what was wanted was more fluid, the haemoglobin being already in the body. Sometimes a first injection had comparatively little effect, while a second was followed by rapid improvement. Cases of prolonged and serious shock failed to respond to both gum saline and blood, for there had been induced a paralysis of vital nerve centres, especially of the vasomotor centres, and an increase in the permeability of the blood vessels to colloids. There was very little positive evidence that blood transfusion was superior to gum transfusion.

Dr. H. H. Dale, in his opening remarks, held that secondary wound shock was essentially an oligæmia. It had been shown by the use of the "vital red" method that the volume of blood in effective circulation was seriously reduced. It did not accumulate in the great veins of the abdomen, nor was there marked arterial dilatation. The loss of plasma did not account for the whole of the deficiency, and by a process of exclusion they concluded that the missing blood was stagnating at the periphery instead of returning normally to the heart. This was due to a loss of tone of the capillary walls. All the features characteristic of shock could be produced by chemical agencies.

He had found that the injection of a few milligrams of histamine into anaesthetized animals had this effect. This substance typified the action of a large class of cleavage products of protein—products of partial digestion, of autolysis, and of bacterial action. The absorption of products from injured tissues, especially muscle, apart from bacterial action, as causative factors of shock, had been emphasized by medical officers in France. They arrived at the conception of an aseptic traumatic toxæmia as playing a large part in the genesis of secondary wound shock. It had been found experimentally that the un-anaesthetized animal could withstand much greater quantities of histamine than one under the influence of ether, though approximately the same as one anaesthetized with gas and oxygen. Anaesthetists on active service had identical experiences in shock cases. He concluded that the traumatic toxæmia could be coped with when the resisting powers of the healthy individual were unimpaired, but these might be depressed by cold, lack of fluids, haemorrhage, anaesthetics such as ether and chloroform, and probably pain and exhaustion; and in treatment one ought to remove the toxic focus as soon as possible, and to eliminate these accessory factors.

Following the introductory papers there was a keen discussion. Sir Anthony Bowlby spoke of the advances in the treatment of surgical shock during the war. From the very first they found that rest, warmth, drinks, and saline infusions were of value, and often the first two alone were sufficient. The second year witnessed a considerable diminution of fatalities from shock in fracture cases by the early application of splints in the forward areas. In the beginning of the third year they used sodium bicarbonate solution in addition to saline, with the consequence that they prevented sickness and allowed the patient earlier to partake of food. In 1917, thanks to the advocacy of our American colleagues, blood transfusions were instituted, and following that gum solutions were introduced. The latter were certainly more accessible at all times, but every one wished to know if it was as good as blood. Surgeons agreed with the physiologists that in shock there was a diminution of blood volume, and agreed that fluids should be given, but was there not too great a tendency to give fluids by every other channel than the natural one? There were great advances in the administration of anaesthetics and their use in combating shock, and he attached considerable importance to this part of the question. Dr. Geoffrey Marshall said that before the war the effect of anaesthetics in the production of shock was recognized. For example, under the general anaesthetics commonly used, when resection of gut was performed on children with intussusception, very few cases recovered, but when spinal anaesthesia was introduced the number of recoveries was much increased. Working at first at the base, he found that in operations on the thigh where there had been previous loss of blood the mortality was very high when chloroform was used. Ether was rather better than spinal anaesthesia, but the results of all three were poor in comparison with those obtained when they adopted gas and oxygen—a method of which he had a large experience in forward areas. Taking amputations of the thigh as a typical example, they found that shock was practically abolished, the blood pressure did not fall appreciably during the operation, and the number of deaths from shock was extremely small. It had a further advantage, in that it enabled patients to have a good meal soon after operation. In many abdominal operations the particular anaesthetic employed was not of such importance, but in very grave cases the use of gas and oxygen gave the chance of successfully operating, and even almost pulseless cases were saved. In civil life, owing to the want of muscular relaxation, this

method of anaesthesia failed in abdominal surgery. Captain Eric Taylor pleaded for intimate co-operation between surgeon and anaesthetist. The latter, by close attention to the blood pressure, could indicate to the surgeon the onset of shock. He did not agree that there was no fall of pressure with gas and oxygen, for the loss of blood would occasion it, but he did agree that there was no secondary or delayed collapse from its use. Further, the patient was enabled to take fluids soon afterwards—a point of great importance. With gas and oxygen also they preserved an intact vasomotor system.

Colonel H. M. W. Gray remarked that the use of morphine had been condemned on theoretical and clinical grounds, but he thought the effects depended on the way it was used. If the patient were moved immediately after having morphine the good effect was largely annulled; he ought to be left lying until the effect was produced. The dose was also important; at least a quarter or even half a grain should be given. The loss of quite a small quantity of blood was sufficient to produce shock. In treatment he considered that blood transfusion was preferable to gum transfusions, for he could not think that any fluid without corpuscles would be of great use in rapidly overcoming the condition, and he was sure that if he had to be transfused himself he would prefer blood transfusion. He strongly advocated the adoption in civil life, in mines, factories, and works, of the arrangements they had found useful in the wound casualties of war—the provision of splints, ambulances, and special resuscitation centres. Mr. J. D. Malcolm, at the request of the Chairman, stated his views as to the pathology of shock. He thought that the chief agent in shock was an expulsion of blood from the vessels as a result of contraction starting in the smaller and spreading to the larger vessels, the contraction being proportionate to the degree of irritation of the tissues. He was strongly opposed to the idea of a collection of blood in the capillaries in shock. It seemed to him that the good results produced by the introduction of fluid, on which all were agreed, pointed to the fact that fluids had been removed from the circulation. Dr. E. M. Cowell, who made a large number of blood pressure records in recently wounded men, found that two varieties of shock could be distinguished: first, "primary shock," coming on immediately in the severest wounds, often fatal; and, second, "secondary wound shock," occurring in cases where the man's life was not in immediate danger but where definite anatomical damage was present. In this case the pressure fell after some hours in the presence of the factors of cold, pain, haemorrhage, or toxæmia. He instanced the example of a case where a soldier had one leg blown off and a foot shattered and yet showed no fall in blood pressure until the onset of gas gangrene several hours afterwards. The knowledge gained ought to be applied in civil practice, and the ill effects of cold could not be too strongly emphasized. Nurses should be impressed with the value of the heated operating table and how simply an improvised heating appliance can be arranged. He had employed gum saline infusion on a large scale at the operations on Vimy Ridge in 1917, and was firmly convinced of its great utility. Except in the very worst cases they obtained a rise in pressure sufficient to enable the surgeon to remove the damaged tissues and to effect anatomical repair. He thought that where haemorrhage was not excessive, gum saline met all the requirements. He suggested its use in civil practice in a condition closely allied to wound shock, namely, in the white asphyxia of the newly born.

Major A. L. Lockwood was convinced of two important factors in the production of shock—fat embolism and lung collapse. A certain percentage of cases in France died from fat embolism. He learnt to be able to isolate in

the resuscitation ward such a group of shock cases, and no remedial measures could save them. In several instances where there was either no wound or only a trivial lesion he had found clinically or at autopsy complete collapse of both lungs. This class in many cases showed remarkable improvement following the administration of oxygen. He had used gum saline infusion as a routine in shock cases as well as oxygen, and he emphasized the value of morphine given early to the wounded. Dr. J. W. McNee said that when the casualty clearing stations were near the line the shock element was not great, but when they were situated at a considerable distance from active fighting many cases arrived in an advanced stage of secondary shock. The time factor and the distance from the line were two important factors in the consideration of the production of shock. They had an opportunity of comparing the results of treatment in some 150 cases of shock. The broad results were: that a great number of men required only warmth and rest; that in the case of those who reacted at all to transfusions there was no real difference between blood transfusion and gum saline transfusion; that those reacting best and most quickly to transfusion suffered more from haemorrhage than shock, and that in a number of cases (60 to 70 out of 150) neither blood nor gum had the slightest effect. In these last they proved by autopsy that death did not result from bacterial infection, and that the wounds taken collectively showed much muscle damage. The muscle injury was very important in the production of shock. In reply to the Chairman, he said that in none of the fatal cases did he see lung collapse, and in the few where fat emboli were found histologically the condition was quite insufficient to cause death. Mr. Hamilton Drummond spoke of his experiences of gum transfusion during several months at an advanced surgical centre. He attached great importance to blood pressure observations. They had transfused as a routine all cases below 90 systolic. The gum was introduced slowly into the vein, taking twenty minutes for each pint given, and in many cases it was given also after operation. He had seen no ill effects from its use. In haemorrhage cases the rise in blood pressure was best effected by blood. In severe shock, with damage to the limbs or hollow viscera, and in cases of toxæmia, neither blood nor gum seemed to do good.

Major J. E. H. Roberts said that in 1915, when working at the base, he was struck with the high mortality of amputation cases where there was gas gangrene and where ether or chloroform was used as an anaesthetic. When gas was administered many cases recovered from the operation. He was then inclined to think they were suffering more from muscle toxæmia than septicaemia. Afterwards, at casualty clearing stations, he was confirmed in his suspicions regarding the effects of muscle injury by observing the surprising effects which followed amputation. He considered that gum solution was preferable to saline in the treatment of shock, but on the whole he was disappointed in its use and thought it inferior to blood. Colonel Laphorn Smith advised attention to several points in all surgical operations. Before starting an operation they had to see that the blood vessels were well filled with fluid; they ought to have rehearsals by surgical teams in order to cut down time wasted. At operation as little blood as possible should be lost; the amount of anaesthetic should be cut down to a minimum; warmth should be applied to the patient by some apparatus for heating the table; the Trendelenburg position should be adopted in order to force the blood to the heart; and rectal administrations of saline should be given. Mr. Cuthbert Wallace briefly referred to the respective claims of gum and blood transfusions. It seemed to him that the proper substance to

replace blood was blood, but one could not always have the ideal. In certain cases the administration of gum was quite sufficient to tide the patient over the critical period until the regenerative mechanism of the bone marrow made good the defect. Sir Anthony Bowlby, in summing up, said that in the prevention or treatment of shock all were agreed on four points—first, morphine given early to a wounded man was very beneficial; secondly, all cases should have a liberal allowance of fluids by mouth; thirdly, that gas and oxygen provided a safe means of anaesthesia in shock; and fourthly, that if gum or blood, or, indeed, any other fluid, was to be given it must be given early.

RECONSTRUCTIVE SURGERY.

The discussion on reconstructive surgery took place in the Section of Surgery on Friday morning, under the chairmanship of Sir Robert Jones, C.B. The accommodation of the room set apart for this meeting was taxed to its utmost capacity, and many members failed to secure admission.

Major R. C. Elmslie, in opening the subject, said that the aim of the orthopaedic surgeon was to restore the functional utility of the damaged part as far as possible. The first necessity was to determine exactly what anatomical and pathological lesions were interfering with the return of function, and then to decide if surgical treatment would improve the functional utility. The surgical measures adopted included the excision of scars, repair of nerves, muscles, and tendons, the restoration of continuity in bones in good alignment, and the treatment of joints to secure stability and mobility. Where functions were definitely lost they might be replaced by such means as tendon grafting, tendon fixation, and the fixation of joints. Massage, passive movements, baths, re-educational exercises, and gymnastics had their share in restoring function. The fitting of an appliance, such as an artificial limb, and the education in its use, came within the domain of reconstructive surgery. The principles rested upon a basis of anatomy, pathology, and mechanics. He specially considered a few selected lesions in illustration. The question of the elimination of sepsis, and in particular the treatment of chronic bone sinus, was discussed. He warmly advocated Broca's radical operation for the latter condition. The non-union of fractures with the remedial measures of end-to-end fixation and bone grafting, the treatment of flail joints, and the methods of tendon transplantation, were considered briefly.

Major W. R. Bristow laid stress, in his introductory paper, on the need for co-operation between the surgeon and the physiotherapist. In the treatment of orthopaedic conditions it was often necessary to spend many months, during which perhaps several operations were performed; in the intervals between these methods of physical treatment were adopted. The surgeon was the master mind directing all treatment towards the attainment of a definite end, the restoration of function. He counselled team work in an orthopaedic unit. There ought to be frequent consultations between the officers in charge of the special departments, and such officers ought to have good clinical experience and general training to prevent the tendency towards undue specialism. He laid emphasis on the extreme need of accurate diagnosis, especially with regard to functional lesions. He dealt more in detail with the methods of re-education, and pointed out the need for recognizing the limitations of all treatment.

Captain W. C. Morton opened the discussion by asking for greater attention in orthopaedic surgery to what was too commonly diagnosed and passed over as "hysteria." The influence of suggestion, instead of being something to be scouted, was one of the most valuable forces in life. Apart

from its normal workings, it was found that pathologically it might prolong an organic disease for the rest of the patient's existence, or, the organic lesion having been removed, it prolonged the functional disability for years. In many cases there was, through disuse, a paralysis of the muscular sense. To get the best results in reconstructive surgery a patient and understanding system of re-education was necessary. Colonel H. M. W. Gray, in view of our war experiences, considered that the term "reconstructive surgery" had a very wide application. Its problems had to do with far more than the late phases of wounds. As deformities, and to a lesser extent disabilities, were usually preventable, the aspect of preventive treatment ought to be considered. In civil practice virtually the same problems had to be faced as in war. Circumstances now demanded a revision of our methods of teaching, a broader outlook on surgery, a wider application of the principles established by workers in other subjects, and a greater collaboration between schools and the individual teachers in these schools. The experiences of workers in the expeditionary forces suggested lessons that might be applied at home. What had been learned in the forward areas of warfare could be applied in civil life—how to organize in mines, shipyards, and factories the treatment of fractures, the provision of transport, and the training of employees for such work. From the casualty clearing stations and base hospitals we could learn the advantages to be derived from a redistribution of our chief hospitals and their removal to the outskirts of towns, and with the provision of whole-time teachers and of students' hostels the scheme would be practical politics. Further, the intercollaboration and friendly rivalries of the workers, which had so greatly raised the standard of endeavour on active service, could be extended at home. They must listen to the voice of the younger generation. The newer schemes aimed at a prevention of disabilities. He paid a graceful tribute to the work of Sir Robert Jones.

Major Hey Groves took up certain points in restitutional surgery. He detailed the technique he employed in the reconstruction of the anterior crucial ligaments of the knee-joint by the use of the ilio-tibial band, and in the repair of the posterior crucial ligament by the semitendinosus tendon. Diagrams were shown to illustrate the methods employed. Amongst twelve cases so operated upon no bad results followed; four derived no benefit and the remaining eight were sufficiently improved to be able to follow their employment without the use of any splint or appliance. In cases where there was a gap in the radius producing great deformity, he was accustomed to excise all the scar tissue lying between the bone ends, and if this proved sterile on culture, the remedial operation was performed two months later. This consisted in removing the ragged ends of the bone fragments, a specially prepared bone graft being taken from the crest of the tibia with its periosteum and fascial covering, and the ends driven into the medullary canal on both sides. In fractures of the upper end of the shaft of the femur in which non-union or mal-union resulted he employed a somewhat similar method, first driving the peg graft from below through the great trochanter, and then, having got the fragments in correct position, hammering the projecting peg downwards until it engaged in the medullary canal of the lower fragment. An ivory peg answered the purpose as well as a tibial graft. Major Edred Corner said that reconstruction and restoration should not be confused. A patient might have a part thoroughly reconstructed and yet might not be able to make use of it. The aim of returning the patient to work should be the important factor in deciding the treatment. He directed special attention to one point in the matter of amputations: often a dead

space was left under the bone which was generally filled up with non-irritant material but which might become infected and might remain infected for years after healing had taken place. It was a frequent cause of disability, in that the fitting of an artificial limb stirred up the trouble and the patients often complained of pain and discomfort. The only sure way of getting over this was by efficient drainage. Another point to be considered was the question of the nerve endings. If the young regenerating nerves came in contact with the scar tissue, pain was apt to result, and if they were caught in a focus of repair they might give rise to certain sensations. It was not so important in amputations to cut the nerve short as to cut the vessel short, for the infective process spreads along the course of the vascular lymphatics. Captain D. M. Aitken said that in the case of bone, as in soft parts, the solution of continuity was repaired by the deposition of fibrous tissue with new-formed capillaries. The surgeon recognized the importance, in the case of soft parts, of secondary suture, as soon as the wounds were clean, in order to get union with a minimum of cicatricial tissue. In tendon suture they found that the fibrous tissue was formed along the lines of stress. In nerve suture the fibrous tissue uniting the ends is longitudinally arranged on account of the stress, and the regenerating axis cylinders had a chance of slipping through parallel to these fibres. In fractures, taking the femur as an example, there might be non-union of the fragments, though they were in apposition, if the patient was allowed to swing his leg on crutches, but if he was put in a walking calliper splint, the stresses of the thigh muscles and of the body weight pushed the bone ends together, and the bone cells would obey the laws governing them and unite the bones. In orthopaedic surgery repair was directed or controlled by stress. Major Francisco, United States Medical Corps, desired on behalf of his colleagues to pay tribute to the teachings and help of British orthopaedic surgeons. In France they had more to do with the prevention than the treatment of disabilities. They had paid considerable attention to the splinting of fractures, and certain medical officers were detailed to supervise splinting alone in the advanced areas. In the hospitals, similarly, men were told off specially to look after splinting. They evacuated first those cases which would be soonest ready for reconstructural surgery.

Sir Harold Stiles, speaking from the point of view of general surgery, said that all surgery was more or less reconstruction. The difference between the methods and problems of reconstruction in orthopaedic and general surgery consisted mainly in the fact that the former dealt largely with voluntary muscle and the latter with involuntary muscle. He hoped that orthopaedic surgery would bulk largely in the teaching of general surgery in medical schools, and he was glad that a start had already been made. Great progress had been made during the war in reconstructive surgery, and it had been accomplished, he wished to emphasize, by team work and chiefly by young men. He spoke of the principles that guided him in the treatment of flail joints and of the methods of controlling bone growth according to whether an ankylosis or a movable joint was required. Dealing with nerve suture, he contended that end-to-end union was always possible if a sufficiently free incision were made; a nerve would stand more tension than any other structure, and, even if the ends could not be got together, if the bulbs were stitched together continuity could be restored. He also gave practical details in the technique of tendon transplantation in disabilities of the hand. Major Alwyn Smith thought that the results of bone grafting in the case of the humerus were more disappointing than in other situations. He had given up

grafting in the humerus. He laid stress on providing a longer support for grafts than was usually done, because he considered that osteogenesis was a very slow process. Major Naughton Dunn thought that no patient should be discharged on crutches if it was at all possible to obviate their use. He dealt with the treatment of flail joints, and the question of the position to be adopted in the cases of short humerus.

Lieut.-Colonel Spencer Mort advocated a more thorough treatment of bone cavities after sequestrotomy. He not only curetted the cavity, but rounded off all corners, and obliterated crevices till all was perfectly smooth. To prevent sepsis and to control oozing he rubbed in iodoform crystals. In chronic cases with dense eburnated bone he punched out small holes at intervals to enable the flat drill point to catch without slipping. Failure of bone grafting was largely due to sepsis, and he advocated waiting for at least three months after the bones had healed before attempting interference, and using at the operation the most scrupulous aseptic care. There were special difficulties to be reckoned with in war injuries, the nidus for the graft was often markedly bloodless and the fibrous tissue cicatrix of the soft parts was dense, and the patient was generally past the period of active bone growth. They had therefore to use some method which would allow of the most favourable growth of the transplanted bone. He himself used multiple small grafts; a portion of rib slightly longer than the distance between the fragments was taken from the patient, stripped of its periosteum, and divided longitudinally into eight separate portions with bone shears. Under a rigid scaffolding, such as a steel bone plate, these bone faggots were sprung into position and tied round with catgut. The multiplication of bone grafts gave a very much increased nutritional surface. The method had invariably succeeded. Captain Platt was accustomed to excise a clean slice from the bone ends and have them submitted to bacteriological examination before attempting grafting. He considered that in grafting the osteogenetic activity resided in the bone matrix and not in the graft itself, and that the slowness of repair was due to a loss of the osteogenetic power of the bone. Dr. G. Murray Levick spoke of the importance of not starting re-education before conductivity in the nerve was well established in cases recovering from peripheral nerve injury, because this was apt to lead to "trick movements" by opposing muscles, and by accustoming the patient to failure, to bring about that functional paresis which all were anxious to prevent. He laid stress also on the importance of open-air life for the patient.

DEMONSTRATIONS.

DEMONSTRATION ON FRACTURED FEMURS.

On the afternoon of Thursday, April 10th, Major Maurice G. Pearson, O.B.E., S.A.M.C., gave a lantern lecture on the treatment of fractured femurs, at the Imperial College of Science. After preliminary remarks in explanation of the objects aimed at, lantern slides were shown demonstrating the method of treatment recommended. It is one of the methods evolved as a direct result of war needs in France, and afterwards further developed in England when special femur hospitals were started here. It has been the routine treatment for all cases of gunshot fracture of the femur, simple and compound, at the South African Hospital in France, and at Edmonton Military Hospital, where it can be seen in use. The essential points of the method are traction by means of a special non-penetrating form of ice-tong calliper applied on to, but not into, the lower part of the shaft of the femur, thereby rendering possible early movement of the knee and leg below it without interfering with the femur; at the same time the whole limb is

left bare from hip to toe, and available for massage and electrical stimulation of muscles. Major Pearson also demonstrated the special hospital bed designed by him for fractures and back injuries, enabling any part of the patient to be reached for dressing purposes without lifting (see *BRITISH MEDICAL JOURNAL*, August 24th, 1918, p. 186). Photographs were shown demonstrating the excellent muscular condition of the injured limb and flexibility of joints throughout treatment by the method recommended. A cinematograph film was shown of recovered patients walking and going through exercises six months after being wounded. In conclusion Major Pearson entered a strong plea for continuity of treatment as being no less essential than good treatment, and an appeal for an improved standard of fracture treatment after the war. The teaching of fracture work, he said, had hitherto been perfunctory in the extreme, both in lectures and in books, and the disastrous results were reflected in the report of the Fracture Committee. In the future both treatment and teaching must be taken more seriously and special wards must be set aside for the purpose, working throughout in co-operation with the physio-therapeutic department.

THROAT INFECTIONS: NAKED-EYE DIAGNOSIS.

On Thursday, April 10th, Dr. H. Drinkwater gave a lantern demonstration of certain infectious and inflammatory conditions of the throat, his aim being to assist in their diagnosis by naked-eye examination alone, and to show that in most cases this could be depended upon without recourse to the microscope and a bacteriological test. He first pointed out the main naked-eye characteristics of diphtheria, and afterwards showed how other inflammatory and infectious conditions differed from it. With regard to the texture of the patch, it could not be too strongly insisted that the diphtheritic patch formed a *raised deposit* on the mucous membrane. When on the inner aspect of the tonsil, it projected beyond the surface of the surrounding tissues. It was not an excavation or ulcer, like that often observed in scarlet fever and influenza. With regard to the distribution of the patch, each lateral half of the fauces might be divided into three areas—tonsillar, uvula (half), and soft palate (half), including the anterior pillar. An extremely important point in diagnosis was that the diphtheria patch in any one of these areas was single. On one tonsil there was only one patch, and this patch, if it increased in size, did so centrifugally; its margin continued to extend, so that it might unite with a patch on the palate or uvula, but it sent out no separate colonies or islets. This feature of diphtheria often by itself sufficed for diagnosis. It was only in the late stage of diphtheria that several disappearing patches might be seen in any single area. What had been said of the tonsillar area was equally true of the uvular and the palatal areas, in each of which the diphtheritic patch was single. Of the three lateral areas, the tonsillar was most often involved, it rarely escaped if one of the other areas was attacked. The uvular area probably came second in order of frequency. The colour of the patch, when seen in an early stage, was most frequently bluish-white, sometimes almost pure white, and occasionally yellowish. Later it might be pale brown, or covered with grey spots or blackish. The margin of patch was always very sharply defined, and equally so around the whole circumference. Vincent's angina closely resembled diphtheria, and sometimes could not be distinguished from it except by a bacteriological examination. As regards texture of the patch, distribution, and colour, the two diseases were identical. In a fair number of cases of Vincent's angina there might be observed two distinguishing peculiarities. The patch tended to become much thinner below than above, and a narrow and deep fissure or depression might be seen in the centre of the patch, especially over the tonsil. At a later stage erosion of the uvula was characteristic, but the diagnosis

should be made before that stage was reached. Diphtheria and Vincent's angina might occur together in the same patient. If in influenza the throat was affected so as to raise a suspicion of diphtheria or Vincent's angina, the sores would be found confined to the tonsillar area, generally of a bright yellow colour, often multiple, and either depressed, or, if raised, easily wiped away with a probe. The throat was generally more painful, and the temperature higher. In scarlet fever the sore was an ulcer and there was intense congestion with a punctate rash. Follicular tonsillitis gave great swelling of the tonsils, and the discharge could be seen oozing out of several of the tonsillar crypts.

ROYAL COLLEGE OF PHYSICIANS.

On the afternoon of Thursday, April 10th, the President and officers of the Royal College of Physicians of London received a considerable number of members of the Association and visitors at the College. The President (Dr. Norman Moore) conducted the guests round, showing them the portraits of physicians and briefly describing in his inimitable manner some of the treasures of the library. Perhaps the newest among the many interesting objects displayed in the reading room was the framed congratulatory address presented to the College by the Fellows serving in France, who dined together at Boulogne on September 23rd, 1918, in celebration of the quatercentenary of the granting of its charter to the College by King Henry VIII. After tea a most instructive and entertaining occasion was brought to a close by the delivery, by Sir Humphry Rolleston, of the third of his Lumsley lectures on cerebro-spinal fever.

FACIAL SURGERY.

A demonstration of cases of plastic surgery of the face was given at the Imperial College on Thursday, April 10th, by the staff of Queen's Hospital, Sidcup. The cases shown were patients who had had mutilating wounds of the face, especially loss of the nose or the greater part of the jaw, and the contrast between the results obtained by ingenious grafting of bone, cartilage, and soft parts, and the previous condition seen in the photographs or casts was particularly striking. The officers present in charge of the cases gave particulars of the methods they had adopted. Some of the cases were in process of restoration, and what might still be attained in them was seen in others who had passed through the surgeon's hands.

MAUDSLEY HOSPITAL.

On the afternoon of Friday, April 11th, an instructive clinical and pathological meeting was held at the Maudsley Neurological Clearing Hospital; some sixty members and visitors were present and the demonstrations were greatly appreciated. Lieut.-Colonel F. W. Mott, F.R.S., gave a demonstration of clinical cases, and this was followed by a demonstration by Dr. F. L. Golla on the psycho-galvanic reflex in cases of functional war neuroses. Dr. Golla also showed the rotating chair. Dr. L. E. Stamm exhibited an apparatus for testing the mental reaction, used by him for investigating the response of candidates for the Royal Air Force (*BRITISH MEDICAL JOURNAL*, February 1st, 1919, p. 129). This he had utilized also for the Scientific Committee of the Board of Liquor Control for testing the effects of alcohol in varying doses on the mental reaction time.

At a meeting of the Central Midwives Board on April 15th Sir Francis Champneys was unanimously re-elected chairman. A letter was received stating that in the opinion of the Privy Council the question of any modification of the constitution of the Board should be left to be dealt with by the new Ministry of Health, and that no action in the matter should be taken at present. The Board met on the following day for the hearing of penal charges. Out of ten fresh cases, six women were removed from the roll, and another one on an interim report. Two midwives charged with negligence in cases of ophthalmia were acquitted, and awarded costs not exceeding £5, on the application of their solicitor.

Correspondence.

THE CARLISLE EXPERIMENT IN LIQUOR CONTROL.

SIR.—On Saturday, April 19th, I read with very great interest Dr. Henry Barnes's article in the *JOURNAL* on the Carlisle experiment in local control. This article makes it abundantly clear that the experiment has been very successful. He states "that although no statistics can be produced, there has undoubtedly been a resulting improvement in the economic efficiency of the people, and a reduction in misery, crime, and degradation of every sort, which can easily be imagined."

I think most medical men would admit that the restrictions in the hours of the sale of liquor which have been imposed on the nation during the war have been extremely beneficial, and have led to no great hardships. The majority of us would be very sorry to see a return to the old order, the long hours, and the innumerable temptations to drink which beset the path of the working man and woman in every part of the country.

On Sunday, April 20th, I read a very important article in the *Observer*, entitled "Critical Hours for Social Progress," in which the writer states that during the past week the "trade" had held a national convention representative of the retail liquor traffic, and that at the meeting the "trade" had expressed the intention, if possible, to free the sale of drink from all the restrictions which the sole interests of national temperance and efficiency in war time had imposed upon it. It is devoutly to be hoped that there is a large body of medical men who, without wishing to prohibit the sale of alcohol, are in favour of restrictions which have proved beneficial, and who will be ready to use their influence—and their influence may be very great—to prevent the existing restrictions being swept away.—I am, etc.,

Oxford, April 21st.

WM. COLLIER.

"HALF A CENTURY OF SMALL-POX AND VACCINATION."

SIR.—In his reply to my Milroy lectures Dr. Killick Millard (p. 484) refers to the Registrar-General's statistics of diminishing small-pox mortality between 1847 and 1880, contemporaneously with increasing infantile vaccination, and he relates how even he had quoted and relied on these statistics in a pro-vaccination lecture. His reliance was more than justified. During the period in question up to the pandemic of 1870-73 natural small-pox was becoming a more fatal disease, and was, indeed, reaching its maximum of epidemic virulence. Yet under these circumstances increase in the practice of vaccination caused a notable decline of small-pox mortality rates per million living, and the remarkable position resulted that whilst the fatality of natural small-pox was rising, mortality was falling. In more recent years small-pox has become so attenuated in type that fatality as well as mortality has marvelously decreased, and the fact that this decrease has taken place notwithstanding lessened resort to vaccination brings into all the greater prominence the change in the character of the disease. It is not to be doubted that had small-pox maintained its old infectivity and severity, vaccination would have continued to be practised on a much larger scale than at present.

I think Dr. Millard's other points are dealt with sufficiently in the lectures, and I shall not occupy space with a condensed recapitulation here, but will reprint the whole reply as an appendix to the lectures in book form, so that whoever may be interested can make comparison. But the crucial fact is the great change in small-pox in respect both of fatality and infectivity.—I am, etc.,

Edinburgh, April 21st.

JOHN C. McVAIL.

GUNSHOT WOUNDS OF THE CHEST.

SIR.—I fear that I must have been very incoherent in the remarks I made at the discussion on chest wounds at the Clinical Meeting, in that I am reported to have "doubted whether the results of surgery were striking."

Having had the opportunity of watching the evolution of chest surgery during the war, I am an enthusiast for operating on the right type of case. What I wished to

convey was that the surgeon had placed on an unassailable basis the necessity for operation in certain classes of wounds—for example, the "open" chest, the large retained foreign body, the comminuted fracture of ribs, the lacerated diaphragm, etc.—but that the question of the advisability of operating on the simple haemothorax, forming a very considerable proportion of all chest wounds, had not yet been answered. Much more information as to the late results of the operated cases, as contrasted with the non-operated, was needed before a definite conclusion could be reached.

That any one could doubt the success of surgery in the classes specified above would, in my opinion, indicate that he was wilfully blind to one of the most valuable lessons of war surgery.—I am, etc.,

Plymouth, April 12th.

A. BERTRAM SOLTAU.

SIR.—At the Special Clinical and Scientific Meeting of the Association I did not intervene in the discussion on chest wounds because I had, on a recent visit to America, given an account of my experience on this branch of surgery, and because a paper by me on the later stages of gunshot wounds of the chest appeared in the January number of *Surgery, Gynecology, and Obstetrics*. I thought I would like to wait until further experience enabled me to speak with fuller knowledge. However, several of my friends, whose opinions I value highly, say that I ought to have contributed to the discussion, even in spite of repetition.

There are certain cases among those suffering from the late effects of gunshot wounds of the chest which every surgeon would consider required operation, such, for instance, as those with sinuses or localized empyemata. There are also very many cases that have been dubbed "chest wounds," or "foreign bodies in the chest," in which a not very elaborate investigation shows the injury to have been limited to the parietes; but these cases are always looked upon as "chest wounds," and are rather like the D.A.H. patients, referred to by many observers, who, if once they get the idea that they are suffering from cardiac mischief, cannot disabuse their minds of the potential seriousness of their condition. When these patients harbour foreign bodies they can easily be relieved by surgical means, and it is always well worth while to do so, as the mental relief is so great an advantage to them.

The cases of retained foreign bodies in the lung itself are in quite a different category. The experience of very many cases has given rise to a general impression that such foreign bodies become safely encapsuled and are harmless, and I have had ample opportunities of seeing such patients and making notes of their condition. But we have not yet enough evidence to say in what proportion of cases this happy state obtains, and we need all the information we can acquire as to the natural history and ultimate fate of foreign bodies in the lung.

There is, however, a residue of cases in which the foreign body is the cause of troublesome symptoms. Perhaps I have seen an unusual number, having been especially interested in this subject since the early days of the war, and in that way having perhaps attracted an undue proportion of the variety to which I am now referring. In this class there are cases in which a foreign body is the cause of a distressing chronic cough, or of recurring haemoptysis, and in rarer cases the focus for an infection which keeps up a purulent discharge into the bronchi continuously. These conditions can only be cured by removal of the foreign body, and experience has now proved that this can be done with a great degree of safety.

There is still a third group in which the foreign body is merely a source of mental anxiety to the patient, but so great an anxiety as to perpetuate a state of neurasthenia, which is very detrimental to his welfare. It was this class of case which first led me to assay operative interference, and my first patient, from whom I removed a rifle bullet from the middle of the lung in July, 1915, is now a happy and contented workman, able to do almost as good a day's work as before the casualty. As a result of my experience in these cases I was led to consider the part which adhesions might play in the cases of persistent pain and especially shortness of breath. This is an aspect of the matter with which Major-General Sir Berkeley Moynihan has frequently dealt. Encouraged by the great relief of all these symptoms which a thoracotomy for the

removal of the foreign body often brought about, I was led to make a surgical attack on several of the cases in which there was no foreign body, but who suffered from collapsed chest or contracted chest, and even on patients without marked physical signs, but with aggravated shortness of breath, and in whom examination with the fluorescent screen showed a too limited movement of the lung and diaphragm.

In this group I have dealt with unabsorbed haemothorax; cases in which layers of organized blood clot embarrassed the lung; and others in which there were only multiple separate adhesions or a general fixation of the whole of a considerable area of the lung. All these cases have been improved as a result of the interference, and I am persuaded that much can be done for their relief.

At a meeting of the Northern Command Medical Society, held in February of this year at Newcastle, I was able to show examples of all the varieties of the later stages of gunshot wounds of the chest. The patients had been operated upon from a few months to as long as three years and with the most encouraging results. All were greatly relieved of their disability, and in some cases their earning capacity had been fully restored.—I am, etc.,

Newcastle-upon-Tyne, April 17th.

G. GREY TURNER.

A WAR COMRADES' CLUB.

SIR,—Captain K. M. Walker's letter in your issue of February 22nd raises two important points which were often discussed in R.A.M.C. circles abroad. The first is the representation of medical men who have served overseas, on the various committees formed to safeguard the interests of the profession. The second is the desirability of forming an association of medical men who have served overseas. It seems to me that were such an association formed, its members would be able to make their voices heard in the arena of medical politics with no uncertain sound.

Those who have worked together for, and with, the army may have mixed feelings on looking back on their various experiences—some may feel that their services might have been of more use in another capacity than that in which they were compelled to serve, others may feel that they had not enough to do, while with others the most outstanding memory may be that of interesting but laborious days and nights spent in following their professional calling.

Pre-eminent above everything else, however, is the memory of the professional brotherhood which existed in the B.E.F. and which is so sadly lacking in the ranks of those who stayed at home. Is this comradeship to be preserved as Captain Walker asks, or are we going to forget the valuable lesson of team work and the professional harmony, free from professional jealousy, which reigned on the battle fronts? Whatever may be in store for the medical profession, and whatever may be the opinions of the individual members of the B.E.F. on the different policies advocated for safeguarding their interests, I am certain that on the question of the formation of an association for ex-temporary members of the R.A.M.C. there can only be one answer. That is, that the association be immediately formed. While its fundamental basis would be to continue the friendships formed on active service, questions relating to the profession would naturally come under review; and these could be discussed and resolutions could be arrived at in that atmosphere of friendship and mutual help which is the inheritance of the mutual bond of self-sacrifice.

Might I suggest that, with Sir Anthony Bowlby as president and with Captain Walker as secretary, there would soon be gathered together the whole of the members of the R.A.M.C., recruited from civilian life, who served in the B.E.F.? Will these two distinguished members of the profession call a meeting at an early date to start the ball a-rolling?—I am, etc.,

LATE SURGICAL SPECIALIST B.E.F.

SCOPOLAMINE-MORPHINE IN CHILDBIRTH.

SIR,—In the *Times* of April 4th I note that a resolution was passed and forwarded to Mr. Lloyd George urging the Government to place the benefits of "twilight sleep" within the reach of all mothers. As the advisory council

includes well known names, it appears to me that the subject is not one which can be treated lightly by the medical profession. In my book "*Twilight Sleep*" in the *East*, published in 1918, I advocated a somewhat similar procedure on the part of the Government, and gave my own experience of the treatment in India, where I have been acting as specialist in midwifery and diseases of women for the last four years. The point which impressed itself upon me in cases so treated was not so much the fact that the patient remembered little or nothing of the confinement, as that her condition the day following was infinitely better than was that of the cases which were allowed to suffer the pains of childbirth unrelieved. Modern physiology has taught us that pain has a definite action on the nervous system and suprarenal activity, but, in addition to pain, we must consider the emotional disturbances and the after-effects of fear, anxiety, and apprehension of danger, not only in primiparae but also in multiparae who have had previous abnormal confinements. In my opinion scopolamine-morphine semi-narcosis obviates this, and reduces obstetric shock to a minimum. Late first pregnancies are especially dangerous to the mental stability of the patient, and it must never be forgotten that the anticipation of pain is often of greater moment than its realization.

But the opponents of "twilight sleep" put forward arguments which must be listened to and respected. They complain that it is quite impossible for a busy practitioner to devote sufficient time to each case to guarantee success. To overcome this difficulty I worked out doses which I found to be both safe and effective if given by a trained nurse between the visits of the medical man in charge of the case, who, on his arrival, can decide for himself whether the condition is satisfactory, and can act accordingly. Others object that the "memory test" is not reliable, but if it be considered in conjunction with other symptoms—as, for example, incoherence, flushed face, pulse rate, inco-ordination, and the state of the pupils—there should be no difficulty in gauging the doses which should be given. I acknowledge that it requires experience to read these symptoms correctly, but the same may be said to apply to the skilful administration of any anaesthetic. Gauss considered that it required two years' practice to perfect oneself in the "twilight sleep" technique; and although I do not agree with him in this contention, I do think that it requires both study and practice. The bad effect on the child is, I am sure, grossly exaggerated, and when present is due either to faulty dosage, or to the fact that morphine is given too late in the confinement. Even when apnoea or oligopnoea is present the baby, if placed on its side, will be normal shortly afterwards, but these conditions are only seen in a small proportion of cases when the proper technique is faithfully carried out.

The method has come into disrepute because the medical profession as a whole has condemned it before giving it a fair trial. This attitude has induced unqualified women to write most of the literature on the subject, and resulted in "*Twilight Sleep Homes*" being advertised in the daily press. Although this is to be regretted from an ethical point of view, it should not deter medical men from continuing their investigations in their own practices, for it is only by this means that we can arrive at a more simple technique. The cases of failure are in no small measure due to the fact that medical men who have not thoroughly studied the subject have ignored many of the minor details of the technique without which success is problematical. I consider that where it is feasible and the patient can afford it one medical man should give the injections and another deliver the patient, and I agree with Fehling that it is not every doctor who displays capacity for carrying out the proper technique.—I am, etc.,

London, W., April 13th.

CECIL WEBB-JOHNSON.

THE NAVAL MEDICAL SERVICE.

SIR,—I have inadvertently given a wrong impression by my letter, and I must apologize for so doing to the Medical Director-General of the Navy.

It was my desire to point out that the directions for using the anti-influenza vaccine were not available for the medical officers of ships at the time they were ordered (by an Admiralty order) to lecture to the ship's company and call for volunteers. On obtaining a certain number of

volunteers for the vaccine we were to order the proportionate quantity of vaccine. With the vaccine came the statement referred to by Surgeon Commander W. L. Martin, R.N. My suggestion is that medical officers should have been in the position to advise upon the use of this vaccine before lecturing upon it or advising its use to the ship's company. Not knowing the composition at the time, I was unable to inform my captain whether it was probable or not that inoculated men would have to be placed on the sick list for six hours, and being at short notice it was a matter of importance to us to have the ship's company ready for instant service.

We were not treated in this matter as scientific colleagues and advised by our own branch prior to the issuing of an Admiralty order. This, I hope, makes my point clear.—I am, etc.,

W. KENNETH WILLS,

Clifton, April 14th.

Acting Surgeon Commander R.N.V.R.

The Services.

NAVAL MEDICAL DEMOBILIZATION.

WITH reference to the letter on this subject by "Temporary" in the JOURNAL of April 19th (p. 502), we are requested by the Director-General of the Medical Department of the Navy to state that: (1) So far as the Royal Navy is concerned, the Central Medical War Committee has not been wound up, but is still dealing with demobilization of medical officers, R.N. and R.N.V.R., as hitherto; and (2) the agreements signed by temporary medical officers on entering the Royal Navy will be honoured as a matter of course in all cases.

HONOURS.

ORDER OF THE BRITISH EMPIRE.

Transfers to Military Division.

THE King has directed that the following appointments to, and promotions in, the Order of the British Empire announced in the *London Gazette* of the dates indicated, shall be transferred to the Military Division of the Order:

Knight Commander (K.B.E.).

Colonel Sir James Galloway, C.B., A.M.S. (January 7th, 1918).

Commanders (C.B.E.).

Miss Jane Holland Turnbull, M.B., B.S., Q.M.A.A.C. (June 7th, 1918).
Colonels: William Molesworth, C.I.E., V.H.S., I.M.S. (December 19th, 1918), Robert Dawson Rudolf, Canadian Forces (January 7th, 1918), Alfred William Sheen, A.M.S.(T.F.) (December 19th, 1918).
Lieut.-Colonel John Tweedy Lewtas, R.A.M.C. (January 7th, 1918).

Officers (O.B.E.).

Fleet Surgeons: Frank Bradshaw, R.N. (June 7th, 1918), Alfred Ernest Weightman, R.N. (June 7th, 1918), Samuel Henry Woods, R.N. (June 7th, 1918).

Staff Surgeon Reginald John E. Hanson, R.N.V.R. (June 7th, 1918).
Brevet Colonel G. Sims Woodhead, V.D., A.M.S. (January 7th, 1918).
Lieut.-Colonels: Alexander Bruce, R.A.M.C. (June 7th, 1918), Joseph Dalrymple, R.A.M.C. (June 7th, 1918), Bertram Ramsay Dennis, R.A.M.C. (June 7th, 1918), Charles Edward P. Fowler, R.A.M.C. (March 15th, 1918), John Alexander Gunn, C.A.M.C. (June 7th, 1918), Charles Duncan Myles, R.A.M.C. (June 7th, 1918), Ernest Reinhold Rost, I.M.S. (November 18th, 1918).

Temporary Lieut.-Colonel Donald Macaulay, R.A.M.C. (November 18th, 1918).

Majors: Edward John Buckley, R.A.M.C. (June 7th, 1918); Samuel Richard Christophers, C.I.E., I.M.S. (November 18th, 1918), Thomas Seymour Coates, R.A.M.C. (June 7th, 1918), Charles Sempill De Segundo, R.A.M.C. (January 8th, 1919), William Bickerton Edwards, R.A.M.C. (June 7th, 1918), Edward Gibbon, R.A.M.C. (November 18th, 1918), John Green, R.A.M.C. (June 7th, 1918), George Home, M.D., New Zealand Military Forces (June 7th, 1918), Frederick Percival Mackie, I.M.S. (November 18th, 1918), William Lewis Martin, R.A.M.C. (June 7th, 1918), Thomas Lindsay Sandes, M.B., South African Forces (June 7th, 1918), Charles Edward Southon, I.M.S. (November 18th, 1918), Alexander Lewis Urquhart, R.A.M.C. (June 7th, 1918), Albert Elijah Walter, I.M.S. (December 19th, 1918), John Wilson, R.A.M.C. (June 7th, 1918).

Captains: William Dunlop, R.A.M.C.S.R. (November 18th, 1918), David Hammond Fraser, M.O., R.A.M.C. (November 18th, 1918), Richard Edward Gibson, R.A.M.C. (June 7th, 1918), John Molyneux Hamill, R.A.M.C. (June 7th, 1918), William Percival Mulligan, R.A.M.C. (June 7th, 1918), John Glynn Pigott, R.A.M.C. (June 7th, 1918), John Wallace, R.A.M.C. (June 7th, 1918).

Temporary Captains: David Forbes Borrie, R.A.M.C. (November 18th, 1918), Edward Norman Glover, R.A.M.C. (November 18th, 1918).

Members (M.B.E.).

Lieut.-Colonel Harry Hyndman Balfour, R.A.M.C. (January 7th, 1918), Major Harold Octavius Lethbridge, R.A.M.C. (June 7th, 1918).

Captains: Raymond Bury, Nyasaland Medical Service (November 18th, 1918), Wilberforce Vaughan Eaves, R.A.M.C. (June 7th, 1918), William Herron Elliott, R.A.M.C.S.I. (November 18th, 1918), Geoffrey Belmont Fleming, R.A.M.C.T.F. (November 18th, 1918), Alfred Harwood, R.A.M.C. (June 7th, 1918).

Temporary Captains: Geoffrey Douglas Hale Carpenter, Uganda Medical Service (November 18th, 1918), Donald McIntyre, R.A.M.C. (November 18th, 1918), Lieutenant John Ritchie (June 7th, 1918).

Surgeon Lieutenant Francis Ewart, R.N., has been appointed O.B.E. (Military Division) for valuable services in H.M.S. *Patuca* whilst employed on ocean escort duties.

The Distinguished Service Cross has been conferred upon Surgeon Lieutenant Neville Hardcastle Smith, R.N., in recognition of the bravery and devotion to duty displayed by him in carrying out his professional duties during the battles in the Ussuri district between August 14th and 28th, 1918.

Surgeon Commander Charles James E. Cock, R.N., and Surgeon Lieutenant John Forrest Smith, R.N., have been mentioned in dispatches.

CASUALTIES.

DEATHS OF SONS OF MEDICAL MEN.

Flight Sublieutenant Edward Cuthbert Stocker, R.N., reported "missing" on March 27th, 1918, while flying in the neighbourhood of Dompierre, on the Somme, now official presumed killed on that date, aged 183, was the younger son and only surviving child of Major E. G. Stocker, R.A.M.C.(T.F.), now on service, of Carn Brea, Cornwall. He took the R.A.C. pilot's certificate in 1917, was gazetted to the R.N.A.S., and went to the front in February, 1918. His brother, Second Lieutenant T. F. Stocker, R.E., was killed near Ypres in 1915.

THE office of the Adviser in Pathology to the British Expeditionary Force having been closed owing to demobilization, all correspondence for Colonel S. L. Cummins, A.M.S., should be addressed to him at the Pathological Laboratory, Royal Army Medical College, Grosvenor Road, London, S.W.1.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Examination in Sanitary Science.—The following candidates have satisfied the examiners in both parts of the examination:

K. Biggs, Winnifred J. Crawford, F. P. G. de Smidt, Major N. V. Lotian, M.C., R.A.M.C., J. J. McConnell, Katherine McNeill, F. Mahabir, Captain W. A. Murphy, R.A.M.C., Captain A. T. H. Nisbet, A.A.M.C., T. E. Parker, Winifred H. Sharrard, H. N. Stafford.

UNIVERSITY OF LONDON.

SENATE.

THE resignation by Professor Vaughan Harley, owing to ill health, of the chair of pathological chemistry at University College, has been accepted with regret. A resolution expressing the Senate's appreciation of the valuable work which he had carried out during his twenty-three years' tenure of the office was adopted.

The degree of D.Sc. in biochemistry was conferred on E. C. Gray, an internal student of the Lister Institute of Preventive Medicine for a thesis on the enzymes of *B. coli communis* (*Proceedings*, Royal Society, 1914 and 1917).

Sir Bertrand Dawson has been appointed one of the representatives of the Faculty of Medicine on the Senate, in succession to Professor F. W. Andrewes, F.R.S.

Presentation day will be held in the Albert Hall on May 9th at 3 p.m., when the President of the Board of Education will deliver an address. The service for members of the university will be held at Westminster Abbey on Friday, May 9th, at 6 p.m.

Professor F. A. Bainbridge will give a course of eight lectures on the physiology of muscular exercise, in the Physiological Department, St. Bartholomew's Hospital, on Wednesdays, at 4.30 p.m., beginning on April 30th.

Applications for the university chairs of anatomy, tenable at Guy's Hospital Medical School and at the London (Royal Free Hospital) School of Medicine for Women respectively, with an initial salary of £600 a year each, must be received by the Academic Registrar at the university by May 3rd.

It was resolved as a war measure to hold an additional first examination for medical degrees in September, 1919, provided not less than twenty-five candidates enter therefor.

UNIVERSITY OF BIRMINGHAM.

DR. BERNARD HART, lecturer in psychotherapy for the current year, will deliver a course of ten lectures on psychotherapy in the treatment of the psychoneuroses, in the large theatre of the medical school buildings, Edmund Street, Birmingham. The lectures will be given weekly, on Tuesdays at 4 o'clock, beginning on April 29th. A post-graduate course of lectures (with clinical demonstrations) on venereal disease will be given by Dr. A. Douglas Heath at the anatomical theatre of the medical school buildings, on Mondays, May 5th and 12th, and Thursdays, May 8th and 15th, at 4.30 o'clock. Both courses are free to members of the medical profession and students of the university, whose attendance is invited.

UNIVERSITY OF EDINBURGH.

At a meeting of the Edinburgh University Court on April 14th Dr. Drever Coombe was appointed Lecturer in Psychology for five years from October 1st next. The court accepted with great regret the resignation of Sir Ludovic Grant from his office as secretary to the university.

UNIVERSITY OF GLASGOW.

The degree of M.D. was conferred, on April 22nd, upon William Ernest Boyd.

CONJOINT BOARD IN SCOTLAND.

The following candidates, having passed the final examination, have been admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

P. de V. Mell, D. L. Henderson, J. A. S. Campbell, F. Lockwood, Hassan Amin Midwar, D. D. Fernandes, R. L. Wright, L. L. Steele, J. M. Speirs, S. H. Waddy.

Obituary.

ERNEST NICHOLSON CUNLIFFE, M.D. VICT.,

M.B., B.S. LOND., M.R.C.P. LOND., MAJOR R.A.M.C. (T.F.),
Honorary Physician, Manchester Royal Infirmary.

By the death of Dr. E. N. Cunliffe the Manchester school of medicine has lost a physician of great ability. A member of a Bolton family, he was educated at Monmouth Grammar School. In 1896 he entered the medical school of Manchester University, and after a brilliant studentship, during which he obtained many scholarships and prizes, he graduated in medicine in the universities of London and Manchester. After holding several resident hospital appointments he obtained the M.R.C.P. London in 1906, and was elected to the honorary staff of the Manchester Royal Infirmary at the early age of 28 years. Subsequently he became Lecturer in Clinical Medicine in the University of Manchester. As a teacher he early achieved a considerable reputation, and as an organizer and administrator he possessed unrivalled qualities. At the commencement of the war he was a member of the staff *à la suite* of the 2nd Western General Hospital, and in the following year he was appointed registrar of this hospital with the rank of major. In April, 1917, he became acting officer commanding the hospital with the rank of lieutenant-colonel, a position he held with conspicuous success until the beginning of his last illness in September, 1918. From November, 1917, to May, 1918, he served in France with the 57th General Hospital, where he was extremely popular with all ranks in the unit. During recent years there were indications that his interests were becoming directed towards the forensic aspects of medicine, and for some time he had acted as medical referee under the Workmen's Compensation Act.

His untimely death at the age of 41, after a long and painful illness, has deprived Manchester of an able physician and the medical school of an upright and loyal colleague. In the world of sport he was a good all-round athlete. At "rugger" he was an excellent half-back; as a runner he represented Manchester University both in the mile and quarter-mile races; at lawn tennis his play was much above the average, and at fives he had few superiors, but it was perhaps as a pedestrian that his dogged and untiring quality revealed itself, and therewith one of the essential traits of his character. He died at the Officers' Hospital, Windermere, and he was buried on April 3rd at St. Mary's, Windermere, with military honours; the bearer party was composed of non-commissioned officers of the 2nd Western General Hospital. Many of his old friends and colleagues were present at the ceremony, and a memorial service held in Manchester was very largely attended by friends, colleagues, and members of the 2nd Western General Hospital.

COLONEL ROBERT CALDWELL, Army Medical Staff (retired), died in a nursing home at Babbacombe, Devonshire, on April 4th, aged 59. He was the younger son of Robert Caldwell of Charleston, South Carolina, and was born in New York on October 30th, 1859. He was educated at the Westminster Hospital, and took the diplomas of M.R.C.S. and L.R.C.P. Edin. in 1883, also subsequently the F.R.C.S. Eng. in 1890, and the D.P.H. of the Scottish Colleges in 1901. After filling the post of assistant house-surgeon of Westminster Hospital, he entered the R.A.M.C. as surgeon in 1885, and became colonel in 1917. He served in the Soudan campaign of 1885-86, in the Frontier Field Force, receiving the medal and Khedive's bronze star; and in the South African war of 1899-1902, gaining the King's and Queen's medals; and had also gained the Royal Humane Society's medal. While in the army he devoted himself chiefly to sanitary work, and had held charge of the district

laboratories at Meerut and Aldershot. He gained the Parkes Memorial Prize in 1904 with an essay subsequently published on the *Prevention of Disease in Armies in the Field*, and edited the second edition of *Military Hygiene* in 1910.

LIEUT.-COLONEL JOHN BATTERSBY, R.A.M.C. (ret.), died at Knocknamoe, Omagh, Tyrone, on April 8th, aged 62. He was born in Dublin on May 19th, 1856, and educated at Trinity College, Dublin, where he graduated M.B. and B.Ch. in 1879. He entered the army as surgeon on February 5th, 1881, became surgeon-major on February 5th, 1893, and lieutenant-colonel on February 5th, 1901, went on temporary half-pay on October 2nd, 1910, and retired on May 19th, 1911. He served in the Egyptian war of 1882, when he was present at the battle of Tel-el-Kebir, and received the medal with a clasp, and the Khedive's bronze star; in the Chitral expedition of 1895 (medal with clasp); and in the Nile expedition of 1898, when he took part in the battle of Khartoum, and received the medal with a clasp, and the Egyptian medal. He rejoined for service in 1914.

BRIGADE-SURGEON WILLIAM TEMPLE, V.C., R.A.M.C. (ret.), died at Tunbridge Wells on February 13th, aged 85. He was the only son of the late Dr. William Temple, M.D., of Monaghan, where he was born on November 7th, 1833. He was educated at Trinity College, Dublin, where he graduated as B.A. and M.B. in 1858, taking the L.R.C.S.I. in the same year. He entered the army as assistant surgeon on November 1st, 1858, becoming surgeon on November 1st, 1870, surgeon-major on October 1st, 1873, and brigade-surgeon on April 10th, 1885, retiring on November 1st, 1889. He served, as medical officer in the Royal Artillery, in the New Zealand wars, in the Taranaki campaign in 1860-61, and in the Waikato campaign of 1863-65, when he took part in the actions of Tearei, Rangariri, and Rangiauhia, was mentioned in dispatches, received the medal, and gained the Victoria Cross, which was conferred upon him and Lieutenant A. P. Pickard, on September 22nd, 1864, for gallantry described as follows in the *Gazette*: "For gallant conduct during the assault on the enemy's position at Rangariri on November 20th, 1863, in exposing their lives to imminent danger in crossing the entrance to the Maori keep at a point on which the enemy had concentrated their fire, with a view to render assistance to the wounded, more especially to the late Captain Mercer, R.A." In his later service he was for some years secretary to the Principal Medical Officer, H.M. Forces in India, and was an honorary surgeon to the Viceroy.

Medical News.

DR. J. BRINDLEY-JAMES has been elected a member of the Barnes District Council.

A COURSE of lectures and demonstrations will be given on Wednesdays, at 4.30 p.m., at the Brompton Hospital for Consumption, beginning on Wednesday, April 30th.

SIR G. ANDERSON CRITCHETT, Bt., K.C.V.O., has been appointed a Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

THE annual medical missions meeting of the Society for the Propagation of the Gospel in Foreign Parts will be held on Wednesday, April 30th, at 8 p.m., in the Church House, Westminster.

At a joint meeting of the Faraday Society and the Röntgen Society, on Tuesday, April 29th, a general discussion on the examination of materials by x rays will be held in the rooms of the Royal Society, Burlington House, London, W.1, by kind permission of the Council, from 5 to 7 and from 8.30 to 10 p.m. The chair will be taken by Sir Robert Hadfield, Bt., F.R.S., President of the Faraday Society, who will introduce the discussion.

SIR JOHN ROSE BRADFORD, K.C.M.G., will give a discourse at the Royal Institution of Great Britain on Friday afternoon, May 30th, on After-passing virus in certain diseases. On the following Friday Sir Ernest Rutherford, who has recently succeeded Sir J. J. Thomson as Cavendish

Professor of Experimental Physics at Cambridge, will deliver a discourse on atomic projectiles and their collisions with light atoms.

A FRENCH Urological Society has recently been formed in Paris. The honorary president is Professor Guyon, the annual president M. Legueu.

THE activity of the Italian Society of Internal Medicine has been suspended during the war. At a meeting of the Directing Council in Rome on March 9th, under the presidency of Professor Maragliano, it was decided that the next congress should be held towards the middle of October next, if possible, at Trieste.

WE learn from the *New York Medical Record* that the U.S. War Department now announces that deaths in the American Expeditionary Forces and among troops in the United States from all causes numbered 107,444. In the Expeditionary Forces the total was 72,951. Of these, 20,829 were caused by disease, 48,768 by injuries in battle, while 3,354 resulted from other causes. The deaths from disease amounted in all to 32,737 and from other causes to 1,756, making a total of 34,493. The deaths from disease exceeded the battle casualties by 5,000.

A SPECIAL post graduate course on diseases of the thyroid and parathyroids, arranged in conjunction with the Fellowship of Medicine, will be given at the London School of Medicine for Women and the Royal Free Hospital, Gray's Inn Road, during May. The course will include an account of the anatomy, physiology, chemistry, and pathology of the organs, and medical and surgical applications. Communication should be made to the Warden at the school by April 30th.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology*, Westrand, London; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscera*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

A MEDICAL man who has been appointed a justice of the peace asks for the name of some handbook on law which would give him such legal information as he may need in the discharge of his duties as a magistrate.

LETTERS, NOTES, ETC.

MESSRS. F. DAVIDSON and Co., optical, surgical, and electrical instrument makers of Great Portland Street, W., ask us to state that they have no connexion with a Mr. Davidson who is stated to be touring certain parts of the country and advertising consultations for spectacles, etc.

ELIGIBILITY OF DISTRICT M.O.H. FOR MEMBERSHIP OF COUNTY COUNCIL.

"M.O.H." inquires if a medical officer of health of a small urban district council is prevented by holding this office from being elected a county councillor in the same county.

* * We understand that the medical officer of health of an urban district council is an entirely independent officer so far as the county council is concerned and not under its control. It appears that half his salary is repaid to the urban district council by the Local Government Board, and the channel through which this moiety is paid to the urban district council is, we believe, the county council; but so far as we know the money is not derived from the county rates, and the county council can in no way be considered to contribute to the salary of the urban district council M.O.H. We there-

fore see no reason why the M.O.H. of an urban district council should be debarred from election as a county councillor in the same county.

SUPERANNUATION OF MEDICAL OFFICERS, SCOTLAND.

MR. J. M. MORTIMER (Honorary Secretary, The Scottish Council of Local Government Officers, Paisley) writes: With reference to "Efficiency's" letter in your issue of April 12th, p. 470, may I be allowed to state that the Scottish Council of the Local Government Officers are anxious to present an absolutely united front when they make representations to the Secretary for Scotland on this important question? All Local Government officials are therefore urged to become members of our association so that we may go forward as a united body. Branches of the association have been formed in Edinburgh, Glasgow, Dundee, Aberdeen, Paisley, Greenock and Inverness. Either the secretary of any of these local branches or myself will be pleased to supply further information regarding the association's activities.

SPENGLER'S "GRIPPE I.K."

DR. ALEXANDER FRANCIS (London, W.) writes: Some time ago Dr. Carl Spengler of Davos sent me a sample of an I.K. he had prepared for the current influenza outbreak, on the same principle as his well known I.K. for tuberculosis. I found it so valuable, and others to whom I gave samples reported so favourably, that I urged Dr. Spengler to send a supply to this country to be available for general use. He has now done so, and I have placed it in the hands of Messrs. Allen and Hanburys (7, Vere Street, W.1), from whom it can be obtained. In the reports which I have received most satisfactory results were obtained in cases of severe septicaemic influenza pneumonia. In some instances one dose only was required. In a number of cases an apparently typical attack of influenza was caused to abort within a few hours by a small dose. This I.K. is best given by hypodermic injection (0.5 to 1 c.cm.), but it can be taken with less effect by the mouth. I am told that the results obtained by the "Grippe I.K." in Switzerland have been extraordinarily good.

THE CONTROL OF SYPHILIS.

M.B., D.P.H. writes: Might I suggest that private practitioners be supplied through the venereal centres with salvarsan or its substitute for the treatment of patients suffering from syphilis? There are many patients who cannot afford either the publicity of a venereal disease clinic or the expense of treatment privately, and these, I contend, will prove a great source of danger to the community. The drug could be supplied on written application from the practitioner, just as diphtheria antitoxin can at present be obtained gratis through the Public Health Department. If thought necessary the doctor, before he can be supplied with the drug, might be required to possess a certificate of competence in the administration of this special treatment.

INTERNATIONAL PHARMACY.

THE dream of every French pharmacist with a successful speciality is to foist it on to the British public, and as many of these specialities are elegant, well thought out, and practically convenient, their efforts, in association with the necessary publicity, are often attended by a considerable measure of success. This is as it should be, but, as the Irishman remarked, the reciprocity must not be all on one side. French regulations bearing on the introduction of foreign pharmaceutical preparations are extraordinarily severe. For instance, foreign-made serums are not admitted on any condition whatsoever, on the ground that their efficacy and the soundness of these preparations cannot be controlled. Then, again, these regulations forbid the importation of even a pharmacopoeial product—such, for example, as the pil. ipecac. cum scilla—nay, even such an innocent combination as extract of malt and cod-liver oil is tabooed, simply because the Superior School of Pharmacy has so recommended. Now our allies ought not to have it both ways. If the French practitioner in England be left at liberty to prescribe such French preparations and specialities as he please the English practitioner in France should enjoy the same liberty of action.

THE appointments of certifying factory surgeons in the following districts are vacant: Barrowden (Rutland), Dursley (Gloucester), Longton (Lancaster), Mold (Flint).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Seven lines and under	0 6 0
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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *post restante* letters addressed either in initials or numbers.

DISAPPOINTMENTS AFTER GASTRO-ENTEROSTOMY.

BY

ROBERT HUTCHISON, M.D., F.R.C.P.,

PHYSICIAN TO THE LONDON HOSPITAL, ETC.

THE modern operation of gastro-enterostomy when performed for chronic ulcer of the stomach or duodenum is usually so satisfactory in its results that a surgeon is justified in promising the patient complete relief from his digestive troubles if he submits to it. All the greater, therefore, is the disappointment of both when the promised benefits do not follow and when the patient finds that he has not obtained that digestive peace to which he had looked forward. I propose to consider briefly the nature of some of these disappointments and to discuss their cause and how they may be avoided.

Persistence of Pain.

The chief symptom of ulcer is pain, and the most certain immediate result of a gastro-enterostomy is the disappearance of pain. In the great majority of cases the relief from pain is permanent, but in a few it returns after an interval of a few months or longer. The pain may be constant or it may occur in bouts and have the character of "hunger pain." Naturally the patient fears that his old ulcer has come back—although as a matter of fact this rarely if ever happens—and he goes to his doctor, who is apt to put him off with a diagnosis of "adhesions." Now it would be going too far to say that adhesions are never a cause of severe abdominal pain, but they are certainly not often so, and after gastro-enterostomy no adhesions should form. As a matter of fact severe pain coming on some time after the operation should suggest the formation of an ulcer either in the jejunum or at the site of the anastomosis.

Jejunal ulcer seems most apt to form in those cases in which the gastric hyperacidity has persisted, as it sometimes does in spite of the operation. An anastomosis ulcer, on the other hand, is usually, I believe, the result of using unabsorbable sutures when uniting the stomach and jejunum. In either case the ulcer may heal temporarily under medical treatment by rest, diet, and bismuth, but permanent cure by such means is, I should think, rare, and operation is certainly the best remedy. So far as I have seen, it is usually quite satisfactory in its results.

Apart from fresh ulceration, pain recurring after gastro-enterostomy may be due to some condition outside the stomach which has been overlooked at the time of the operation or which has arisen since. Gall stones are a case in point. Most surgeons now make a point of removing the appendix when performing gastro-enterostomy, but if for any reason this has not been done, pain of appendicular origin may arise later and necessitate further operation. I have also seen one or two cases in which stone in the kidney appeared in patients who had undergone gastro-enterostomy. It should be remembered in this connexion that such patients are rather prone to phosphatic stone formation owing to the fact that they have often taken large quantities of alkalis for the relief of pain before the operation, and have had in consequence a condition of phosphaturia.

Pain may also persist if the operation has been unnecessarily performed in a case of acute ulcer or gastralgia. I have met with one example of this in a young woman in whom, when the abdomen was reopened in order to undo the gastro-enterostomy, no sign of a healed ulcer could be discovered.

Lastly, it would seem that an anastomosis between the stomach and jejunum predisposes to pain in the colon, perhaps from too rapid filling of it, perhaps from irritation by food which has been imperfectly digested higher up. At all events, pain of greater or less severity in the lower abdomen, and sometimes attended by looseness of the bowels, is not uncommonly met with in the earlier months after the operation, although it usually disappears later. In not a few instances also I have known mucous colitis appear in patients who had not been the subject of it before the operation, and this also, by reason of the enterospasm which is so often associated with it, may be a cause of pain.

Vomiting.

As a cause of disappointment after gastro-enterostomy vomiting is less common than pain. In the early days of the operation it was all too familiar as the result of the establishment of a "vicious circle," but with the present methods of operating a "vicious circle" is almost never seen. One still meets occasionally, however, with patients who have pretty continuous vomiting, chiefly of bile. Such an occurrence points to some mechanical obstruction in the neighbourhood of the anastomosis, and, if washing out the stomach fails to relieve surgical measures to deal with the obstacle are indicated.

Functional Disorder.

More baffling than either of the forms of disappointment already considered are those cases in which the symptoms point not to an organic (or surgical) lesion, but to a profound functional disorder of the alimentary tract. The operation may have relieved the patient of his devil of pain, but it has let in seven other devils which are almost as disagreeable tenants. The complaints of such patients are various: there is a "heavy" feeling or "distension" in the epigastrium, as if the stomach was "too big"; or again there is a sense of "emptiness," as if the fool dropped "straight down"; distressing nausea, like "constant sea-sickness," is frequent; flatulence and regurgitation are also met with; and along with any of these symptoms there may be a feeling of great weakness and prostration, failure to gain weight, profound mental depression with nervous feelings and phobias of various sorts. No wonder that, when many of these symptoms concur, the patient is disappointed with the results of the operation. What is the cause of these untoward manifestations? It is not always easy to say. A test meal usually reveals diminished acidity, such as is common after gastro-enterostomy, and the x rays generally show that the stomach is acting well; sometimes, indeed, the stomach is emptying too rapidly, but in one or two cases within my experience it has been found that owing to dropping of the stomach the stoma is placed too high and stagnation in the lower part of the organ has resulted. This is specially apt to happen if the pylorus has been occluded at the time of the operation, and the delayed emptying, combined with a lessened acidity, is enough to account for much digestive discomfort.

One feature which is common to almost all the cases of functional disorder after gastro-enterostomy is diminished gastric tone. It is probable that this has been present in the majority even before the operation; but in some it may date from the operation itself. It is not sufficiently realized that the operation of gastro-enterostomy profoundly affects the gastric functions, both secretory and motor, and that it is not the simple drainage procedure sometimes pictured. Given an atonic stomach which also empties itself too fast, we get in an exaggerated degree that sensation of sinking and emptiness which is so characteristic a symptom of ordinary gastric atony.

The effects of too rapid emptying of the stomach are aggravated by a consequent overfilling of the intestine which is often accompanied by some ileal stasis, as revealed by the x rays. In two of my cases stagnation had been carried so far that part of the jejunum beyond the anastomosis had become dilated so as to form, as it were, an accessory stomach, as if to compensate for the practical abolition of the true stomach as an organ of digestion.

Glycosuria.

An interesting symptom of which I have met with three examples amongst the cases now under consideration, is glycosuria. How this is produced it is difficult to say. It has been small in amount and apparently not much influenced by diet. In at least one case it disappeared after the anastomosis had been undone.

TREATMENT.

What can be done for patients who exhibit these symptoms? Not very much, unfortunately, but considerable relief is experienced from the wearing of an efficient abdominal support with a diet consisting of small dry meals and rest in the recumbent position after food. Abdominal massage has a good effect upon the ileal stasis. Drugs are not of much help. In at least four cases the discomfort was so great that I was obliged to advise that

the anastomosis should be closed. One is naturally reluctant to recommend such a step, but so far as I have seen the results have always justified it. The constant nausea, which was a prominent symptom in all of them, was got rid of, and, although none of the patients was restored to perfect health, they were all greatly relieved and brought back to a condition of comparative efficiency.

The moral to be drawn from these disappointments is that cases for gastro-enterostomy should be selected with greater care than is always exercised, and the opinion of a physician as to the advisability of the operation should be obtained as well as that of a surgeon. Even with the greatest care mistakes in diagnosis will occur, but the surgeon should have the moral courage to close the abdomen and proceed no further if at the time of the operation no definite organic lesion of the stomach or duodenum can be demonstrated. In some of the cases I have seen there was strong reason to suspect that the operation had been performed for atonic dilatation or gastroptosis only; the results are always bad. Even when an organic lesion is present the coexistence of decided atony of the stomach is a contraindication to operation unless careful and prolonged medical treatment has failed to relieve.

The Lumleian Lectures

ON

CEREBRO-SPINAL FEVER.

DELIVERED BEFORE THE ROYAL COLLEGE OF
PHYSICIANS OF LONDON,

BY

SIR HUMPHRY ROLLESTON, K.C.B., M.D., F.R.C.P.,

EMERITUS PHYSICIAN, ST. GEORGE'S HOSPITAL; PRESIDENT,
ROYAL SOCIETY OF MEDICINE.

LECTURE II.

(Abstract.)

IN his second lecture Sir Humphry Rolleston gave a clinical picture of the disease. The incubation period has been variously stated to be from one day up to as long an interval as thirty days, most writers inclining to a period of four or five days, and very few regarding it as long as ten days. These estimates have been based on the interval between known contact with a case or a recognized carrier and the appearance of symptoms, but a more accurate basis for deciding the incubation period would be provided by determining the average duration of the period that meningococci are present in the nasopharynx before symptoms of systemic infection appear. Fildes and Baker examined with a negative result 26 men who subsequently contracted the disease, concluding that carriers seldom develop the disease, and that the period of time between the acquisition of the meningococcus and the onset of the disease must usually be short. Out of these 26 cases, 5 were examined within a week of the onset, 8 during the second week, and 4 in the third week before the onset.

The general opinion, as voiced by von Lingelsheim, Gordon, and Andrewes, is that meningococci are constantly present in the throat at the onset of the disease, and that every case arises in a carrier. Fildes and Baker's observations, as far as they go, are certainly compatible with this view that the incubation period is very short, and need not be more than a day or two, but their failure to find any meningococci in the throats of persons who afterwards contracted the disease is exceptional, for other observers with much smaller series of cases have usually been able to point to some examples of known carriers contracting the disease; thus, among Martin Flack's 185 carriers 4 developed the disease during isolation.

ONSET.

The usual form is much like that of ordinary "influenza," and is sudden, with headache, fever, and vomiting, the symptoms becoming progressively worse, so that in twenty-four hours meningitis is suggested. Sometimes after this form of onset the symptoms rather suddenly advance, so that in a short time—an hour or two—the patient is comatose or delirious; in young children, and occasionally

in adults, the onset may be marked by convulsions. On the other hand, after the onset there may be a fallacious improvement for a day or two, as if the blood invasion were yielding to the forces of natural immunity, and then meningitic symptoms appear. The catarrhal onset lasting some days is more gradual.

The acute or fulminating onset is the least frequent; it may take various forms. It may be maniacal, imitating delirium tremens, attended by convulsions suggesting epilepsy, by hallucinations or syncope, or the patient may be unconscious when first seen. In patients found unconscious, or in the apoplectic mode of onset, the diagnosis is obviously very difficult; in some instances the patient has fallen out of bed or out of his hammock, and the question of fractured base has arisen. This apoplectiform onset may be rapidly followed by death, and thus accounts for cases of sudden death unexplained until examination after death shows the presence of the meningococci in the central nervous system.

With severe haemic infection the manifestations are those of grave toxæmia, approaching the typhoid state, often at the outset with a subnormal temperature, which subsequently rises rapidly, quick pulse and respirations, vomiting, and a haemorrhagic rash. Sudden cardiac collapse and fatal syncope at the onset of meningitis are specially described by Sainton. The initial shock may be considerable, and when accompanied by vomiting, abdominal pain, and diarrhoea, may suggest an acute abdominal lesion such as appendicitis or perforation, and laparotomy has naturally been performed. One such case in the navy was operated upon for a supposed perforated gastric ulcer and found to have a normal abdomen; at the suggestion of the anaesthetist, lumbar puncture was at once performed, and turbid fluid containing meningococci obtained.

CLINICAL FORMS.

Cerebro-spinal fever, like acute poliomyelitis, has two distinct phases: (a) The general or systemic infection; and (b) the localization in the meninges. The evidence of systemic infection is usually prominent in the initial stages, and the process is then commonly extremely acute, but it may continue for weeks, and in rather rare instances chronic septicaemia follows meningitis.

A most important factor influencing the course and type of the disease is the serum treatment. Absence of or inefficient serum treatment is responsible for fatal results either early in the disease or after a chronic illness due to adhesions or chronic septicaemia. The different types of cerebro-spinal fever show transitional forms, and description of the forms is apt to be artificial and confusing, as a single case may appear to belong to two. Further, the clinical picture of the disease is often abruptly changed by unexpected alterations, such as improvement or the onset of grave symptoms. The following forms of cerebro-spinal fever may be briefly mentioned without a detailed description, and to avoid repetition the symptoms will be mainly dealt with subsequently: (1) Fulminating; (2) ordinary acute; (3) abortive; (4) chronic: (a) septicaemic; (b) encysted or loculated meningitis.

The posterior basic meningitis of infants is chronic encysted meningococcic meningitis in young infants, and its special features appear to depend on the early age of the patients rather than on any peculiarity in the infecting organism. More than twenty years ago Still showed that the disease was due to a micro-organism almost identical with the meningococcus, and of late years it has become recognized that there is no constant bacteriological distinction between the meningococcus of posterior basic meningitis and that of cerebro-spinal fever in later life. But Andrewes states that serologically the meningococci may be of a different strain from those of the epidemic disease in adults, and M. H. Gordon states that the meningococci in posterior basic meningitis do not differ serologically from those in adult cases, except that some, which are more difficult to identify, are usually atypical specimens of his Group IV. Among the cases called posterior basic meningitis half occur under six months of age, three-quarters within the first year, and practically all under the age of two years, but there is no essential difference between the condition of closed meningococcic infection of the cerebral ventricles in infants and in adults. It may be well to mention the main clinical features differentiating the clinical form called posterior basic

meningitis from ordinary cerebro-spinal fever in adults: 1. The chronicity of the disease, for acute cases of meningococcal meningitis do not come under this heading. 2. The rarity of eruptions; among Hildesheim's 100 cases there was no example of a purpuric rash and herpes was present in two cases only. An ill-defined erythema occurs in a few cases. 3. Amaurosis or loss of vision without objective changes in the retina or optic nerve is common; it was noted in 37 out of Hildesheim's 100 cases. 4. The rarity of deafness and the occasional presence of auditory hyperacuity. 5. The prominence of opisthotonos, due to the greater flexibility of the spinal column. 6. Joint infection appears to be usually periartritic rather than intra artritic, and may be associated with pseudo-glioma or the opacity of the vitreous caused by meningococcal invasion and imitating a glioma.

MIXED AND SECONDARY INFECTIONS.

In addition to the meningococcus the cerebro-spinal fluid may show various micro-organisms, such as the tubercle bacillus, the pneumococcus, the influenza bacillus, streptococci, and staphylococci. Among 339 cases in the navy there were 8 of this kind, 4 with streptococci, 3 with pneumococci, and 1 with tubercle bacilli; such cases are, of course, usually fatal, and recovery occurred in one case only, with pneumococcal infection present at the first lumbar puncture.

The commonest secondary infection appears to be pneumococcal; and it would appear that secondary pneumococcal infection depends mainly on the virulence of the pneumococcus, for in a previous series of 300 cases of meningococcal meningitis Netter and Salanier found four cases only of secondary pneumococcal infection.

Fitzgerald, who reports 12 cases of meningococcal meningitis, three of which were also infected with pneumococci, suggests that this secondary infection is commoner than is usually recognized, and quotes Mervyn Gordon's opinion that it occurs in 5 per cent. of the cases. He points out that unless the lumbar puncture fluid is bacteriologically tested on each occasion cases may easily be missed, and thus the real reason for ascribed failures of serum treatment be undetected. All the reported cases of combined meningococcal and pneumococcal infection, with the exception of three recorded by Netter and Salanier, proved fatal. Combined tuberculous and meningococcal infection of the meninges is very rare. Of the recorded cases Bériel and Durand accept eight only.

Streptococcal infection may spread from the lumbar puncture wound, be due to otitic infection, or arise without any obvious focus of infection.

RASHES.

The incidence of rashes varies in different epidemics; thus, in one of the earliest accounts of the disease North says that haemorrhages, which in 1806-7 marked almost every case, were rarely observed in 1808-9. Writing in 1911, Netter and Debré stated that eruptions have been, generally speaking, commoner in Britain and America than in Germany, and especially in France. In the years before the war rashes were very rare in sporadic cases in adults and were hardly ever seen in children, but during the increased prevalence since 1914 rashes have been common; thus, among 502 cases in the Royal Navy during the first four years of war there were 296, or 59 per cent., with rashes. In France also purpura has become more frequent during the war, and Netter has suggested that this may be correlated with Dopter's observation that whereas before the war the infecting strain of meningococcus was in 96 per cent. of cases Type A (Gordon's I and II), during the war Type B (Gordon's II and IV) has become equally if not more important, and that the increased frequency of meningococcaemia is also thus explained.

Among 277 cases Netter had 19 of meningococcal purpura without meningitis, and states that it has become commoner, and that as bullae can be raised by friction over the purpuric areas more easily than in other forms, this may be utilized to determine the strain of the infecting organisms and so enable the corresponding serum to be selected.

Varieties of Rashes.

The cutaneous rashes accompany or closely follow the onset of the disease. They are seen on the first or second day of the disease and are comparable to the rose spots of

enteric fever. There is almost always an interval of two to three days between the appearance of the initial rash and of labial herpes in cases which show both.

The characteristic rash is haemorrhagic, and may be either small and petechial, resembling that in malignant endocarditis, or purpuric like that in the malignant forms of the exanthemata and acute lymphocytic leukaemia. The rash may be petechial or purpuric from the start, or the petechial character may supervene on an erythematous, papular, rose-spot, macular, or blotchy eruption. The erythematous rash has been described as transient and is seldom recorded. Occasionally the initial rash is described as urticarial.

The rose spots, papules, and petechiae are presumably embolic and evidence of the stage of septicaemia or blood invasion. They are more prone to occur in parts exposed to friction, especially the joints; in some instances the haemorrhagic eruption may be partly vesicular, in others bullae may form over purpuric areas, and in one such case in the navy a pure culture of meningococci was obtained from the fluid. In rare instances ulceration may supervene in large haemorrhagic areas, and yet recovery follow. Trophic bullae may form on various parts of the body, such as the fingers, and, according to Fairley and Stewart, are sterile. These observers divide the rashes into (1) primary—namely, the purpuric, petechial, and macular, due to septicaemia; and (2) the secondary, which do not appear until after the third day of the disease and are regarded as toxic.

Herpes.

Herpes is a well-recognized event in cerebro-spinal fever and may be considered under the two heads of (1) ordinary febrile herpes labialis, and (2) herpes of the zoster type.

Herpes labialis appears to occur with varying frequency in different epidemics, and the relative incidence of herpes labialis and of other cutaneous eruptions shows similar fluctuations; from a review of the literature up to 1898, Councilman, Mallory, and Wright concluded that herpes is far commoner than any other eruption. Netter found that herpes occurred in a third of his cases, and was more frequent than purpura, and Sainton states that it was present in two-thirds of his cases. On the other hand, Stillé says that in the Massachusetts epidemic herpes was infrequent, and much less often present than cutaneous rashes; in 502 naval cases there were 117, or 23 per cent., with herpes, and 296, or 59 per cent., with rashes.

Labial herpes appears later than the initial rash, and usually on the fourth day of the disease, but it may occur earlier, on the second day, or be postponed until later. In rare instances it may recur during continued fever, with a recrudescence of symptoms, or with the appearance of some complication. It is unusual in children, and exceptional in infants.

The causation of ordinary herpes labialis is undecided; it is not generally thought to be associated with any lesion of the central nervous system, though Howard, from histological examination of the Gasserian and other ganglia, considers that the herpes of pneumonia and cerebro-spinal fever has a similar anatomical basis to that of herpes zoster. Though frequently looked for, meningococci have very seldom been isolated from the vesicles of labial herpes. It has been suggested that the vesicles are due to meningococci, and their situation determined by inflammation of the Gasserian ganglion. As herpes labialis has been seen in persons reacting vigorously to prophylactic antimeningococcal vaccines it appears reasonable to refer it to the local action of toxins rather than of bacteria in the skin.

Herpes of the zoster type occurs in cerebro-spinal fever, but much less often than labial herpes. The two forms may be present at the same time; thus labial herpes and herpes of the external ear due to inflammation of the geniculate ganglion of the facial nerve, or labial herpes and herpes of the neck may be combined.

NERVOUS SYMPTOMS.

Nervous symptoms are predominant at the onset of meningitis; severe headache, vomiting, and mental stupor or delirium are usually present, and there may be wild mania, symptoms suggesting delirium tremens, or epileptic

seizures. The mental disturbances during the septicæmic stages, and before meningeal infection has occurred, are probably toxic, and comparable to those at the commencement of other acute infections, such as pneumonia. Incontinence of urine and faeces is common. Swallowing may be difficult, either from oesophageal spasm or paresis, and is probably more frequent than the notes of cases show. Among the 502 naval cases it was mentioned in 8 (5 fatal). In a case recorded by McConnell, Morris, and Seehorn oesophageal spasm was so obstinate that gastrostomy was done, death following twelve hours later. General hyperaesthesia is not uncommon.

The condition of the reflexes varies; the deep reflexes are often exaggerated and an extensor response may be present; among 393 naval cases Babinski's sign was noted in 35, or 8.8 per cent.; it may be obtained on one side only. Herrick insists that whereas in other acute infections the deep reflexes may be equally exaggerated on the two sides, in cerebro-spinal fever there is a notable inequality. Kernig's sign and rigidity of the neck are practically constant when meningitis has appeared, and are so well known that they will not be further discussed here.

Facial paralysis is rare; it appears early and is transient. Among 502 naval cases it was recorded in 7, but among Robb's 230 cases there were 11 examples.

Paraplegia.

Paraplegia is rare; among 502 naval cases it was noted in 1; among more than 400 cases MacLagan found it in 3, 2 of which recovered; there was one example among Robb's 230 cases, and none among 120 cases that recovered and were analysed by Worster-Drought. It may be either organic or, in very rarely recognized instances, functional.

Organic paraplegia is described by Sophian as being either (1) spastic, with ataxia, clonus, extensor plantar response, no sensory changes, and no vesical disorder; (2) flaccid, with absence of reflexes and sensory changes. (1) of the spastic form Sophian has seen 12 cases, presumably due to the pressure of exudate around the cord some way above the cauda equina. The general experience is that the paraplegia slowly improves, but in some instances it is permanent.

Functional Paraplegia.—In convalescents the gait is naturally at first impaired, and as the patients may be unduly susceptible to auto-suggestion hysterical paraplegia may result.

Hemiplegia: Monoplegias: Nerve Deafness.

Hemiplegia is rare, and, like paraplegia, may be organic or functional. Among the 502 naval cases it occurred in 12, 10 of which proved fatal. Robb found 4 cases of hemiplegia among 230 cases at Belfast.

Monoplegias of the limbs due to inflammation of the nerve roots (radiculitis) as they pass through the meninges are described by Netter and Debré. They are even rarer than hemiplegia, occur earlier, are accompanied by wasting, pain, loss of reflexes and of sensation, but they usually disappear. Some only of the muscles of the limb may be affected. Sophian, however, states that monoplegias occur late in the course of the disease.

Nerve deafness is not nearly so common now as it appears to have been formerly. Deafness may also be due to otitis media, which is not a commonly recognized complication of cerebro-spinal fever; among 502 naval cases it was noted in 10. But some writers state that a mild form of otitis media is very common.

OCULAR SIGNS AND SYMPTOMS.

The pupils are usually dilated, due to irritation of the sympathetic, and when sluggish in addition point to increased intracranial pressure.

Photophobia, said to be rare, and thus to contrast with its frequency in tuberculous meningitis, was reported in 52, or 10 per cent., out of 502 naval cases, and was almost always an initial symptom.

Conjunctivitis is not very common; it occurred in 5.6 per cent. of 502 naval cases, in 10 (or 9 per cent.) of Councilman, Mallory, and Wright's 111 cases, in 15 (or 20 per cent.) of Ballantyne's 73 cases, and in 20 per cent. of Fairley and Stewart's series. The pus may, but does not always, contain meningococci. Conjunctival haemorrhages are sometimes present, and are important diagnostically,

as they are practically never seen in other forms of meningitis.

Panophthalmitis is rare and is commonly unilateral; Levy (of Essen) had the exceptional experience of seeing 9 cases, 8 unilateral, among 165 cases of the disease. Among the 502 naval cases it occurred in 7, or 1.4 per cent., and was bilateral in 2 and unilateral in 5, all on the right side; in this connexion attention may be drawn to Netter's suggestion that the position of the patient's head, on the right or left, determines the side on which unilateral panophthalmitis occurs. As long ago as 1867 S. Gordon noticed the predominance of these infective conditions in the right eye.

Optic Neuritis and other Nerve Lesions.

Optic neuritis is usually regarded as infrequent and thus contrasting with its incidence in tuberculous meningitis; it seems to be specially related to septicæmic infection.

True nystagmus occurs in severe cases only, and by Fairley and Stewart is regarded as pathognomonic of internal hydrocephalus, and therefore of extremely grave prognosis. It must be distinguished from pseudo-nystagmus or jerky movements at the limit of fixation, which, according to Ballantyne, are without significance.

Strabismus, usually due to implication of the sixth nerve, is much less frequent than in tuberculous meningitis, and is usually transient.

Ptosis is much less frequent than strabismus; out of the 502 naval cases it was noted in 18, or 3.6 per cent., but 13, or 72 per cent., of these 18 cases terminated fatally. The mortality was thus 20 per cent. higher than in the squint cases; this may be correlated with the probable spasmodic nature of many of the squints and the paralytic origin of the ptoses.

Retraction of the upper eyelids may occur; among 73 cases Ballantyne noted it in 15, one of which also showed von Graefe's sign.

CIRCULATORY SYMPTOMS AND COMPLICATIONS.

Pericarditis is probably often latent, as it is found after death when previously unsuspected—an experience familiar in other conditions. Netter and Debré speak of pericarditis as a phenomenon almost confined to the post-mortem table, and some authors do not refer to it. Robb, however, noted pericardial friction in 17, or 7.4 per cent., out of 230 cases.

Endocarditis is probably not so rare as it has been stated to be, but the vegetations may be small and possibly are sometimes overlooked.

Phlebitis in the lower extremities has been reported in rare instances.

The blood shows a polymorphonuclear leucocytosis of from 20,000 to 50,000, and, according to Koplik, is over 25,000 in more than half the cases; in chronic cases the leucocytosis may fall to normal.

Pulse and Blood Pressure.

The pulse is usually regular, though it may, especially in grave cases, be irregular. Like the temperature, the pulse rate may vary greatly within a short time. The outstanding feature about the pulse is that it is so often slow in relation to the temperature; thus, in a naval chaplain who was maniacal in the early stage the temperature was 105° F. and the pulse 60. The slow pulse depends on vagal inhibition due to increased intracranial pressure. In fulminating and septicæmic cases the pulse is rapid, as in most other acute infections. Before death the pulse may become extremely rapid.

The arterial blood pressure is low in the septicæmic stage, and in the worst cases may be impossible to record, rises with the increased intracranial pressure accompanying the onset of meningitis, and may then be between 140 and 190 mm. Hg, and in internal hydrocephalus is almost always raised from pressure of the cerebro-spinal fluid on the floor of the fourth ventricle. During convalescence the blood pressure is, in the absence of complications, normal or subnormal. The *tache cérébrale* is usually well marked, but is not of any diagnostic value. Epistaxis is occasionally seen.

Temperature.

The temperature is very irregular and does not conform to any rule; probably every case has fever at some time

during the course of the disease, but some charts show little or no elevation of the temperature. There may be extreme oscillations at very short intervals—a feature of some diagnostic value in the early stages, according to Netter.

COMPLICATIONS IN THORAX AND ALIMENTARY SYSTEM.

Pulmonary complications in this country since the war have not been very common; bronchitis and bronchopneumonia have been the most frequent and important.

Pleurisy may, of course, accompany pneumonia or bronchopneumonia in the course of cerebro-spinal fever, but it may occur without any obvious lung lesion; this occurred in 3 out of 502 naval cases.

Parotitis is rare; it may be due to an ascending infection from the mouth, as in other fevers and conditions in which the mouth is dry.

In the most severe cases there may be blood in the vomit and faeces, but rarely in considerable quantities. Diarrhoea is not uncommon as an initial symptom, and, as mentioned elsewhere, abdominal symptoms may be so prominent as to suggest an acute perforation of the alimentary tract, appendicitis, or Henoch's purpura. Jaundice is quite exceptional, and one case of peritonitis is tabulated by Herrick.

LESIONS OF JOINTS.

Arthralgia, or pain in the joints like that of influenza, is common at the onset and in the early stage of the disease, but is often overshadowed by the more severe symptoms.

Arthritis, or more often synovitis, is a recognized complication of cerebro-spinal fever, and may occur in meningococcal infection without meningitis, and in such cases has sometimes been regarded as "peliosis rheumatica."

The incidence was estimated at from 10 to 15 per cent. by Sophian, and from 5 to 20 per cent. by Roger, but among 502 cases in the navy it occurred in 24, or 4.8 per cent., and among Fairley and Stewart's 323 cases in 23, or 7 per cent. Among 902 other cases there were 59 cases of synovitis, or 6.5 per cent. It is more often seen in adolescents and adults than in babies, thus recalling the incidence of synovitis in acute rheumatism; but when it does occur in babies the hands and feet are specially picked out, whereas in older patients the larger joints—the knees, wrists, and ankles—are usually attacked. In posterior basic meningitis Still found periarticular infection, the joint cavities being healthy in 4 out of 49 cases examined after death, and Osler, in his Cavendish lecture, said the lesions were generally periarticular.

Clinical Features of Joint Lesions: Prognosis.

The accounts of the clinical features of the joint lesions in cerebro-spinal fever vary; thus, by some writers the joints are said to be very painful, by others as tolerant of movement.

The prognosis as regards the condition of the joint is good; the early cases clear up rapidly and commonly without any necessity for the intra-articular injection of serum. Even suppurative cases may clear up after simple aspiration. Ankylosis, of which Roger records a case with implication of the hip and knee, is rare.

The chronic cases of meningococcal pyarthrosis may imitate gonococcal or tuberculous arthritis. When the synovitis occurs about the eighth day of the disease it may be difficult to decide whether it is meningococcal or the first sign of serum disease. For the treatment intra-articular injection of serum has been widely recommended, but most cases clear up with purely symptomatic treatment. Salicylates do not exert any influence on the synovitis, but aspirin relieves the pain.

URINARY CHANGES.

The urinary changes are not characteristic or of clinical importance.

Cystitis may occur, and the incidence of pyuria has varied in different outbreaks. *Pyelitis* was reported in 5 per cent. of the Texas epidemic by Sophian, who described meningococci in the urine, but general experience shows that meningococci are rare in the urine, and that cystitis and pyuria during the disease may be due to other organisms; polyuria is occasionally noted.

Albuminuria is not very common, and when present is usually small in amount.

Haematuria is not common; when it occurs it usually is an early complication, and is associated with a petechial or haemorrhagic rash; it is presumably associated with haemorrhages in the mucous membrane of the urinary tract, but is not so often seen in the fulminating cases with much purpura as might naturally be expected. Among the 502 naval cases it was noted in 4 only.

Glycosuria is rare and may be quite transient. It is stated to be less frequent than in tuberculous meningitis, in which it occurs late; Garrod and Frew found it in 15 out of 41 cases of tuberculous meningitis, but never in posterior basic meningitis. The glycosuria would appear to be nervous and central in origin, but more than this it is difficult to say.

Urobilinogenuria was recorded by Cazamian in three-quarters of his 113 cases; it was most intense at the onset and was as frequent in the non-septicaemic as in the septicaemic cases. *Indicanuria* is stated to occur in grave cases.

EPIDIDYMITIS AND ORCHITIS.

Epididymitis and orchitis are complications of cerebro-spinal fever, and the meningococcus has been obtained by puncture of the inflamed organ, but it is rarely mentioned in the textbooks.

It appears that both meningococci (Gordon's Types I and III) and para-meningococci (Gordon's Types II and IV) may be associated with orchitis and epididymitis; but it is interesting that Latham's cases were associated with Type IV, which seems particularly prone to cause septicaemic and metastatic lesions.

It is generally considered that the epididymitis and orchitis are septicaemic in origin. I have not any reference to cases in boys under the age of puberty. In about 10 per cent. of the cases the lesion is bilateral. Orchitis or epididymitis is almost always transient, subsiding without suppuration and not being followed by atrophy.

RELAPSES AND RECRUDESCENCES.

There is some confusion between these two terms, and therefore some uncertainty about the frequency of true relapses.

Recrudescences, sometimes called intermittent relapses, or the return of symptoms before the patient has really recovered from the disease, are very common, and a patient may have several; among the naval cases one patient had 7, and Ker quotes 13 recrudescences.

True relapses are rare. Netter appears to draw the line between recrudescences and relapses at a month from the disappearance of symptoms, and reported 4, or 1.6 per cent., among 255 cases.

Late relapses at long intervals after the patient has been cured can hardly be distinguished from second attacks. These cases of second attack are very rare; it is noteworthy that one attack of meningococcal infection usually protects against another, and that, as Adams has pointed out, the meningococcus thus differs from the majority of pathogenic micrococci.

DIAGNOSIS.

For the certain diagnosis of meningococcal meningitis bacteriological examination of the cerebro-spinal fluid for meningococci is necessary, and similarly in the pre-meningitic stage of cerebro-spinal fever a blood culture is essential. No doubt genuine cases of cerebro-spinal fever may be ruled out by failure of bacteriological methods to give positive results. But this error is probably much less than that which would result from the inclusion of cases diagnosed on clinical grounds, and in the latter event it would be difficult to know where to draw the line. Cases with meningitic symptoms and meningococci in the nasopharynx but not in the cerebro-spinal fluid, though often probably genuine cases, and, indeed, so regarded by Flack, are open to the criticism that they may be meningococcus carriers with meningitis or meningism due to some other cause.

No clinical manifestation is pathognomonic of meningococcal infection. A haemorrhagic rash, though highly suggestive of meningococcaemia, may be present in pneumococcal, streptococcal, and influenza infections, and in malignant forms of the exanthemata, such as small-pox. From other forms of meningitis, such as tuberculous,

pneumococcic, otitic, influenzal, an undoubted diagnosis can be made only by lumbar puncture and examination of the cerebro-spinal fluid.

As lumbar puncture is such an essential element in the diagnosis, it is well to insist that the risk of any harm from diagnostic puncture, provided the fluid is not withdrawn too rapidly or in excessive quantities, is almost negligible; some haemorrhage may occur, but this seldom causes serious damage.

The risk of introducing infection and setting up meningitis by diagnostic puncture may be practically dismissed, and is quite different from the danger of infection from repeated tapings.

Although it is simple enough to depend for the diagnosis of meningococcic meningitis on the examination of the cerebro-spinal fluid for meningococci, there are a number of cases in which a decision is still left in doubt. Cases certainly occur about which the purely clinical diagnosis appears unquestionable, but in which the cerebro-spinal fluid, though turbid from the presence of polymorphonuclear leucocytes, does not contain any micro-organisms. The occurrence of cases with a sterile polymorphonuclear fluid at the first lumbar puncture recalls Hort's contention that the meningococcus is only one of the phases in the life-cycle of the virus, and raises the unorthodox suggestion that in some of the phases the organism may be a filter-passer.

These cases should be treated, although they cannot be tabulated, as meningococcic; recovery is in favour of a meningococcic origin, not only from the point of view of this therapeutic test, but also because other forms of polymorphonuclear meningitis are usually fatal, recoveries in pneumococcic meningitis being most exceptional.

As already mentioned, the cerebro-spinal fluid, though characteristically polymorphonuclear, may, particularly in chronic cases, show a predominance of lymphocytes, and so resemble the cytology of the meningitis of tuberculosis, syphilis, mumps, malaria, acute lead poisoning, and of the meningitic form of acute poliomyelitis. Incidentally, some of the clinical differences from tuberculous meningitis have been referred to, and with regard to the others, though it is an interesting academic study, lumbar puncture will always be necessary, and more rapidly and surely decide the diagnosis and prognosis.

Meningism may be due to such a large number of acute infections that it would take too long to detail them. In particular, the lecturer mentioned pneumonia, otitis media, influenza, malaria, and salvarsan injection in this connexion.

Discussing the differential diagnosis, the lecturer mentioned tonsillitis, measles, rubella, rheumatic stiffness of the neck, and rheumatic fever as possible causes of difficulty.

Spirochaetosis ictero-haemorrhagica may cause meningitis, and in some of these cases there may be little or no jaundice.

In the acute infective polyneuritis described by Bradford, Bashford, and Wilson, the initial symptoms of headache, vomiting, pain in the back, and moderate fever, are in rare instances sufficiently severe to suggest the possibility of cerebro-spinal fever, but lumbar puncture shows that there is not any meningitis. *Anthrax* with cerebral symptoms may imitate meningococcic meningitis.

The meningitic form of *Acute Poliomyelitis*.—Clinically the resemblance to cerebro-spinal fever is very close; thus in 1911 Reece found that a reputed outbreak of cerebro-spinal fever was really one of acute poliomyelitis without any admixture of meningococcic cases.

Encephalitis lethargica, when first seen in Paris and elsewhere, was thought to be meningococcic meningitis until lumbar puncture put this diagnosis out of court. The cerebro-spinal fluid is clear and the cell content usually normal; if there be any cytological change it is in the direction of a lymphocytosis. Another difference from meningococcic infection is the absence of a haemic leucocytosis. The striking features of the disease—lethargy and ocular paralyses, though the latter are not constant—should arouse suspicion.

Uraemia may be suggested by fulminating cases in an unconscious condition, especially as there may be albuminuria, or from collapse, suppression of urine, and a petechial rash which might be thought to be uraemic. In pregnant women convulsions during cerebro-spinal fever have been regarded as eclamptic.

The purpuric eruption of the fulminating and acute cases

may lead to confusion with fulminating and other forms of purpura, such as acute lymphocytic leukaemia, streptococcic septicaemia, Henoch's purpura, and the diagnosis may be cleared up only after death. *Haemorrhagic small-pox* occurring in connexion with cerebro-spinal fever may be regarded as the meningococcic infection. In the past the disease appears to have been confused with *malignant measles*, for in 1867 Gordon stated that haemorrhagic measles always accompanied cerebro-spinal fever.

Typhus, severe food poisoning, and acute osteomyelitis were also considered.

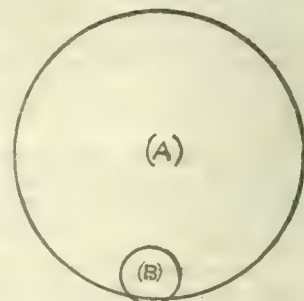
HOW TO READ STATISTICS.

BY

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It is a common but erroneous saying that statistics can prove anything; invaluable logical deductions can be drawn from complete statistical tables, but the conclusions drawn from incomplete tables are always fallacious. Every week one sees from insufficient data conclusions airily drawn that convince the simple reader; even the masters of the profession fail in this way: Gowers pointed out that among the lower classes 80 per cent. of the tabetics have been infected with syphilis, and therefore the preponderating cause of tabes was syphilis. Many people are so overwhelmed with a bald statistical statement of this sort that they seem to lose all their reasoning power. A moment's thought will show that the only logical conclusion that can be drawn from such a bald statement is that some syphilitics suffer from tabes. It is quite probable that less than 4 per cent. of syphilitics get tabes. It is not my intention to dispute the relation of tabes to syphilis, but to show what data are required before any association between two attributes can be inferred from statistical evidence.

Suppose that the following statement is made, and that it is known to be true of a certain assemblage: "99 per cent. of those who had red hair were Canadians." How many are apt to infer from this that the majority of Canadians had red hair! But a little thought will show that from the premiss it is impossible to say whether there is any association between Canadians and red hair; it is quite possible that 99 per cent. of the Canadians there had not red hair, as will be easily seen from the adjoining diagram.



Let the number of Canadians present be represented by the larger circle (A) and the number of those with red hair by the smaller circle (B). Let (N) denote the total number of observations, or in this case the total number of inhabitants in the place considered, say (N) = 12,000. Let capital letters denote the attributes to be investigated—for example, A denotes Canadians, B red hair. Further, let the number of those who possess the attribute of A, or the "class-frequency" of A, be denoted by (A); that is, let the class-frequency of an attribute be denoted by the attribute symbol enclosed in brackets. Similarly, let the class-frequency of the "not-A's" be denoted by (a), the corresponding small letter enclosed in brackets. Now suppose that the following five class-frequencies are given:

$$\begin{aligned}(N) &= 12,000 \\ (A) &= 11,880 \text{ and } (B) = 100 \\ (a) &= 120 \quad (b) = 11,900\end{aligned}$$

Of course it is always true that $(N) = (A) + (a) = (B) + (b)$, so that two of these data are redundant. For instance, if (A), (a) and (B) are given, (N) can be obtained by adding $(A) + (a)$; and (b) by finding the difference $(N) - (B)$. The above data are not sufficient to enable one to draw any conclusion as to the association of Canadians and red hair. For that we must know either how many Canadians have red hair—that is, the class-frequency (AB), or the class-frequency (A b), or some other associated class-frequency such as (a b).

Whenever two attributes are being investigated, 2^2 or 4 independent class-frequencies must be given in order that a valid conclusion may be drawn. It is well to remember that if n attributes are under consideration, valid conclusions as to their association can only be drawn when 2^n independent class-frequencies have been given. This point, if remembered, will prevent much waste of time in reading so-called statistical evidence which does not give the required number of independent class-frequencies.

To return to our original problem, whether there is any association between the attributes of red hair and Canadians, we must have 4 independent data. Suppose that they are—

$$(N) = 12,000, (A) = 11,880, (B) = 100, (AB) = 99.$$

From these data we can at once deduce the other five class-frequencies that are implicitly involved in these data; for the class (A), for instance, is composed of those that have red hair (AB) and of those that have not red hair (Ab), so $(A) = (AB) + (Ab)$, and similarly $(B) = (AB) + (aB)$.

All the nine class-frequencies can be arranged in a table like the following, where the attributes are placed above and on the left side, and the unassociated classes are denoted by their appropriate symbols in brackets.

	A	a	
B	99	1	(B)
b	11,781	119	(b)
	11,880	120	(N)
	(A)	(a)	

Now in order to determine the association, if any, that exists between Canadians and red hair, we must compare the proportion of the Canadians among those with red hair with that of the Canadians among those who have not red hair. Thus:

$$\frac{(AB)}{(B)} : \frac{(Ab)}{(b)}, \text{ or } \frac{99}{100} : \frac{11,781}{11,900}, \text{ i.e., } \frac{99}{100} : \frac{99}{100}.$$

Or we may compare the proportion of those with red hair among the Canadians with that of those with red hair among the non-Canadians:

$$\text{i.e., } \frac{(AB)}{(A)} : \frac{(aB)}{(a)}, \text{ or } \frac{99}{11,880} : \frac{1}{120}, \text{ i.e., } \frac{1}{120} : \frac{1}{120}.$$

Now whenever the ratios are equal (as in both the above examples) we may justly draw the conclusion that the attributes are entirely independent of each other in the assemblage considered.

It should be noted that the actual value of the ratio $\frac{(AB)}{(A)}$ or $\frac{(aB)}{(a)}$ alone gives no information; it must always be compared with its appropriate contrary ratio.

Further, whenever $\frac{(AB)}{(A)} = \frac{(aB)}{(a)}$, it will also equal $\frac{(B)}{(N)}$. In the above case each of the first two ratios equals $\frac{1}{120}$ and $\frac{(B)}{(N)} = \frac{100}{12,000}$; and similarly when $\frac{(AB)}{(B)} = \frac{(Ab)}{(b)}$, each of them will also be equal to $\frac{(A)}{(N)}$. Hence it will

save some arithmetical work if the ratios $\frac{(AB)}{(A)}$ and $\frac{(B)}{(N)}$ or $\frac{(AB)}{(B)}$ and $\frac{(A)}{(N)}$ are first compared; if they are found equal, the two attributes are quite independent.

The legitimacy of this short cut can be shown by very simple algebra.

$$\text{Let } \frac{a}{b} = \frac{c}{d} = k; \text{ then } k = \frac{k(b+d)}{b+d} = \frac{a+c}{b+d}.$$

$$\text{If } \frac{(AB)}{(A)} = \frac{(aB)}{(a)}, \text{ each will be equal to } \frac{(AB) + (aB)}{(A) + (a)} \text{ or } \frac{(B)}{(N)}.$$

It is most important to realize that no conclusion whatever can be drawn as to the relation between A and B, if only (A), (B) and (AB) are given; the total number of observations must be also given, or be determinable from other data. This will be clear after studying the following examples, in which (A) = 40 deaf persons, (B) = 50 blind, and (AB) = 2 who are both deaf and blind. The number

(N) will be different in each example, and it will be found that the relation, or association, of deafness to blindness is different in each instance.

(1) Let (N) = 1000. Then

$$\frac{(AB)}{(A)} = \frac{2}{40} = 0.05, \text{ and } \frac{(B)}{(N)} = \frac{50}{1000} = 0.05.$$

As the two ratios are equal, it is unnecessary to examine it further; we can at once draw the conclusion that in this assemblage blindness and deafness are quite independent of each other.

(2) Now let (N) = 10,000. Then

$$\frac{(AB)}{(A)} = \frac{2}{40} \text{ or } 0.05, \text{ and } \frac{(B)}{(N)} = \frac{50}{10,000} \text{ or } 0.005.$$

This means that the proportion of the blind among the deaf in this assemblage is greater than the proportion of the blind among the whole population. In every case in which the ratios are unequal it is advisable to examine the relation more carefully—in this case to examine the ratio between the blind among the deaf, and that between the blind among those who are not deaf. In this way a more accurate degree of the association is obtained. We may make out a table as before:

	A	a	
B	2	48	(B)
b	38	9,912	(b)
	40	9,960	(N)
	(A)	(a)	

We see then that the proportion of the blind among the deaf is $\frac{(AB)}{(A)}$ or 0.05, but the proportion of the blind among those who are not deaf is $\frac{(aB)}{(a)} = \frac{48}{9,960}$ or 0.004819. In fact, among the deaf 5 per cent. are blind, while among the not-deaf less than 0.482 per cent. are blind.

Several methods have been suggested to define the measure of association. The following seems to me the simplest: When the ratios are equal the attributes are independent of each other, i.e., when the difference between the ratios is 0, there is no association. If now we multiply each ratio by the reciprocal R of the greater ratio, we shall not alter the relation of the ratios to each other, and the value of the greater ratio will become 1. If the association between the A's and B's be complete, there will be no B's among the not-A's, or $(aB) = 0$.

Consequently, $R \frac{(AB)}{(A)} : R \frac{(aB)}{(a)} = 1 : 0$, and the difference $1 - 0$, or 1 will denote complete association. When $R \frac{(aB)}{(a)}$ is a decimal, $1 -$ this decimal will be the measure of the incomplete association. For instance, in this case $\frac{(AB)}{(A)} : \frac{(aB)}{(a)} = 0.05 : 0.00482$ say; on multiplying both ratios by 20 and taking their difference we get $1 - 0.0964$ or 0.9036 as the measure of the association.

However, those who have devoted their lives to the study of statistics have not agreed as to the best method of denoting the degree of association, so I merely offer this as a tentative suggestion.

We conclude that in this district there is a definitely strong association between blindness and deafness. On what this association depends may be the subject of a further inquiry. Deafness alone cannot cause blindness; there must be some other factor, which has not been noted in the tables given us, that is the cause of both conditions. It may, for instance, be that there are some steel works in the district, and that the observed association is due to the fact that some have become deaf from the attendant noise, while others have lost their sight from accidents in these works, or syphilis may be prevalent in this district.

(3) Now let (N) = 100. Let us suppose that in the annual report of an eye and ear hospital it is stated that there are 100 in-patients, of whom 40 are deaf, 50 blind, and 2 are both deaf and blind.

$$\text{Here as before } \frac{(AB)}{(A)} = 0.05 \text{ but } \frac{(B)}{(N)} = 0.5.$$

The ratio of the blind among the deaf is consequently less than that of the blind to all the inmates of the

hospital. On scrutinizing the data as $(aB) = (B) - (AB)$ or $50 - 2 = 48$, and $(a) = (N) - (A)$ or $100 - 40 = 60$, we have $\frac{(aB)}{(a)} = \frac{48}{60} = 0.8$. So $\frac{(AB)}{(A)} \cdot \frac{(aB)}{(a)} = 0.05 : 0.8$.

The proportion, therefore, of the blind among the deaf is 5 per cent., while that of the blind among the not-deaf is 80 per cent. The ratio of the two is $0.0625 : 1$. To determine the measure of association by the proposed method we must remember that we are measuring the association of blindness and deafness, so we must find the value of $0.0625 - 1$, which gives the negative decimal -0.9375 , showing that there is a strong negative association, or a disassociation, between blindness and deafness in this assemblage.

A contentious director, if he were totally ignorant of medical etiquette, might say that "As blindness in this hospital protects from deafness, and deafness from blindness, it is obvious that the ophthalmic surgeon is a very good aurist but very inefficient at eyework, and vice versa"; and he might then move that the aurist and the ophthalmic surgeon should exchange their offices.

All aspersions on these worthy men would be removed if it were pointed out that an analogous instance occurred in the adjoining general hospital, where there were 10 cases of fractures and 20 cases of tonsillitis, and no patient suffered from both these affections. The last speaker would perhaps wish that the eminent surgeon and the no less distinguished physician should exchange their parts, on the ground that the surgeon was excellent at curing throats (which he had never seen) but no good for broken bones.

The above will give the reader some idea of the pitfalls that lie in a hasty generalization from statistical tables, unless great care is taken to consider the assemblage from which the tables are drawn. It must always be remembered that hospitals are artificial assemblages: for example, the patients of lock hospitals all suffer (it may be in very different ways) from one cause; whilst those of general hospitals suffer from causes that have little if any association with each other.

To avoid the peculiarities of special assemblages one may naturally turn to the census returns of the United Kingdom, but unfortunately these are useless for most medical purposes, for example, to determine the value of a certain course of treatment, for they do not give all the data required.

I have before me a paper written by an antivaccinationist; the statistics given are analogous to my first example: "99 per cent. of those who had red hair were Canadians." In no instance are we told the number (N) of the assemblage under consideration, we are frequently told the number (VS) of those who had been vaccinated that got small-pox, but never the number (vS) of those that had not been vaccinated that suffered from small-pox, and never the number of the vaccinated (V) or that of the unvaccinated (v) in a district. In 1887 we are told that in the neighbourhood of Sheffield "on they went, vaccinating and revaccinating, and still the small-pox epidemic spread. There were no less than 7,000 cases of small-pox, and alas! 600 deaths, and still the small-pox went on."

This is mere rant. What proportion of the 7,000 cases had been vaccinated? But even if this were given we could draw no conclusion as to the value, or want of value, of vaccination, unless we were given (N), (V) and (VS), as well as the (S) which is given as 7,000. If it is desired to consider the association of vaccination, small-pox, and fatal cases of small-pox, 8 class-frequencies must be given before any conclusion as to the value of vaccination could be drawn with reference to small-pox and its fatalities.

Statistics can be wielded effectively only by those who have taken the trouble to learn how to use them. In order to draw a conclusion about the association of two attributes A and B, it is necessary to compare the proportion, or the percentage, of the B's among the A's with that of the B's among the not-A's, or $\frac{(AB)}{(A)} \cdot \frac{(aB)}{(a)}$.

It is useless to compare the percentage of the B's among the A's with that of the not-B's among the A's, as is not unfrequently done by company promoters and antivaccinationists. If $\frac{(AB)}{(A)}$ and $\frac{(aB)}{(A)}$ are compared, it is clear that the canon about the independence of the four class-frequencies has not been obeyed, for $(A) = (AB) + (aB)$;

so only two independent class-frequencies have been given.

Enough has been said to guard the reader from being misled by conclusions drawn from insufficient statistical data.

REMARKS ON THE PATHOGENESIS OF DEFICIENCY DISEASES AND ON PELLAGRA.

BY

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HAVING seen the interesting report by Colonel McCarrison (of the Pasteur Institute of Southern India) on the changes in the organs of pigeons fed on polished rice and suffering from polyneuritis, I wish to call the attention of those interested in this very important group of researches to some results which I obtained several years ago when working on other forms of deficiency diseases; they were published in the summer of 1915, in the Italian review *Sperimentale*, but remained completely unnoticed.

After working for some years subsequent to 1911 on the pathogenesis of pellagra, this problem (at that time less known than now) was carefully examined by me from several points of view. In consequence I was unable to uphold the photodynamic theory of Raubitschek, because I found that the exposure to light of white mice fed on maize neither shortened their life nor did them more harm than maize feeding in the dark.¹ I could not find any precipitins in the serum of pellagra patients (for maize extracts or maize protein) as some had asserted, nor could I demonstrate any positive complement fixation between serums of pellagra patients and maize extracts.²

Other researches were directed towards the study of general and local reactions of pellagra patients to the injection of maize extracts under the skin. There was some positive expression of hypersensibility, owing, perhaps, to sensitization of those pellagra patients living on maize meal to maize proteins, through the intestinal tract. My countryman Volpino has worked much on the hypersensibility reactions of pellagra patients to maize extracts.³

Without reviewing further my former experimental work, I may say that later on I adopted the conclusion, which was rapidly gaining favour, that notwithstanding new theories on the infectious nature of the disease (I am thinking chiefly of Sambon's Simulium theory), pellagra must be regarded as a deficiency disease, and that the problem of its etiology ought to be studied as far as possible according to the new methods developed chiefly by American investigators. We have not yet succeeded in finding an animal in which pellagra can develop so rapidly and typically as, for example, polyneuritis (beriberi) in fowls and pigeons. The new researches of Chittenden and Underhill⁴ seem to show that dogs can become ill with pellagrous symptoms when fed on a special diet, and a long series of investigators have studied the effects of maize feeding on rabbits, and especially on guinea-pigs. I, too, have studied the maidism of guinea-pigs from different points of view, and these are the experimental researches which I think it would be useful to resume in order to make a comparison with the interesting data of McCarrison.

It is well known that exclusive maize feeding very quickly brings about a severe pathological condition in guinea-pigs, which die in a few weeks after having lost about one-third of their weight. In the last period of their life the animals suffer from loss of hair, weakness of the legs, and diarrhoea. We know also from the work of Holst and Fröhlich,⁵ and others after them, that guinea-pigs, when fed on cereal grains alone (oats, wheat), develop a typical scurvy-like condition with lesions of bones, bone-marrow, teeth, and blood vessels—these last occasioning a real haemorrhagic diathesis. This scurvy-like condition of guinea-pigs (which is most quickly produced by oat feeding) was considered by Fröhlich, Holst, Funk,⁶ and most scientists to be the result of lack of accessory food factors or vitamins. The features of the experimental diseases were compared to those of the scurvy of men, and chiefly to Barlow's disease. Recently

McCullum and his co-workers have denied the existence of antiscorbutic vitamins, and have shown that there are only two accessory growth-promoting and life-maintaining factors, one water-soluble A and the other fat-soluble B. Now⁷ the scorbutic condition of guinea-pigs fed on oats would be due less to a lack of accessory factors in the diet—that is, to a chemical deficiency of it—than to a physical character of the cereal grains leading to undue retention and putrefaction of faeces in the enlarged caecum of the animals and thereby to intoxication, with changes in the walls of the vessels and perhaps secondary infections by special bacteria, like those described in the lesions of bones and in the blood by Jackson and Moody.⁸ Nevertheless, McCullum, N. Simmonds, and Pitz point to deficiency of factor A in all cereal grains and also in oat kernel.⁹ And although they do not recognize scurvy as an avitaminosis, we can still admit that qualitative deficiency of proteins, lack or deficiency of certain accessory factors (chiefly fat-soluble), and of salts play a rôle in the inadequacy of cereal grains when given alone to support the life of animals, with or without other chemical disturbances (acidosis),¹⁰ or with physical conditions of the food (McCullum).

Now I worked in 1913–14 on the effects of maize feeding on guinea-pigs, and published in the *Ricerche di biologia* (Società tipografica fiorentina, 1914) a short report followed by a long paper in the *Sperimentale* (1915, fasc. 4).¹¹ I at first tried to show the differences between the more typical scurvy (oat feeding) and the conditions produced by feeding on maize, which is the cereal more related to the etiology of pellagra; also between these two pathological conditions and simple starvation (by complete suppression of food). Like McCarrison I measured the weights of some organs and found the following relative numbers (weight of the organ in proportion to the body weight at death = 100), which of course are average results for many individuals in each group.

	Liver.	Spleen.	Suprarenal Glands.			
			Male.	Female.	Pregnant Female.	Average
Starving guinea-pigs...	3.20 %	0.10 %	—	—	—	0.18 %
Oat-fed guinea-pigs ...	3.76 %	0.10 %	0.22 %	0.47 %	0.33 %	0.27 %
Maize-fed guinea-pigs	3.90 %	0.14 %	0.20 %	0.24 %	—	0.22 %
Normal guinea-pigs ..	3.82 %	0.12 %	0.10 %	0.12 %	0.14 %	0.12 %

This in all these conditions the adrenal glands are enlarged, principally in oat-eating and maize-eating guinea-pigs. The loss of body weight is only one-third, while the relative weight of the adrenals is about doubled.

The spleen was reduced in weight, chiefly in the oat-eating and in the starving animals, and some evidence was found of an atrophic condition of this organ, as McCarrison has seen in his pigeons.

My histological observations can be summarized as follows:

The organs which are the most affected in guinea-pigs fed on maize are the spleen, the thyroid, and the suprarenal glands. The spleen shows sclerotic lesions with increase of elastic and fibrous tissue and reduction of lymphocytes in the folliculi. The thyroid shows, in the first days of maize diet, hyperaemia and often proliferation of alveolar epithelium, then haemorrhagic changes and later on sclerosis are prominent.

These changes, as far as I know, have not been observed before, but they may be compared with those remarked by some observers in the thyroid of starving animals or of animals fed on other special diets. The suprarenal glands show hyperaemia, enlargement of minute vessels, degenerative changes in the cortical cells with disappearance of the normal lipoids (Sudan III coloured substances), perhaps slight proliferation in the cells of the outer cortical layer; the reticular fibres (*Gitterfasern*) become thicker, the reaction with chromium salts in the medullaris seems to be less marked. Degenerative changes were prominent in the central nervous system. By means of Nissl's method I observed signs of decay in the anterior horn cells of the spinal cord and in Purkinje cells of the cerebellum, and by Marchi's method frequent irregular fresh degeneration of all sorts of medullated fibres. The changes in the bone marrow were of the same kind, but in

a less degree than those observed by Fröhlich and Holst as the result of other cereal feeding. Less marked were the lesions of the liver (some degeneration of liver cells, some hyperaemia, some hypertrophy of Kupffer cells, sometimes perhaps proliferation of these cells), of the intestinal tract, of the kidney, and of the heart.

Guinea-pigs fed on oats had much more marked haemorrhagic lesions; the haemorrhagic diathesis seems to me to belong to the typical scorbutic condition of these animals. As already pointed out by Centanni and Galassi,¹² maize feeding brings about an attenuated scorbutic condition, but the results of my experiments show that the central nervous symptoms, fall of hair, sclerosis of spleen and thyroid, are more marked than in scurvy. As regards the effects of starvation, which were already well known, I confirm the difference from the above named unilateral diets: we have no true sclerosis of organs, lipoids disappear in a much more marked degree from the cortex of the adrenal glands, we have quite different conditions in the bone marrow (the so-called *Hungermark* of the Germans). Histologically, death from maize eating is not death from starvation, but involves deep metabolic changes, as in other real deficiency diseases and in some intoxications.

In order to study the reason of the severe injury caused to the organism by maize feeding I tried to supplement the maize meal or maize kernel with many substances. At that time the important work of McCullum was still unknown, or at least I was not acquainted with results of his which appeared later. Thus I thought first to add some protein or peptone to the maize meal in order to see whether the failure of this grain to maintain metabolism was due to deficiency of protein. The addition to the maize meal of casein (pure casein Merk), or peptone, or amino-acids, such as tyrosin and tryptophan, tried in different series of guinea-pigs, produced no definite improvement of the diet. One year later (1916) McCullum, Simmonds, and Pitz,¹³ who worked with their usual method on growing white rats, showed that the maize protein contained all the necessary amino acids, but not all in the most favourable proportions, that at any rate the deficiency of maize could not be sufficiently made good with casein, and that the protein factor had not the paramount importance for rats that it seemed to have for other animals. Hogan,¹⁴ too, has seen that for rats the first limiting factor in the maize diet is the lack of salts, but that the deficiency of the proteins of maize is, on the whole, less important. I did not take into consideration the salts, but I had already written that the protein deficiency of maize does not seem to have any great importance for guinea-pigs in the development of maldism,¹⁵ and Hogan's experiment of supplementing maize with casein had been made by me on guinea-pigs with the same negative results. Hogan says that for pigs things are on a different basis; protein is here the first limiting factor, as Passerini had already demonstrated in very accurate experiments, which were, of course, unknown to the Americans.¹⁶ I tried further to supplement maize with green food, as Holst and Fröhlich had shown that green vegetables prevent the development of scurvy. I repeated these experiments on guinea-pigs suffering from the pathological condition which arises from exclusive maize feeding, and seems to me (see above) to differ from typical scurvy (from oat and wheat feeding). I found that a quantity as small as 10 grams a day of fresh cabbage produced in every animal a remarkable corrective action. Animals eating maize meal alone (and water) die after an average period of eighteen days (there are great individual differences, some animals living only a few days, others weeks); animals eating maize meal *plus* 10 grams of cabbage died after twenty-five days, and showed loss of weight only in the last days. A few months after the publication of my results in the *Sperimentale* (1915, July-August), I read¹⁷ that Sandwith had confirmed this supplementing value of fresh cabbage for maize eating guinea-pigs. He stated that even smaller quantities of green food were active in this direction. As I had seen that the protein factor was not of much value, and besides this, that the protein content of the active quantities of cabbage was very low, I thought that perhaps there might be in cabbage some accessory factor of unknown composition, some lipid-bound substance (I had in mind the results of Stepp¹⁸), or some vitamin-like principle; accordingly I tried to test the action of alcoholic extracts of cabbage

with positive results of a prolongation of the average life of maize-meal-eating guinea-pigs. In the light of the new ideas of McCollum I venture to say that with my alcoholic extracts (made with acidulated alcohol at 37°) I partly supplemented the fat-soluble factor A, which is certainly lacking in all cereal grains and in maize meal too, and is abundant in all leaves. Lately, Osborne and Mendel¹³ have found in cabbage a lack of water-soluble vitamin B, and therefore in alcoholic extract we may assume that factor A is present.

I tried also to supplement maize meal with alcoholic extract of maize bran, but to no purpose; this again shows that the active substance of alcoholic extracts of cabbage leaves is something which is present neither in maize meal nor in maize bran—that is, something lacking in the whole cereal grain, in the endosperm as well as in the aleuronic layer and embryo; this is the case with factor A, while factor B must be present in good bran with much of the outer layers and embryos of the seed.

I can also state that alcoholic extracts of liver (fresh liver of healthy guinea-pigs) prolonged the life of maize-meal-eating guinea-pigs a little; the active substance was present in animal organs too. This may perhaps be compared with the experiments of Osborne and Mendel, who found the liver, heart, and kidney (of pigs) very rich in growth-promoting vitamin for rats,²⁰ and of Eddy, who isolated a growth-promoting substance from sheep's pancreas. Thus I came to the conclusion that in animal organs and in the green parts of plants there must be some alcohol-soluble body which diminishes the harmful action of maize diet on guinea-pigs; but with the means at my disposal I could go no further in my analysis.

It is well to remember, too, that I found a diminution of adrenalin in the suprarenal glands of maize-eating animals, using the biological method of Fraenkel (action of suprarenal glands ground up and suspended in saline solution on the uterus of virgin rabbits, and registration of the contraction of the muscular organ); contrary to the results of experiments by McCarrison on pigeons fed on polished rice, pointing to an increase of adrenalin. The difference may be attributed to the different conditions of experimental work and of diet and to the zoological remoteness of the animals used. My work on the etiology of pellagra did not produce conclusive results, but it has established certain facts which may be important in the etiology and pathogenesis of maidism in guinea-pigs and of pellagra in man. I do not assume the identity of these two conditions; the differences are obvious, but there are some resemblances too. It is a fact that maidism is an experimental deficiency disease due to the lack in maize of the elements necessary to maintain animals. McCollum, Simmonds, and Parsons²¹ do not look upon pellagra as a real avitaminosis in the sense used by Funk and do not recognize a pellagra vitamin, but still they maintain that the experimental symptom-complex obtained by Chittenden and Underhill in dogs is to be attributed to protein factors, partly to lack of factor A and of salts. For the maidism of guinea-pigs we may still admit a complicated deficiency of maize meal, and we may state that green vegetables and fresh animal organs contain corrective substances. Maidism, at any rate, has features which I think separate it from simple starvation and from typical scurvy.

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- ¹ *Sperimentale*, 1911, fasc. 3, quoted also by Funk, *Die Vitamine*, p. 110. ² *Sperimentale*, 1911, fasc. 3. ³ See author's paper in *Sperimentale*, 1912, fasc. 5. ⁴ *Amer. Journ. Physiol.*, xlv, 13, 1917. ⁵ *Zeit. f. Hygiene u. Infektionskrankheiten*, Bd. 72, Heft 1, 1912. ⁶ *Die Vitamine*, Wiesbaden, 1914. ⁷ McCollum and Pittz, *Journ. of Biol. Chem.*, vol. xxxi, July, 1917. ⁸ *Journ. of Infect. Dis.*, vol. xix, 1916. ⁹ *Journ. of Biol. Chem.*, vol. xxix, No. 2, 1917. ¹⁰ Morgen and Beger, quoted by Funk, *Journ. of Biol. Chem.*, vol. xxv, No. 3, 1916; Baglioni, *Bullettino R. Accad. Med.*, Roma, anno xii, fasc. 5-6, 1915. ¹¹ Rondoni and Montanari, *Lesioni istologiche nel maidismo nel digiuno e nello scorbutto sperimentale*, and Rondoni, *Ricerche sperimentale sulla alimentazione maldica con speciale riguardo alla eziologia della pellagra*. ¹² *Sperimentale*, 1915, Suppl., fasc. 4. ¹³ *Journ. of Biol. Chem.*, vol. xxviii, No. 1, 1916. ¹⁴ *Ibid.*, vols. xxvii and xxix, 1916, 1917. ¹⁵ *Sperimentale*, 1915, pp. 755, 790. ¹⁶ Passerini, *Atti R. Accademia dei Georgofili*, Firenze, Serie V, vol. xi, 1914. ¹⁷ *Lancet*, October 22nd, 1915. ¹⁸ *Deut. med. Woch.*, 1914, No. 18. ¹⁹ *Journ. of Biol. Chem.*, vol. xxxvii, No. 1, 1919. ²⁰ *Ibid.*, vol. xxxiv, No. 1, 1917. ²¹ *Ibid.*, March, 1918.

At the commencement exercises of the New York University and Bellevue Hospital Medical College it was announced that the institution would in future admit women and would grant them the degree of M.D. on the same terms as men.

A Collective Investigation

OF

TEN THOUSAND RECRUITS WITH DOUBTFUL
HEART CONDITIONS.

Conducted at the National Hospital for Diseases of the Heart by C. CHAPMAN GIBBES, R. O. MOON, S. RUSSELL WELLS, P. HAMILL, FREDERICK W. PRICE, and J. STRICKLAND GOODALL.

REPORT III.*

COMPILED BY

S. RUSSELL WELLS, M.D., B.Sc.

THE ETIOLOGY OF AORTIC REGURGITATION.

Syphilis.

Of the 307 cases 11 gave a history of syphilis, but in no less than 7 of these there was a definite history of rheumatic fever, and of the remaining 4, the first, a carman aged 39, had had a fever of a doubtful nature which may have been acute rheumatism, and presented definite signs of mitral stenosis and regurgitation as well as of aortic regurgitation; his syphilis had been acquired six years before examination. The second was a man of 30 years of age, who said he had had rheumatism, which he described as "muscular," but which laid him up for three months when he was 28; as, however, he stated he had had gonorrhoea no less than eight times, the true rheumatic nature of the affection must at least be regarded as doubtful, probably it was gonorrhoeal rheumatism. The third, aged 34, gave no history of illness beyond his syphilis five years ago, except scarlet fever; he showed signs of mitral regurgitation which was probably secondary, as he had albumin in his urine and other signs of failing circulation. The fourth, a man of 30, gave no history of any illness other than syphilis four years ago except tonsillitis eight years before, and influenza. He was classified as pure aortic regurgitation. Thus, out of the 11 cases, in 4 at the most, that is 36.4 per cent., and possibly in only 3 (27.3 per cent.), can syphilis alone be credited with being the cause of the aortic regurgitation.

TABLE XIII.—Comparing all the Cases of Aortic Regurgitation dealt with, with those giving a Syphilitic History.

	No. of Cases	With Rh. Fever.	With Rh., G. P., or Ch	Without Rh. History
Total Ao. R.	307	162=52.8%	73=23.8%	72=23.4%
Ao. R. and syphilis	11	7=63.6%	1=9.1%	3=27.3%

Making due allowance for the small numbers involved in the case of syphilis, the percentages are very similar. This suggests that the coincidence of syphilis and aortic regurgitation in the three or four cases where there was no definite history of rheumatic fever may be fortuitous. It may be objected that we are dependent in these cases upon the man's word alone for a history of syphilis, and that frequently its presence has been concealed. No doubt it would have been better, had it been possible, to have determined the Wassermann reaction in every case. This, of course, was impracticable, but, as has been pointed out in a previous report, by reason of the exceptional circumstances of these examinations there was far less likelihood of concealment than usual. Moreover, the results quite confirm the impressions gained on taking the Wassermann reaction of a series of hospital out-patients suffering from aortic regurgitation.

Ratio of Pure to Mixed Lesions.—We may record, for what it is worth, the fact that the proportion of pure aortic to mixed lesions is higher in the syphilitic cases than in the total aortic regurgitants with a history of rheumatic fever—that is, 1.2 as against 0.76. Of the syphilitic cases without a definite history of rheumatic fever 2 were pure aortic and 2 mixed lesions. Very little importance can be attached to these figures, as the number of syphilitic cases is too small.

It will be seen that the investigation of these cases leads to the conclusion that syphilis is not of much importance as a cause of aortic regurgitation in the case of men

* Concluded from p. 534.

between the ages of 18 and 41—first, because only 3.6 per cent. of the cases with aortic regurgitation gave any history of syphilis, and secondly, because of this 3.6 per cent. 63.6 per cent. gave a history of rheumatic fever—a figure quite comparable with the percentage of total aortic regurgitants giving a like history.

Gonorrhoea.

In 16 cases out of the 307 there was a history of one or more attacks of gonorrhoea. In 10 of the 16 cases there was a definite history of rheumatic fever, 4 gave histories of rheumatism, one being the doubtful one referred to above under syphilis; another, a labourer aged 40, stated that he had been in hospital twice as a child, at an interval of about two years, for rheumatism, but his statements were too vague for these illnesses to be classified definitely as rheumatic fever; in the third there was no history of the man being confined to bed with his joint pains; the fourth gave a history of rheumatic attack lasting six weeks. Two cases gave a history of gonorrhoea and none of rheumatism; one of these, a mechanic aged 29, had resided in the Philippine Islands, and had had scarlet fever at 5 and dengue at 28; he had thickened and tortuous arteries, and was a case of pure aortic incompetence; the other, a cobbler aged 37, gave no history of any other illness, except pneumonia a year before—he was classified as aortic regurgitation and mitral regurgitation, the latter being probably secondary.

Hence, in 10 of these cases rheumatic fever may safely be said to have occurred, and there is a possibility of rheumatism in at least three and possibly four more; that is to say, 81 per cent. gave a history of rheumatic fever and its allies, and only 19 per cent. that of gonorrhoea apart from rheumatism; or, if we count the doubtful case as rheumatism, 87.5 per cent. and 12.5 per cent. respectively.

TABLE XIV.—Gonorrhoea.

	No. of Cases.	With Rh. Fever.	With R. Rh. Fever.	Without Rh. History
Total Ao. R. ...	307	163=52.8%	73=23.8%	72=23.4%
Ao. R. and gonorrhoea	16	10=62.5%	4=25.0%	2=12.5%

Ratio of Pure to Mixed Lesions.—Seven showed evidence of lesions of the aortic valves alone, while in 9 there was mitral involvement as well. This is a ratio of 0.7, which is practically the same as the 0.76 found for the 162 cases with a history of rheumatic fever. Of the 6 cases of gonorrhoea without a history of rheumatic fever, 3 were pure aortic lesions and 3 mixed, a ratio of 1, so there is a slight preponderance of pure aortic lesions here as in the case of syphilis, but the numbers are too small for any argument to be based upon them.

The analysis of these cases afforded little or no support to the view that gonorrhoea is an efficient cause of aortic regurgitation.

As Table XV shows, whether we consider as having a rheumatic history only those cases with a definite history of rheumatic fever, or whether we take as rheumatic those giving a history of either rheumatic fever, "rheumatism," growing pains, or chorea, the proportion showing a history of rheumatism is so large that we may neglect tonsillitis, scarlet fever, diphtheria, pneumonia, influenza, syphilis, and gonorrhoea as important causes of aortic regurgitation.

TABLE XV.—The Importance of Rheumatic Affection.

	Percentage with History of Rh. F.	Percentage with History of R., G.P., C.	Percentage with History of R.F., R., G.P., C.	Percentage without any rheumatic History.
Total Ao. R. ...	52.8	23.8	76.6	23.4
Ao. R. and tonsillitis ...	66.6	11.7	78.3	21.7
.. and scarlet fever ...	63.4	18.3	81.7	18.3
.. and diphtheria ..	68.2	22.7	90.9	9.1
.. and pneumonia ..	60.0	10.0	70.0	30.0
.. and influenza ...	57.7	21.8	79.5	20.5
.. and syphilis ...	63.6	9.1	72.7	27.3
.. and gonorrhoea .	62.5	25.0	87.5	12.5

With regard to the relation of pure to mixed lesions in the different affections, the following table shows that in the case of "rheumatism," chorea, tonsillitis, scarlet fever, pneumonia, and influenza, there is a tendency for cases giving these histories to show a preponderance of mixed lesions as compared with pure aortic lesions. This preponderance is due to many of these cases exhibiting an apical systolic murmur as well as the murmurs associated with aortic trouble, and rather suggests that while none of these diseases are answerable for damage to the aortic valves, it is possible that they may have some relation to the production of the apical systolic murmur. The numbers are, however, small, and we do not wish at the present stage to draw any definite deductions from them.

TABLE XVI.—Ratio of Pure Aortic to Mixed Lesions.

	Total.	Pure to Mixed Lesions.	Ratio.
Rheumatic fever ...	162	70 : 92	0.76
"Rheumatism" without R.F. ...	38	14 : 24	0.58
Growing pains ...	36	15 : 21	0.71
Chorea ...	10	3 : 7	0.43
Tonsillitis ...	20	6 : 14	0.43
Scarlet fever ...	26	8 : 18	0.4
Diphtheria ...	7	4 : 3	1.3
Pneumonia ...	6	2 : 4	0.5
Influenza ...	60	21 : 39	0.5
Syphilis ...	4	2 : 2	1.0
Gonorrhoea ...	6	3 : 3	1.0

Since the number of cases of aortic regurgitation with a history of rheumatic fever bear so large a proportion to the total number of aortic regurgitants, it is obvious that they may swamp the other causes in calculating the correlation. It was therefore thought wise to calculate the coefficients of correlation in a universe of discourse from which a history of rheumatic fever had been excluded. Of our 10,000 cases, 1,921 gave a history of rheumatic fever, and of our aortic regurgitants 162 gave a like history. This gives us a universe of 8,079 cases, 145 of which showed signs and symptoms of aortic regurgitation.

TABLE XVII.—Showing the Correlation between Aortic Regurgitation and the Various Suggested Etiological Factors, with the Numbers on which the Calculations are Based.

A.	B.	Number of Cases.				Coefficient of Correlation.	Limit of Error.	χ^2 .
		History of A. and B.	History of A. only.	History of B. only.	No History of A. or B.			
A. R.	"Rheumatism"	38	107	1,309	6,625	0.175	0.022	9.66
..	Growing pains	36	109	2,050	5,884	0.018	0.022	0.076
..	Chorea	10	135	154	7,780	0.203	0.021	17.58
..	Tonsillitis	20	125	1,665	6,269	0.165	0.021	4.46
..	Scarlet fever	26	119	1,680	6,254	0.067	0.022	0.899
..	Diphtheria	7	138	551	7,383	0.085	0.022	0.992
..	Pneumonia	8	137	432	7,502	0.002	0.022	0.001
..	Influenza	60	85	4,349	3,585	0.210	0.021	10.36
..	Syphilis	4	141	141	7,793	0.065	0.022	0.778
..	Gonorrhoea	6	139	436	7,498	0.060	0.022	0.507
..	Strain	84	61	2,269	5,665	0.433	0.018	59.35

A. = Aortic regurgitation. B. = Etiological factor under consideration—for example, rheumatic fever, chorea, or the like.

An inspection of Table XVII shows that on account of the low values of χ^2 in the other cases, the only correlation coefficients worthy of consideration are those for "rheumatism," chorea, influenza, and strain. In the cases of influenza, chorea, and "rheumatism" the correlation is low, but there is moderate correlation between

aortic regurgitation and strain. It is not a little remarkable that while the correlation between rheumatic fever and aortic regurgitation is 0.499 ± 0.015 , if rheumatic fever is excluded, the correlation coefficient between aortic regurgitation and strain should be as high as 0.433 ± 0.018 while χ^2 is 59.35.

Age Incidence of Aortic Regurgitation.

It is generally considered that the incidence of aortic regurgitation increases with advancing years. The material with which this investigation is concerned being limited roughly to the years between 16 and 41 does not afford an opportunity for investigating those changes which occur in the latter stages of middle life and in old age. Still, it may be of some interest to tabulate the age incidence in that portion of life with which we are concerned.

TABLE XVIII.—Comparing, with Grouping in Quinquennial Periods, the Total Number of Recruits Examined, with the Total Number of Aortic Regurgitants found in each Quinquennium, omitting Cases below 17 and over 41 years of age.

	17-21	22-26	27-31	32-36	37-41
Total recruits examined ...	2103	203	2307	2114	1413
Aortic regurgitants ...	72	62	75	57	38

Since the number of cases examined in the different quinquennial periods was different, the percentages of the total aortic regurgitants in any quinquennium does not give a true estimate of the age incidence. For instance, 75 of the total 307 cases occurred in the quinquennium 27-31, while only 38 were seen whose ages were between 37-41. This great difference is, however, accidental, because 2,307 of the total 10,000 cases occurred in the quinquennium 27-31, and only 1,413 in the quinquennium 37-41. It is therefore obvious that the numbers in any period must be contrasted with the total number of cases examined belonging to that period rather than with the total of the particular lesion. Table XIX gives such a comparison:

TABLE XIX.

	Total Recruits Examined.	Total Aortic Regurgitants.	Ao. R. with no History suggestive of Rheumatism.
Ages 17 to 21 ...	2103	72=3.4%	17=0.8%
Ages 22 to 26 ...	2023	62=3.1%	12=0.6%
Ages 27 to 31 ...	2307	75=3.3%	16=0.7%
Ages 32 to 36 ...	2114	57=2.7%	16=0.7%
Ages 37 to 41 ...	1413	38=2.7%	10=0.7%

It will be noted that there is on the whole a decline in the incidence of aortic regurgitation between the years 17-41. This strongly suggests a cause, or causes, acting early in life, which either cease before middle life is approached or have a steadily decreasing incidence with advancing years. Rheumatic fever suggests itself as one such cause, for it is generally admitted that the incidence of rheumatic fever declines as middle life is approached, and an examination of the detailed analysis confirms this, as the decline in incidence applies to the cases giving a rheumatic history rather than to those without any history of rheumatism.

Cause in Cases without a History of Rheumatism.

The question now arises, what was the causal agent in the 72 cases where there was no history of rheumatism? It is possible that these men may have had rheumatism, which, because it occurred early in life, they may have forgotten, or which was not recognized because it was so slight. Before reaching such a conclusion, every other suggested cause should, so far as possible, be eliminated, and, since physical strain, alcohol, and tobacco have been regarded as such causes, it was thought well to investigate the occupations and habits of these cases of aortic regurgitation.

Since it is safer to base our conclusions on cases with definite histories, we shall divide the 307 into three groups:

- I. 162 with definite history of rheumatic fever.
- II. 73 with history of "rheumatism," growing pains, or chorea, where the rheumatic origin of the aortic regurgitation must be considered doubtful.
- III. 72 cases where there was no rheumatic history.

Alcohol and Tobacco.—A careful scrutiny of the histories as to tobacco and alcohol fails to reveal even a suggestion of any connexion between excess in these stimulants and aortic regurgitation. The results as to strain, however, were far more fruitful.

Strain.—Arranging the cases of aortic regurgitation according to their occupations alone, we find that 158 were in employments involving light muscular labour, 100 in the medium and 49 in the heavy groups.

TABLE XX.—Giving a Comparison between the Percentages in each Occupational Group of the Aortic Regurgitants with the Total 10,000 Recruits examined.

	Occupations.		
	Light.	Medium.	Heavy.
10,000 recruits ...	58.0 %	26.5 %	15.5 %
Total Ao.R. ...	51.5 %	32.5 %	16.0 %

This shows no striking difference between the distribution of occupations in the total number of recruits and that in the aortic regurgitants, beyond, possibly, a tendency in favour of medium labour rather than light. When, however, we divide the aortic regurgitants into groups according to their history of previous illness, more interesting facts come to light.

Taking first the 162 cases giving a history of rheumatic fever, 91 were in light occupations, 5 in medium, and 16 in heavy.

TABLE XXI.—Comparing on a Percentage Basis the Total Rheumatic Cases and Number of Recruits seen.

	Occupations.		
	Light.	Medium.	Heavy.
10,000 recruits ...	58.0 %	26.5 %	15.5 %
Ao. R. with history of rheumatic fever	56.8 %	33.3 %	9.9 %

Here there has obviously been a drift from the heavy occupations into those entailing only medium muscular exertion.

Taking the cases with a doubtful rheumatic history—that is to say, the 73 who gave an account of previous "rheumatism," growing pains, or chorea, it was found that 33 were in light occupations, 22 in medium, and 18 in heavy.

TABLE XXII.—Percentage Comparison: Doubtful Rheumatism.

	Occupations.		
	Light.	Medium.	Heavy.
10,000 recruits ...	58.0 %	26.5 %	15.5 %
Ao.R. with "rheumatism," growing pains, or chorea	45.3 %	30.1 %	24.6 %

Here the medium and heavy employments bulk larger than in our standard of comparison. There has certainly been no drift into the lighter occupations, and the numbers even suggest that the strenuous work may have been an etiological factor.

An investigation of the 72 cases of aortic regurgitation who gave no history of either "rheumatism," growing pains, or chorea, furnishes a comparable result; 33 were in light occupations, 24 in medium, and 15 in heavy.

TABLE XXIII.—No History of Rheumatism.

	Occupations.		
	Light.	Medium.	Heavy.
10,000 recruits	58.0 %	26.5 %	15.5 %
Ao.R. without rheumatic history...	45.8 %	33.3 %	20.9 %

But while occupation is a fair guide as to the strenuousness of a man's work, according to our former definition, it cannot be properly used when discussing the incidence of strain. A man may be subjected to muscular strain either as a result of his work or his amusements. The dock labourer and the blacksmith, for instance, are obviously perpetually undertaking heavy physical exertion, but the clerk, whose business hours are passed in sedentary employment, may, in his spare time, be undertaking heavy physical work in the form of football, rowing, or other athletic exercises. As in every case the amount and character of the exercise in which the recruit was in the habit of indulging is recorded, it has been possible to tabulate these cases under the headings of light, medium, and heavy exercise, the classification depending in some cases on the man's employment, and in some on his games.

TABLE XXIV.—Aortic Regurgitants with History of Rheumatic Fever.

Lesions.	Exercise.		
	Light.	Medium.	Heavy.
Aortic regurgitation alone	28	19	9
Aortic regurgitation and aortic stenosis ...	7	5	2
Aortic and mitral regurgitation	30	11	12
Aortic and mitral regurgitation and aortic stenosis	0	2	1
Aortic regurgitation and mitral stenosis...	7	2	2
Aortic and mitral regurgitation and mitral stenosis	6	7	2
Aortic, mitral, and tricuspid regurgitation	1	0	0
Aortic regurgitation and pericarditis ...	3	2	0
Aortic and mitral regurgitation and pericarditis	1	0	0
Aortic and mitral regurgitation, mitral stenosis, and pericarditis	2	0	1
	85 52.5 %	48 29.6 %	29 17.9 %

It will be seen that 52.5 per cent. come under the heading of light, 29.6 per cent. of medium, and 17.9 per cent. of heavy exercise.

TABLE XXV.—Comparing Numbers in Table XXIV with the Percentages for Light, Medium, and Heavy Exercise for the whole 10,000 Cases examined.

	Exercise.		
	Light.	Medium.	Heavy.
10,000 recruits	50.0 %	22.9 %	27.1 %
Ao.R. with history of rheumatic fever ...	52.5 %	29.6 %	17.9 %

It will be noticed that there is a definite tendency for the aortic regurgitant who has had rheumatic fever, and whose lesion consequently is probably of rheumatic origin, to avoid both occupations and amusements which involve muscular strain.

In the case of the 72 aortic regurgitants who gave no history of any form of rheumatism the figures are strikingly different, as shown in Table XXVI. This shows 23.6 per cent. light, 11.1 per cent. medium, and 65.3 per cent. heavy muscular exercise, as compared with 52.5 per cent. light, 29.6 per cent. medium, and 17.9 per cent. heavy for the group with rheumatic fever—a difference which seems too great to be purely accidental. The fact that 65.3 per cent. of this group were exposed to

TABLE XXVI.—Aortic Regurgitation without History of Rheumatism.

Lesions.	Exercise.		
	Light.	Medium.	Heavy.
Aortic regurgitation alone	4	2	11
Aortic regurgitation and stenosis	0	0	8
Aortic and mitral regurgitation	9	6	16
Aortic and mitral regurgitation and aortic stenosis	1	5	0
Aortic regurgitation and mitral stenosis...	0	0	2
Aortic and mitral regurgitation and mitral stenosis	1	0	7
Aortic and mitral regurgitation and aortic and mitral stenosis	1	0	2
Aortic regurgitation and pericarditis ...	0	0	1
Aortic and mitral regurgitation and pericarditis	1	0	0
Total	72 23.6 %	8 11.1 %	47 65.3 %

strain, in the absence of any other likely factor, strongly suggests that strain was the efficient cause in producing the cardiac lesion. We think it is not generally realized what an extent even comparatively short and light muscular work can raise the blood pressure and so produce increased tension of the aortic valves and other parts of the circulatory system. It is true that more than half of these cases were instances of mixed lesions, but an inflammatory and subsequent sclerotic process, starting in the aortic valve, may easily spread by continuity to the aortic flap of the mitral valve, and no doubt in many of the cases of mixed aortic regurgitation and mitral regurgitation the mitral regurgitation was due to secondary dilatation of the mitral ring, without any structural change in the valve. It may therefore be conjectured that the 47 cases of aortic regurgitation subjected to heavy muscular work, but who gave no history of rheumatism, were due to strain.

In the remaining 25 the cause is not so obvious. Three out of the 72 cases without a history of rheumatic fever had a syphilitic history, which is about the proportion we should expect if this were purely accidental, since 11 out of the total of 307 gave a similar history.

A comparison of the numbers in the light, medium, and heavy classes of Group II (those with a history of "rheumatism," growing pains, or chorea) gives percentages roughly intermediate between Groups I and III—namely, 30.1 per cent. light, 19.2 per cent. medium, and 50.7 per cent. heavy.

TABLE XXVII.—Aortic Regurgitants with History of "Rheumatism," Growing Pains, or Chorea.

Lesions.	Exercise.		
	Light.	Medium.	Heavy.
Aortic regurgitation alone	8	3	10
Aortic regurgitation and stenosis	1	2	4
Aortic and mitral regurgitation	7	4	17
Aortic and mitral regurgitation and aortic stenosis	0	1	0
Aortic regurgitation and mitral stenosis	1	1	0
Aortic and mitral regurgitation and mitral stenosis	5	1	4
Aortic and mitral regurgitation and aortic and mitral stenosis	0	1	0
Aortic regurgitation and pericarditis ...	0	1	1
Aortic and mitral regurgitation, mitral stenosis, and pericarditis	0	0	1
Total	73 30.1 %	14 19.2 %	37 50.7 %

Table XXVIII, which summarizes these results, shows clearly that the more completely a history of rheumatism is eliminated, the higher among aortic regurgitants is the percentage of cases in the group exposed to severe strain.

TABLE XXVIII.—Summary.

	Strain.		
	Light.	Medium.	Heavy.
10,000 recruits ...	50.0%	22.9%	27.2%
Ac. R. with history of rheumatic fever	52.5%	29.6%	17.9%
Ac. R. with history of "rheumatism," growing pains, or chorea	30.1%	19.2%	50.7%
Ac. R. without rheumatic history	23.6%	11.1%	65.3%

This led us to suspect that in Group II (those with a history of "rheumatism," growing pains, or chorea) a certain number of cases were due to strain and the rest to rheumatism. These 73, together with the 25 in light and medium classes of Group III, thus constitute a doubtful class, distributed as follows:

TABLE XXIX.

	Exercise.		
	Light.	Medium.	Heavy.
98 Cases ...	39	22	37

We were led to try how 98 cases would be distributed on the assumption that the proportion due to rheumatism and the proportion due to strain was the same as that found in the cases we considered might legitimately be classed as due to these causes. Since 162 cases have been classified as due to rheumatism and 47 as due to strain, we divided the 98 cases in the same proportion, and allotted 76 as probably of rheumatic origin and 22 as caused by strain. Dividing the rheumatic 76 into light, medium, and heavy classes, in the same proportion as those in which our 162 rheumatic cases were found to be divided, we obtained 40 light, 22.5 medium, and 13.5 heavy; adding to the heavy group the 22 we had assumed to be caused by strain, the following figures were obtained: 40 light, 22.5 medium, and 35.5 heavy.

TABLE XXX.—Comparison between the Calculated Numbers and those Actually Found.

	Exercise.		
	Light.	Medium.	Heavy.
Calculated numbers ...	40.0	22.5	35.5
Actual cases ...	39.0	22.0	37.0

The agreement is so striking that it is hard to imagine it purely accidental.

SUMMARY.

The results of this investigation lead to the conclusion that the two important causes of aortic regurgitation in the cases we have investigated—that is to say, men between the ages of 18 and 41—were rheumatic fever and strain. We have been unable to find any definite correlation in these cases between syphilis, tonsillitis, scarlet fever, diphtheria, pneumonia, gonorrhoea, or growing pains, and the evidence is against influenza. With regard to chorea, there is a suggestion in some of the results that it may be a cause, but the number of cases with which we had to deal was so small, and the proportion of them giving a history of rheumatic fever as well so large, that caution must be exercised in drawing deductions. With regard to a history of "rheumatism," there is some evidence for supposing that in a certain proportion of these cases, but not all, an affection of the same nature as true rheumatic fever was referred to.

THE second Child Welfare Congress of South America (Congreso Americano del Niño), which was to have been held at Montevideo in December of the present year, has been postponed till May, 1920, on account of problems arising out of the war and the prevalence of influenza.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF PUERPERAL SEPTICAEMIA BY "BIPP."

For the last two years I have used long strips of gauze or bandage saturated with bipp for packing wounds and cavities, in military surgery, in many thousands of cases. I have invariably been absolutely satisfied with the results, to the exclusion of all other treatment.

I have treated two seemingly hopeless cases of puerperal septicaemia, with the most astonishing results. Both cases were, of course, first scraped and douched in the ordinary way; they were then packed with a long strip of sterilized gauze saturated in fairly liquid bipp. For the first three times the packing was removed daily, the cavity washed out and again packed. After that the pack was changed every two days. In one of the cases the uterine cavity was down to normal size in a week and in the other case in eleven days. In one, all serious symptoms had disappeared after forty-eight hours. When I reached the other patient the whole vestibule, vagina, and uterine cavity was one mass of sloughing tissue. She was pulseless, and had rigors every few minutes. A big bit of stinking cloth was found in the uterus. All serious symptoms ceased after six days. One of the patients was a European lady, the other an Indian. The bipp used was of the strength of total solids to paraffin of 1 to 3—that is, "bi" represented one part and paraffin three parts. Some of the paraffin was vaseline and some liquid paraffin, in order to make it sufficiently thin so that the interstices of the gauze might be filled. I never used bipp stronger than this. For ordinary conditions I find 1 in 8 or 1 in 16 quite enough.

There are three things to be remembered about bipp. The least oil or fat will cause poisoning. There should be no crystals of iodoform; an amorphous powder should be used. Direct sunlight (and indirect after a while) changes its colour and makes it useless.

Before I thought of packing with bipp gauze I used a Bozeman double-flow catheter, fixed in position, to irrigate the uterus continuously with saline flowing in and out night and day. This is not nearly so effective or so easily done as bipp packing.

Nairobi, British East Africa.

R. W. BURKITT, F.R.C.S.I.

A CASE ILLUSTRATING THE DIFFICULTY OF DIAGNOSIS IN HEAD INJURIES.

The following case is useful as showing the difficulties that may be met with in dealing with head injuries, where every important symptom is obscured by complications.

At 6.30 p.m. on February 26th, 1919, a man aged 72 was admitted to the East Suffolk Hospital with free haemorrhage from a cut 1½ in. long over the right eyebrow. Three silkworm gut sutures efficiently controlled the bleeding, and there was no evidence of either indentation or fracture of the vault or base.

The patient was very cold and apparently unconscious. The pulse was full, 40. The left pupil was dilated and reacted to light. The right lens was opaque. There was intense rigidity of all the body; the fists were clenched and the forearms flexed across the chest. The knee-jerks were increased, Babinski's and Kernig's signs were present with great irritability, but the patient took fluids by mouth. There was retention of urine; it was drawn off and found to contain albumin. Some oedema of the legs was noticed. Lumbar puncture showed the spinal fluid to be slightly under pressure and mixed with blood. His whole condition indicated intense shock, and localization of the injury was not possible owing to the complex symptoms and the complications present; operation was therefore delayed.

Operation.

On the evening of the third day the bowels had not acted and there was suppression of urine. Surgical intervention being necessary, Mr. Hossack operated by turning down a flap over the injured area. The outer table was found to be fissured; a very fine crack started half an inch above the supraorbital foramen, and ran for about three inches along the right temporal region at an angle of 45 degrees with the horizontal.

The skull was trephined over the fissure; when the dura was incised there was an outflow of blood-stained cerebro-spinal fluid. Free bleeding was coming from the direction of the longitudinal sinus; this was followed up by the rongeur, and the sinus was found to be bleeding at the position of the anterior fontanelle; an extensive thin clot was present. The aperture was plugged with Horsley's wax. The patient died next morning.

Necropsy.

Post mortem the sinus was found to have been effectively plugged. The cerebrospinal fluid was intimately mixed with blood, and the foramen of Munro was occluded by clot on the left side. Other organs were normal, with the exception of the lungs, which showed hypostatic congestion.

History.

It was stated that the patient had fallen, on the day of admission, while crossing his room during convalescence from influenza, and had fallen twice previously during the previous eighteen months, with no untoward result. He was stone deaf and blind in the right eye.

There was great difficulty in arriving at a diagnosis. The presence of albumin suggested the possibility of his being in a uraemic condition. Eye symptoms were masked by his having only one eye. There was no paralysis. Intellectual faculties were said to be poor. Blood in the spinal fluid pointed to haemorrhage within the cranium. The rigidity suggested some medullary lesion; the history a possible cerebral thrombosis.

K. S. VINE, L.M.S.S.A.,
House-Surgeon.

Reports of Societies.

POLYMORPHISM OF THE MALIGNANT EPITHELIAL CELL.

At the meeting of the Pathological Section of the Royal Society of Medicine on April 15th, 1919, Dr. E. H. KETTLE said that the majority of adeno-carcinomata might exhibit much the same structure, but from time to time examples were met with in which the tumour cells possessed a varying degree of polymorphism which might even be so extreme as to make the correct classification of the growth a matter of the greatest difficulty.

That the malignant epithelial cell was capable of polymorphism was well recognized. The interchangeability of the acinous and the solid structure in adeno-carcinomata was familiar, and the origin of a squamous-celled carcinoma from columnar epithelium had been reported on several occasions. Greater variations than these, however, were not, as a rule, considered possible. Krompecher, indeed, held that under certain conditions of growth and environment epithelial cells might assume a spindle form and become converted into connective tissue elements, but his views had not found general acceptance, and the doctrine of the specific nature of cell growth was not seriously questioned. Without going so far as to claim that the adult epithelial cell could actually become changed into a connective tissue cell, Dr. Kettle was convinced that some carcinomata possessed such extreme powers of polymorphic growth that their cells, losing all trace of their epithelial origin, became indistinguishable from connective tissue elements. This had been observed in the propagation of certain carcinomata in the mouse, and a similar process could be demonstrated in human tumours. The recognition of this power of polymorphic growth was particularly important in the study of those cases in which multiple malignant tumours occurred simultaneously in the same individual. Most examples of this condition in the different growths were widely separated anatomically, and appeared to be equally independent biologically. Very rarely, however, double tumours occurred in which carcinomatous and sarcomatous elements were so closely blended that it was impossible to separate them. These neoplasms, usually known as carcinoma-sarcomatodes or "mixed tumours," were essentially carcinomata in which the stroma had sarcomatous properties, and bore a close resemblance to the mixed tumours which developed in the course of propagation of carcinomata in mice; only 28 such cases had been recorded in man. Dr. Kettle offered an alternative explanation. A suspiciously high proportion of the cases had occurred in the thyroid gland and the uterus, and the tumours of these organs were prone to present unusual features. Many of the reporters appeared to have rigid conceptions of the morphology of the malignant cell, and though they had accepted and applied to their own material the researches on sarcoma production of the experimental laboratories, they had paid little attention to those other observations which demonstrated

the extreme powers of polymorphic growth possessed by the malignant epithelial cell. Where it was possible to study the growth of these tumours experimentally doubtful points might be cleared up and satisfactory conclusions reached. With human material this was not practicable, and the tumour was seen only in one phase of its growth, and it might not be possible to interpret what was seen. Conclusions drawn from the study of human tumours should be examined before they were accepted much more critically than those arrived at from the study of experimental ones. Amongst the large number of tumours which had passed through his hands during the last twelve years many presented quite unusual features. Some of them, from the complexity of their structure, might be regarded as "mixed tumours," but he thought it more reasonable to explain them as instances of extreme polymorphic growth of carcinomata.

Absolute proof was impossible in the absence of any method which would enable their behaviour on transplantation to be studied, but he felt no doubt that the interpretation he offered was correct. It was most important to make allowance for the morphological elasticity of the epithelial cell in interpreting any anomalous growth. Failure to do this led to erroneous conclusions, and if the study of human cancer was to help in the solution of the problem as a whole, the facts upon which theories were based must be beyond criticism.

Reviews.

THE PURPOSE OF PHYSIOLOGICAL RESEARCH.

DR. HALDANE, in *The New Physiology*¹ gives his reader much food for thought. The main subject of these addresses may be said to be the consideration of what should be the attitude of the physiologist in regard to the interpretation of the phenomena with which he is concerned. It is very clear that the author has thought deeply on the problem, and his views deserve the most careful attention. I should like, first of all, to express my hearty agreement with the greater part of what he says. A review is apt sometimes to give a false impression of the reviewer's appreciation of a book, because points of disagreement present too great a prominence. In the present case, moreover, I do not always feel confident that I have rightly grasped the author's meaning, and may therefore do him injustice by attributing to him opinions which he does not hold. In any case, it is to be hoped that the result will be to send the reader to the original in order to understand the argument.

The author states that he is neither a "vitalist" nor a "mechanist." He will have nothing to do with guiding "entelechies" or "vital force." On the other hand, he is equally convinced that the phenomena of life can never be described in the language of physics and chemistry. In this latter attitude, as it seems to me, he speaks with too hasty a voice. I take it that no physiologist holds that all physiological facts can at the present time be "explained" in physico-chemical language. But do we know enough to state that we are dealing with phenomena which "differ, not only in complexity, but in kind from physical and chemical phenomena"? (p. 19). It may perhaps ultimately turn out to be so, but the case is surely quite different from that of the distinction between the phenomena of consciousness and the physiological processes in nerve cells, which will be admitted by all to be incapable of expression in the same set of terms. Is there not also, some contradiction between this view of a difference in kind between biological and physico-chemical phenomena and the opinion expressed on p. 105, that "evolution seems to lead, not towards reduction of the organic to the level of the inorganic, but, on the contrary, towards the raising of the inorganic to the level of the organic"? As I understand it, the object of explanation in science is to bring more and more facts under the operation of fewer and fewer wide-reaching general laws, although the problem of philosophy may be otherwise.

¹ *The New Physiology and Other Addresses.* By J. S. Haldane, M.D., F.R.D., F.R.S. London: Chas. Griffin and Co. 1919. (Demy 8vo, pp. 296. 8s. 6d. net.)

Dr. Haldane appears to hold that a large number of physiologists are "mechanists" in the sense in which he defines the word; but I cannot avoid the impression that the views attributed by him to this class are really held by few, if any, of its members. For example, on page 140, the view is attributed to them that "physiologists ought to advance from the sure and familiar ground of physics and chemistry to the unknown ground of biology." The proper function of the physiologist, according to Dr. Haldane, is to investigate the interrelation between the processes taking place in an organism as a whole. If I understand this rightly, it is also implied that even if we analyse the phenomena separately into their physical and chemical elements we have not arrived any nearer to an explanation of vital phenomena. It is clear, however, from Dr. Haldane's own researches, that he does not condemn the practice; indeed, if such analyses do not belong to the province of the physiologist, what science will investigate them?

The addresses deal with the relation of physiology to physics and chemistry, the place of biology in human knowledge, natural selection, the question of the irreducibility of physical, biological, and psychological categories to one another, and the relation of physiology to medicine. The last will probably be of most interest to the readers of this JOURNAL, and the author's remarks will be found of great interest. But he is surely not quite fair to the authors of modern textbooks when he states that "there is no description of the organic regulation which absolutely dominates all the mechanical and chemical details." It is doubtful whether the want of contact between physiology and practical medicine is to be explained by the ignoring of teleological conceptions by teachers of physiology. The reviewer would be inclined to look elsewhere. But Dr. Haldane is undoubtedly right in pointing out that the old name of "institutes of medicine" well describes the fundamental position of physiology as the basis of medicine.

In the same address to the Edinburgh Pathological Club the establishment of clinical laboratories for research and chairs in medicine and surgery, to be held apart from private practice, is strongly advocated. A small detail, with which we may disagree, is the suggestion that experiments requiring animals would be better done in the main university laboratories. Even if this separation is desirable, the work must be done in close association. Every one will agree with the concluding remarks of the address, that an essential part of medical education is a broader general education, along with more science. We must not forget, also, that physiology has relations to other regions of learning and practice, as well as to the cure of disease.

To return to the main thesis—I may be an optimist, but I feel that we can with advantage go further in our investigation of animal heat, for example, than "the assumption that warm-blooded animals actively maintain a certain body temperature, just as they maintain a certain bodily structure and composition." I may be misrepresenting Dr. Haldane's position by removing this passage from its context, but I am inclined to resent the statement that the above is "the only kind of explanation which really interests and appeals to a true physiologist" (p. 15). On page 78, again, we read that the maintenance of the normal is the really important physiological problem, and that there is no place for this in the mechanistic physiology. We must remember, however, that an organism does not exist apart from its environment, and that it is not altogether inconceivable that a machine might be made to repair its own wear and tear if the right materials were in its environment. Some appropriate constituent, for example, might be present in the lubricating oil which would deposit on the bearings the metal worn away, although the discovery of it would scarcely be worth the labour.

Notwithstanding the above remarks, there is no doubt that Dr. Haldane is abundantly justified in directing our attention to the fact that the phenomena of living organisms must be the object of a science distinct from physics and chemistry, whatever views we may hold on the ultimate possibility of describing them in terms of the simpler sciences. In the same way, chemistry is a separate science from physics, although it may be held that it will become in the end the physics of the atom. W. M. B.

CLINICAL MEDICINE.

THE fifth edition of the late Dr. SAVILL'S *System of Clinical Medicine*² has been revised by Dr. Agnes Savill with the assistance of many writers, and in many sections rewritten. The particular character of the work is that it is based on symptoms—an arrangement which has commended itself to many practitioners desiring a quick reference in this way, though for students, who must learn their medicine by studying cases as complete entities, it may be unwise to focus attention on a symptom and build up a diagnosis thereon.

At the present time the reviewer naturally turns to the diseases which the war has rendered prominent, and it is a little disappointing to find that these have received brief mention only. Thus, trench fever, which will call for much treatment at the hands of the practitioner, is dismissed in a few lines, and no mention is made of the part played by the louse in spreading the disease, though this was reported in the current literature of March, 1918. More stress might have been laid on the debilitating effects of this infection. Again, the so-called trench nephritis is barely mentioned, though in its microscopic anatomy there are definite characteristics, and it seems probable that the very widespread incidence of albuminuria amongst the troops in France will result in an increase in the number of cases of renal inadequacy in this country. Nor should the statement that subcutaneous injections of oxygen are useful in the treatment of trench feet be allowed to pass without challenge. Again, the remarkable results which have been obtained in the treatment of the irritable heart of the soldier are worthy of recognition and incorporation in a book dealing with treatment, for much has been learned which will be of value in civil life. These are, however, criticisms of detail. For the rest, it need only be said that the revision has been carefully and thoroughly done. The section on nervous diseases, revised by Dr. Harry Campbell, calls for particular notice on account of its clearness, all essential information being included without overloading the subject.

To the busy practitioner the fifth edition of this *System* will certainly appeal, from the convenience of its arrangement and the value of its contents.

A TEXTBOOK FOR MIDWIVES.

THE call for a second edition of Dr. FAIRBAIRN'S *Textbook for Midwives*³ is, one hopes, an indication of the correctness of his expectations when he wrote the book, namely, that a more educated class of woman was adopting midwifery as a profession and would want more advanced teaching than is to be found in the smaller manuals for midwives. Not only does Dr. Fairbairn provide all that a nurse can be expected to know about midwifery, but there is an excellent introductory section dealing with anatomy, physiology, and bacterial infection. Special attention is given where necessary to points stressed under the regulations of the Midwives Boards for England and Scotland. Throughout the book the writing is of the most lucid kind, and the teaching of the most practical order, as was to be expected from an author with Dr. Fairbairn's reputation as a teacher. The printing and illustrations are also good, and the only thing about the book which we condemn is its price. The reviewer's copy is marked 20s.—which even under war conditions is a very high price to demand from nurses and pupil midwives for a book of 350 pages, even if the pages were quarto.

NOTES ON BOOKS.

DR. RENDLE SHORT has undertaken the laborious task of editing the *Index of Prognosis*⁴ to supplement the volumes on *Treatment and Differential Diagnosis*, published by

² *A System of Clinical Medicine, dealing with the Diagnosis, Prognosis, and Treatment of Disease.* By T. A. Savill, M.D. Fifth edition. London: Edward Arnold. (Pp. xxviii and 948; with four plates in colour and 170 illustrations. 28s. net.)

³ *A Textbook for Midwives.* By John S. Fairbairn, M.A., B.M., F.R.C.P., F.R.C.S. Second edition. London: Henry Frowde, and Hodder and Stoughton. 1918. (Roy. 8vo, pp. xiii+350; 115 figures, 3 plates. 20s. net.)

⁴ *An Index of Prognosis and End-Results of Treatment.* By Various Writers. Edited by A. Rendle Short, M.D., B.S., B.Sc. Lond., F.R.C.S. Eng., Captain R.A.M.C. (C). Second edition, revised and enlarged. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited; Toronto: The Macmillan Company of Canada, Limited. 1918. (Demy 8vo, pp. xi + 770. 30s. net.)

Messrs. John Wright and Sons of Bristol, some time ago. To enable the practitioner to give as faithful a prognosis as possible, Dr. Short has compared the results obtained by various physicians and surgeons with hospital cases and those in private practice, and it can hardly be doubted that he has thereby greatly enhanced the value of his work. Yet in spite of his desire to omit misleading theories, he has been led to make at least one doubtful assumption—namely, that in bronchial asthma there is said to be an anaphylaxis between that disease and egg-albumen. If the offending food is removed from the diet, the general condition of the patient almost invariably improves, and often a cure results. How rare an event!

The 1919 edition of the *Directory of District Nursing and Streets List* for London has now been issued by the Central Council for District Nursing in London. The Directory has been found of use by social workers and others, and is the only publication of its kind which, in addition to the special information as to district nursing, shows for practically every place in the metropolis the City or borough and the Poor Law union in which it is situated. The price (2s. 6d.) is considerably below the cost of production.

A POST-GRADUATE MEDICAL ASSOCIATION.

A MEETING was held on April 29th at the Royal Society of Medicine to discuss the proposed formation of a Post-Graduate Medical Association. The basis of the discussion was the scheme for post-graduate medical education which has been approved by the London medical schools, existing post-graduate schools, and special hospitals, and was published in the *BRITISH MEDICAL JOURNAL* of April 5th (p. 424).

SIR WILLIAM OSLER, who presided, said that the scheme was the outcome of many conferences between the schools and hospitals concerned. Matters with regard to the provincial schools, it was thought, might be better arranged at this later stage. There were three possibilities—to extend existing post-graduate schools; to establish separate colleges; or to unite the medical schools, post-graduate colleges, and special hospitals in an association which would consolidate all the teaching interests. The last had been chosen as the most hopeful. These various schools and hospitals had consented to arrange special classes and to give facilities for research work and general study. Arrangements, it was hoped, would be made for utilizing the enormous material in the fever hospitals and Poor Law infirmaries, and to give special students an opportunity to study problems relating to public health and preventive medicine. In connexion with the representative council to be set up there would be a permanent secretarial staff, whose duties would be to keep in touch with every medical school in the United States, the Dominions, India, and Egypt, so that at least every quarter there would appear on the bulletin board of these schools abroad information about post-graduate work in the United Kingdom; also to receive students on arrival in London, and to provide weekly information as to post-graduate facilities. The secretary's office, in fact, would combine the functions of a clearing house and of a university registry. Branch offices could be established at the provincial schools, and it was to be hoped that there would be co-operation with a similar organization in Scotland and Ireland. There would be interchange of information with the Paris Post-Graduate Committee; and British students wishing to visit the United States or the Dominions for graduate work could find in the central bureau up-to-date information. Another point of importance was the organization in each county centre of a yearly post-graduate course of ten days or two weeks, free, or at a very small cost, to all practitioners of the neighbourhood; such classes might be held at the county hospitals, and the central organization could be of great help in furnishing special teachers. There was no reason why they should not join in a general overseas students' union, though these details were for subsequent arrangement. The important thing was to pool their interests, get the teachers everywhere to realize the importance of post-graduate instruction, and energy, patience, and organization would do the rest. He moved: "That a Post-Graduate Medical Association be formed on the lines laid down in the printed scheme."

SIR BERTRAND DAWSON formally seconded, and the resolution was carried *nemine contradicente*.

SIR GEORGE NEWMAN said that the President of the Board of Education desired him to express his good wishes for the success of post-graduate teaching in medicine in this country, though this did not mean that the Minister was committed to the particular scheme in hand. The speaker gave three reasons why such a scheme should be inaugurated: First, there had been lately a great expansion of medicine, and such movements as were represented by the Insurance Act and the Ministry of Health indicated the urgent importance of a higher qualification and a greater degree of expertness on the part of the mass of private practitioners. In saying this he was not imputing blame to anyone, but some means must be taken to bring the practitioner into closer touch with the newer forms and applications of medicine and surgery. The second reason was that the medical curriculum for the ordinary undergraduate was much overloaded. It might possibly be lightened at the beginning by a fuller equipment of the student in respect to primary scientific subjects before he entered the medical school; but it could certainly be lightened at the end if there existed an adequate system of post-graduate study. The third reason was the need for using the material, at present largely wasted, in the great treatment institutions lying outside the twenty-two medical schools—namely, Poor Law institutions, asylums, and a number of county and borough hospitals—which were not being woven into the whole scheme of medical education and advance. The treatment provided in many of those institutions would be all the better if they were connected with some system of medical education for practitioners living in the neighbourhood. Nearly twenty-five years ago he himself was drawn into Sir Jonathan Hutchinson's post-graduate scheme, which, unfortunately, came to an untimely end, largely because it was an *ad hoc* post-graduate teaching centre, not directly connected with a teaching hospital. The success of post-graduate schemes in Germany and America was largely due to the fact that they were associated, intimately and organically, with the teaching hospitals. The Polyclinic scheme failed partly because it could not always maintain the "university standard" in the teaching of medicine, and by a "university standard" he meant one which sent the student away not only with a new method but with a new vision. Nothing was more damaging to a scheme than that occasionally a man should find himself put off with an indifferent course, a casual teacher, and an ill-equipped laboratory. He trusted also that the promoters of the new scheme would not forget that preventive medicine was not a subject by itself, but a pervading influence affecting medicine, surgery, obstetrics, and pathology, as much as it affected public health.

SIR JOHN GOODWIN, Director-General A.M.S., said he had great pleasure in supporting the scheme because he felt that the present position with regard to post-graduate teaching had arisen owing to the demands of the army upon the profession. Every day he was seeing young officers about to be demobilized, whose professional study had been grievously interrupted for the last three or four years. He thought it might be possible to help this movement by placing the Royal Army Medical College at the disposal of the association, though on this point he spoke tentatively.

Professor G. E. MACLEAN (Director of the American Universities' Union) pledged the co-operation of that body. When America came into the war 153 of the leading universities and colleges in the United States organized that union to look after the college men in the American Expeditionary Force. The head quarters of the union were in Paris, and there was one branch in London, and one in Rome. Now the war was over it was hoped to retain the league of universities as an "anchor to the windward" for the League of Nations. Its aim was to bring about interchange of professors and students, and to serve as a clearing house of information, including the giving of particulars to British students as to opportunities for study in the United States.

General H. S. BIRKETT, O.A.M.C. (McGill University, Montreal), felt certain that the scheme would be the means of bringing Canadian students to London, and he paid a tribute to the work already done by the Fellowship of Medicine. Dr. GUSTAVE MONOD, of the French army, spoke of the movement as likely to help to maintain the international understanding. He added that things were

so difficult in France at the present time that theirs was the cry of the Macedonian.

Various representatives of British universities then spoke in appreciation of the scheme. Professor SIMS WOODHEAD (Cambridge) said that Cambridge could not provide any great amount of clinical material, but there were branches of scientific work relating to medicine in respect to which the university would be most willing and anxious to contribute. Professor A. HALL (Sheffield) promised the cordial co-operation of the Medical Faculty of his university. Professor H. R. DEAN (Manchester) said that in Manchester for more than a year they had had a committee to deal with the subject of post-graduate teaching. Manchester was as rich in clinical material probably as London; it had only one medical school, but that would facilitate co-ordination. Professor BLAKE (Liverpool) said that the Medical Faculty at Liverpool would consider the matter very sympathetically. Dr. DOUGLAS STANLEY (Birmingham) did not think that the provincial as distinct from the metropolitan universities could expect many outsiders. Their schemes would have to be purely local, and much patience and skill in organization would be needed. He urged that every school partaking in the post-graduate scheme should be represented on the committee to be elected.

After Lieut.-Colonel A. F. HURST, Honorary Secretary of the Provisional Committee, had made a statement, in the course of which he said that it was never intended to make the scheme a London one, the following resolution was moved by Professor WILLIAM WRIGHT, seconded by Dr. T. W. SHORE, and carried *unanimously and contradictorily*:

That each London undergraduate medical school be invited to appoint two representatives to serve on the Council of the Association, and that all other participating institutions be invited to appoint one representative. That the Board of Education, the Medical Research Committee, the Dominions of Canada, Australia, New Zealand, and South Africa, and the United States be invited to appoint one representative each. That the Council shall have power to co-opt not more than five distinguished laymen interested in medical education on to the Council of the Association.

DOGS' PROTECTION BILL.

THE medical members of Parliament have issued a statement, which has been circulated to all other members of Parliament, in which they seek to give a short outline of the facts in connexion with the Dogs' Protection Bill. As we point out elsewhere, it is important that members of the profession should communicate with their representatives in Parliament, and we print the leaflet here as it contains considered arguments which will be of use to them in stating the case. (We have introduced some cross-headings into the statement.)

STATEMENT BY MEDICAL MEMBERS OF PARLIAMENT.

The following are very shortly the chief reasons why we ask our fellow members of Parliament to consider the effect of the above bill very seriously, and if possible to join in voting for its rejection.

The antivivisection agitation has gone on for a very long time, and has resulted in the passage of bills which protect animals from pain and from unnecessary experiments to a very complete degree, and dogs and some of the larger animals are very specially protected. The agitation, nevertheless, still continues, and promotes appeals to the public by deliberate misrepresentations, by partial quotations, by speaking of medical men who support the agitation as "eminent" when they have no title whatever to such an appellation, and in many other ways. The result is that many philanthropic persons are led to believe that cruelty and "torture" are going on in this country, which is directly contrary to the truth, and that no useful results are being or ever have been obtained from experiments on animals. We, who have been in active medical practice and know the facts and can gauge what the loss to humanity would be if experiments on dogs were entirely prohibited, wish therefore to place the following facts before you for your consideration.

Two Classes of Experiments.

There are two classes of experiments which are performed on dogs—namely, experiments involving subcutaneous injections or experiments on diet, and experiments involving cutting operations.

The first kind of experiments (subcutaneous injections) are not commonly performed on dogs because smaller animals are more suitable than dogs, and are, as a rule, more susceptible to the various infective diseases. In the case of dogs this method has been chiefly employed in investigations on distemper, on malignant jaundice of dogs, and on rabies. Feeding experiments have been recently employed in puppies with a view of ascertaining the cause and treatment of rickets, and satisfactory positive results are being obtained, but by no stretch of the imagination can such experiments be described as "torture."

Cutting experiments are always performed under an anaesthetic and may be grouped under two heads—namely, those where the animal is killed without recovering consciousness, and those where the animal is allowed to recover from the anaesthetic and is kept alive unless he suffers pain.

In the great majority of cases the animal is killed without recovering consciousness, and in these there is, of course, no pain. The greater part of physiological work is done on animals under those circumstances, and it is only rarely in that work that the dog is kept alive after the operation, though in a few cases (such as the study of the secretions) it may be necessary to let the animal recover from the anaesthetic and live for a time provided it does not suffer pain.

In some experiments relating to methods of surgical treatment it is, however, necessary to keep the animal alive, but here also it suffers no pain.

Existing Safeguards.

Under the existing law all dogs experimented on under the second heading (cutting operations) must be placed profoundly under an anaesthetic and the great majority must be killed before recovering from the anaesthetic. Something like 10 per cent. are kept alive under another certificate, but must be killed if they fall ill or suffer pain. Anything like pain or "torture" preceding or during an experiment would entirely vitiate the result. The inspector constantly visits the laboratories and sees the animals and may be present at experiments. Any further suggestions which may be made for ensuring that the dogs do not suffer pain will be readily carried out by those engaged in these investigations.

Results of Experiments on Dogs.

Results of the greatest value have been obtained from experiments on dogs. Physiology, or the science of the normal functions and processes of the living body, is based to a very large extent on observations made on dogs. Our knowledge of the action of the heart, of the processes of digestion, of the functions of the brain and nervous system, of external and internal secretions, of nutrition, and, indeed, of all the vital processes, is the result of researches and experiments continued over many years, and could not have been gained without experiments on dogs.

Without knowledge of the normal functions of the living body it would be impossible to deal with or even to recognize in many cases disorders of these functions due to disease, and it must be borne in mind that our knowledge of these subjects is still very far from complete; the complexity of the vital processes only becomes more and more evident as research goes on, and it must not be supposed that we have in any way exhausted the knowledge to be obtained from experiments on animals.

Results of the greatest value in the treatment of disease in the human subject have also been obtained from experiments on dogs. To mention only a few of these: the work which has been done with regard to the processes of digestion, especially by Pavlov, has opened up new views as to the treatment of gastric and intestinal disorders; much valuable work has been done with regard to dropsy; a great deal of light has been thrown on the nature and treatment of diabetes; organic and functional disorders of the heart have been studied with good results to soldiers who have been at the front; the work on localization of the functions of the brain has been of the greatest service in connexion with wounds and injuries of the brain,

enabling the surgeon to expose the exact seat of the injury often with most beneficial effects; methods of dealing with wounds of and operations on the intestines have been established as the result of experiments on dogs; the same is the case with arterial surgery and other matters. Here, again, there is still very much more to be learned.

Results have also been obtained of value to dogs themselves. For example, much has been learned as to the nature of distemper, and a vaccine has been introduced which, in the opinion of many dog breeders, is of the greatest value in protecting the animals from this disease. In the case of malignant jaundice in dogs, due to a parasite in the blood, a drug has been found (trypan blue), which has given very remarkable results.

Effect of the Bill.

Many of these physiological and pathological experiments can only be carried out on dogs. The blood vessels of the dog, for example, are of a suitable size for such work as arterial surgery; the structure of the tissues and their metabolic processes approximate closely to those of man; the dog takes an anaesthetic well and better than other of the lower animals, and can be kept profoundly under its influence for a sufficient length of time; and the dog can do well on a mixed diet similar to that of man. It would be impossible in many cases to replace the dog by any other animal, and if experiments on dogs were absolutely prohibited the advance of physiology and pathology and medical treatment in this country would be very seriously interfered with, and in some matters would come to an end altogether. It is hoped that those who have to decide the fate of this bill will bear these facts in mind, and will fully realize the immense responsibility of their decision. No doubt the work would go on abroad, and our own workers would go there from time to time to carry out researches in which they were interested. But the scientific work must be carried out in this country if it is to attract the attention of and convince those whose duty it is to apply the advances of science to the treatment of disease in man.

(Signed) W. WATSON CHEYNE.
W. E. ELLIOTT.
A. C. FARQUHARSON.
BOUVENIE MACDONALD.
J. E. MOLSON.

D. MURRAY.
NATHAN RAW.
WILLIAM WHITLA.
ROBERT WOODS.

THE FUTURE OF THE TERRITORIAL MEDICAL SERVICE.

It appears that the reconstruction of the Territorial Force is being very much expedited, and that within a very short time a new scheme will be adopted. Apparently no steps are being taken to consult the officers who have borne the heat and burden of the day, and have gained their knowledge in the bitter school of experience in the war. The Government would be well advised to take immediate steps to call a conference and so obtain the valuable knowledge which these officers possess. This would tend to prevent a repetition of the many gross mistakes made during the recent campaign. Upon the particular problem of the Territorial Medical Service a well-informed correspondent sends us the following observations:

Mr. Churchill, in his speech to representatives of the Territorial Force Association at the City Hall, Westminster, on April 1st, made some appreciative remarks on the Territorial Force. His statement that, "Had its organization been used to build up the war army as was originally intended and conceived by Lord Haldane . . . we should have avoided many of the difficulties that confronted us at the outset, and we should have put a larger efficient force in the field at an earlier stage," was particularly applicable to the Medical Service. We have all seen the lost opportunity for clinical and scientific research in the early stages of the war, due almost entirely to the difficulty of placing medical officers when called up in

their most useful sphere. This serious drawback was very obvious in 1915-16, and even in the last two or three years of the war it had not been entirely remedied. For instance, it was fairly common knowledge that surgeons of the highest experience and specialists in their own line were sent out with field ambulances and spent their time in collecting cases from the field of battle when they should have been doing the necessary operations at the casualty clearing station, where a man unaccustomed to operating, or newly qualified, was to be seen puzzling his brains over patchwork surgery. This state of affairs was difficult to remedy later on, because until late in 1917 there were no records of the particular capabilities of the medical men sent out. Eye specialists and dentists were treated on the same lines. It was not uncommon to find an eye specialist or a dentist doing general duty in a field ambulance. Even to the present time only a small percentage of the cases requiring eye or dental treatment are seen by those most competent to treat them. It would have been easy when forming the many new medical units needed to arrange that instead of medical officers being moved about like logs of wood, they were posted by a staff who knew something of their abilities; it would not have taken a very big hotel to house the clerks required. After all, there were only about 6,000 medical officers in the Expeditionary Forces to deal with, and the records of all were available.

Why was the medical officer of the Territorial Force put at a disadvantage as regards pay and gratuity (which, by the way, he has to wait for till the end of his war service) by introducing a flat rate of 24s. for temporarily commissioned officers? Again, why should a captain of six years' service only get 15s. 6d. a day at home, or at Gibraltar or Malta, while young officers with practically no military medical training get 24s.? Did all the Territorial's training count for nothing? Was it all wasted time? Yet the field ambulances of the Territorial Force were found very useful in 1914 and 1915; they were well trained and ready to take the field, and made splendid records; on the other hand, some of the casualty clearing stations sent out without any pre-war experience and training were not successful. It was no fault of the Territorial Force system and training that caused the Territorial medical officer to be overlooked for promotion and command. Whatever the cause was, it was there and will be there in the future unless the senior Territorial Force medical officers are given a chance to learn executive work and use their experience when the time comes. As to the future, it is to be hoped that the Territorial Force medical officers who know what they want, and the condition of service suitable to them, will be consulted. The seniority list is a splendid thing, and was easy to work during the war, but how will it work in the future? A command becomes vacant and the next officer for it on the list lives miles away; he accordingly has to stand down and let a junior officer take it. The Territorial Regimental M.O. was a backwater man with very little opportunity for training and practically no executive experience, and so was retarded in promotion. One can hardly expect the Territorial Force Medical Service to continue or the practitioner to join it unless these and other matters are arranged to suit him. How often one hears it said by Territorial officers that they were fools to join before the war! Some of them have been told so by Regular R.A.M.C. senior officers, and now they know it. One thing shows this disadvantage at the present time: Is the M.O. who went out early and sacrificed his practice and his all getting the fat jobs under the National Service or Pensions Ministries? It seems that the man on the doorstep is getting the loaf while the man who fought and won it is getting the crumbs.

Mr. Churchill would do well to start with a clean slate and give the Territorial Force medical officer some guarantee that all his pre-war work will not be thrown to the winds in the next emergency. The Territorial Medical Service should be made the foundation of a larger expensible scheme for the future, and the men who join it should be chosen for their skill and usefulness. Let them understand what is expected of them when the time comes, and let it be known that they will be trained free of personal expense and loss. The Government will find that this policy pays when it comes to a fight.

British Medical Journal.

SATURDAY, MAY 3RD, 1919.

THE SCIENTIFIC FUTURE OF THE R.A.M.C.

WE have more than once had to express regret that excellence in medical research and clinical work does not meet with its due reward in the Army Medical Service, and that for this reason so many of its more ambitious officers are tempted to leave the scientific and clinical sides for the administrative, because the latter has been regarded as the only sure road to promotion. This divorce of the higher ranks of the Service from the practice of medicine and surgery, and from the current of thought in pathology and preventive medicine, leads inevitably to a state of mind that obstructs advance in every direction—a fact of which, as we pointed out a year ago, some deplorable illustrations have been afforded in the Home Commands. We have on many other occasions expressed the opinion that this defect in the system is a real misfortune for the R.A.M.C., and have urged that the rules or customs of the Service should be so altered as to ensure that an officer who seeks distinction as a surgeon, a physician, a pathologist, or a bacteriologist, should be able to feel confident that his prospects in his own service shall be as good as the prospects of his colleagues who quit these difficult spheres of work for the task, intellectually less arduous, of administering hospitals, divisions, or commands. It is with great satisfaction, therefore, that we publish this week, on p. 562, an official statement describing the scheme put forward by the Director-General A.M.S., and now approved by the Treasury, for improving the status of the Army Medical Service as a scientific organization.

We were aware that Sir John Goodwin, when he assumed his present office at a most critical period of the war, had set his heart on effecting some such reorganization as this. We are glad to believe that what we have written from time to time has strengthened his hand. The preamble to the outlined scheme speaks of "the urgent need for a better system." These are strong words, as strong as any we have used in criticism of the existing state of affairs; coming from within the Service they clinch the argument of the outside critic. The present scheme is the first step forward; others will no doubt follow in due course, but it is the first step that costs. The aim of the scheme is to raise the standard of hygienic and pathological work in the army, by creating within the Army Medical Department an organization which will ensure close co-operation between those working within and outside the army, so that the benefits of new knowledge shall be utilized to the fullest extent for the preservation of the health of the troops, while at the same time the Army Medical Service shall be in a position to contribute to the advance of medicine and pathology.

The Service is fortunate in having at its head at this time of reconstruction a man of foresight and breadth of view, who has held to his plan of reform and carried it through despite many pressing preoccupations. We learn that in formulating the scheme the Director-General has had the expert

assistance of Major-General Sir William Leishman, F.R.S., with regard to pathology, and of Colonel Sir William Horrocks with respect to preventive medicine; he has had, moreover, the warm support of the Army Medical Advisory Board; but it is, we imagine, a personal achievement to have enlisted the practical sympathy both of the Finance Department of the War Office, and of the Treasury, in a scheme of scientific reform involving a yearly outlay of, perhaps, £30,000. The sum is ridiculously small compared with the greatness of the object in view, but all who know anything of the bureaucratic attitude towards science, when money is in question, will agree that Sir John Goodwin must have put his case more than well to carry these departments with him. The R.A.M.C. owes him a deep debt of gratitude.

It is, perhaps, too soon to describe this plan for the setting up of directorates of hygiene and pathology as the Magna Charta of science in the Army Medical Service; but it is certainly the most important medical reform that has taken place in the army since the creation of the Royal Army Medical Corps. Everything now depends upon the spirit in which it is carried into effect, and the rapidity with which it is supplemented by further efforts in the same direction. We are glad to learn that authority has been obtained for setting up, in each command, a school of hygiene for the education of regimental medical officers in practical methods of sanitation, and the special training of those who aspire to posts in the directorate of hygiene. Developments along other lines may be expected to include means for the special encouragement of clinical distinction.

DOGS' PROTECTION BILL.

As the day (May 23rd) for the third reading debate in the House of Commons of the so-called Dogs' Protection Bill draws near we would again call the attention of all members of the medical profession to the appeal made to them in our issue of April 12th to take an active part in enlightening public opinion as to the necessity of experiments on animals, and on dogs in particular, for the advance of medical science. There is one direction in which such action seems especially necessary, and to be effective it should be prompt. Many of the members of Parliament, by whose votes the fate of this bill will be decided, are little better informed than the rest of the community concerning the true facts of the position. We have had the opportunity of seeing a letter from one member, who states that he has received "an enormous number of letters in favour of the Dogs' Protection Bill and very few against it." There must be many such who would welcome a sober statement from their medical constituents showing the necessity of experiments on dogs if the progress of medical science is to continue in this country, and explaining the protection from the infliction of pain in such experiments which the existing law already affords. Every member of Parliament probably has his regular and trusted medical adviser, and should be ready to receive expert advice, on a matter of such enormous importance to the national health, from the man to whom he entrusts the care of his own.

The medical members of Parliament have done their part, and the circular they have issued to other members of the House of Commons (published at p. 552) is a brief but comprehensive statement of the unanswerable case for the rejection of the bill. All the forces of obscurantism which have for a generation traduced the medical profession have been

mobilized again, and full use has been made of the habitual methods—suppression of the truth and suggestion of the false. Many eminent members of the profession—physiologists, physicians, and surgeons—have placed the true facts before the public in the columns of the *Times* and some other newspapers; we may particularly mention the reasoned and well documented statements made by Sir Charles Ballance and Mr. W. G. Spencer, setting out the debt of surgery to experiments on dogs. Something more, however, is wanted to bring home to individual members of Parliament the threat to the advance of medical science and practice and to the better prevention of disease contained in this ill-considered measure. This want can be supplied by the action here suggested to be incumbent on all members of the profession.

THE HONOURS LIST.

A PART of the New Year honours list, publication of which has been delayed owing to the Prime Minister's absorption in the work of the Peace Conference, was issued on Monday. Among the names it contains are those of medical men who have rendered long and loyal service to the profession. The dignity of a baronetcy is conferred on Dr. Norman Moore, President of the Royal College of Physicians of London. His official connexion with St. Bartholomew's Hospital began in 1874, when he became lecturer on comparative anatomy and warden of the college; subsequently he was lecturer in pathology, and is now consulting physician and emeritus lecturer on the principles and practice of medicine at the hospital. He was Harveian Orator in 1901, and Harveian Librarian of the Royal College of Physicians from 1910 until his election to be President last year; in that office he has shown a living interest in the affairs of the profession, and has helped to the wise solution of many difficult questions. The honour of knighthood is conferred on Mr. J. M. Cotterill, C.M.G., Lieutenant-Colonel R.A.M.C.(T.), consulting surgeon to the Edinburgh Royal Infirmary, lecturer on clinical surgery, Edinburgh School of Medicine, and formerly president of the Royal College of Surgeons of Edinburgh. Colonel Cotterill has acted during the war as commandant of the great military hospital at Craigleith. The same honour is conferred on Dr. Edward Malins, professor of midwifery in the University of Birmingham, a former president of the Birmingham Branch of the British Medical Association and of the Obstetrical Society of London; and on Mr. Charles Sissmore Tones, LL.D., F.R.S., who has been Crown nominee on the General Medical Council for twenty years, and is at present its senior Treasurer. In the early part of his career he was engaged in the practice of dentistry and in dental research; he was a pupil of Huxley, and at the time of his election one of the youngest Fellows of the Royal Society. He is chairman of the Dental Education and Examination Committee of the General Medical Council and was one of the members of the recent commission appointed by the Lord President of the Council to inquire into the extent and gravity of the evils of dental practice by persons not qualified under the Dentists Act. The announcement that a knighthood is conferred on Dr. T. Jenner Verrall will be received with particular pleasure by members of the British Medical Association. He has been an active member for many years; he was a member of Council before the reconstruction of 1902, and a member of the Reconstitution Committee. He was elected chairman of the Representative Body in 1912, and presided over its meetings for the three following years; he was elected a direct representative on the General Medical Council in the same year, and received the gold medal of the Association in 1914. The honour now conferred is in recognition of his services as chairman of the Central

Medical War Committee during the past four years, in which capacity he has greatly assisted both the Army Council and the Ministry of National Service in obtaining medical officers for the navy, army, and air force. The same honour is conferred on Mr. W. S. Glyn-Jones, M.P., Secretary of the Pharmaceutical Society of Great Britain; upon Mr. Arthur Lucas, for forty years Chairman of the Hospital for Sick Children, Great Ormond Street; and on Professor R. A. Gregory, assistant editor of *Nature*, who has been active in the organization of the British Scientific Products Exhibitions.

THE NATURE OF RABIES.

THE rapid increase during the last few weeks in the number of areas in England and Wales in which cases of rabies in dogs have been verified has naturally caused much public disquietude, and some irritation among the owners of dogs, especially lap dogs, who resent the restrictions imposed by the muzzling order. Rabies is primarily an infectious disease of the carnivora, especially the dog, wolf, and jackal, but the cat may also easily be infected, and the disease has occurred from time to time as an epizootic in cattle, sheep, pigs, horses, and deer, and can, it is well known, be communicated to man. The virus has not been certainly identified, although there is ground for believing that the bodies described by Negri in the central nervous system, and known by his name, are evidence of the reaction of the protoplasm to the virus. The Negri bodies, according to Muir and Ritchie, have been found in practically 98 per cent. of cases of spontaneous rabies in dogs—the *rage des rues* of Pasteur. Captain J. A. Wilson, in his communication to the British Medical Association meeting three weeks ago, gave particulars of a minute rounded body (0.1 to 0.3 μ in diameter) obtained after filtration of material from the nervous tissues, salivary and lymphatic glands, and in some cases the stomach, of infected animals; their characters were demonstrated by him at the Lister Institute. The Negri bodies occur in all parts of the nervous system, especially in the spinal and cerebral ganglia. Rabies, in fact, appears to be primarily a disease of these nervous centres, and the characteristic symptoms would seem all to be accounted for on this hypothesis. In its rarer form in the dog, so-called dumb-rabies, paralytic symptoms predominate; they affect especially the jaw and the lower limbs, and this form is the less dangerous, since the animal cannot bite, although the infection may be conveyed to an abrasion licked by the animal. The incubation period in dogs appears to be from twenty to forty days; in man the usual period is said to be forty days, though much longer intervals have been noted. In the ordinary form in the dog—unhappily called furious rabies, for the saliva is infectious long before the outbursts of fury—the first symptom is, as a rule, dullness combined with fidgets; the irritability increases and the animal tears up, and perhaps swallows, its bedding; later it appears to be subject to hallucinations, and periods of apathy are interrupted by furious paroxysms in which it will snap at anything and anybody. The muscles of the larynx and throat are affected, the bark is hoarse and emitted in a manner which is said to be characteristic. There is no fear of water, and the appetite, at any rate in the early stage, is often voracious. If the animal gets loose it will run aimlessly for long distances until it drops from exhaustion. In man also the upper respiratory passages are affected, and there is great difficulty in swallowing; the effort is attended by painful contractions of the muscles of deglutition and respiration, often followed by a tetanic state, with marked opisthotonos and temporary arrest of respiration, so that the patient eventually refuses to attempt to drink—whence the term "hydrophobia," applied to the disease in man. The percentage of cases in which death in man follows the bite of a rabid dog has been variously stated. According to Bollinger, when the

wound has not been canterized 83 per cent. of the persons bitten die; when it has been canterized, 33 per cent. It is now believed, as the memorandum of the Local Government Board indicates, that the use of the actual cautery may be replaced by the free application of undiluted carbolic acid or undiluted izal or similar disinfectant. We know of no statistics which show the mortality of rabies in dogs, but there seems to be little doubt that dogs possess much less resistance to the disease than man. Pasteur, in describing his method of preventing the development of the disease in 1884, showed that the virulence of the virus when passed from the dog to the monkey and afterwards from monkey to monkey is much enfeebled, until a point is reached at which inoculation from the monkey does not give rabies to the dog. On the other hand, the virulence of the virus is increased by being passed from rabbit to rabbit, and it was upon this that Pasteur founded his treatment. The method was first tested upon the dog, and was applied to man with the more confidence because the resistance offered by human tissues to the virus was known to be much greater in man than in the dog or rabbit. After obtaining a virus of constant virulence in the rabbit, Pasteur ascertained that if a portion of the spinal cord were suspended in dry air the virulence slowly disappeared. In the earlier applications of the method to man a series of cords were used, beginning with one which had been dried for fourteen days and ending on the fourteenth or fifteenth day with one which had been dried for three days; it was found that this plan did not protect when the wound was severe and extensive, and the treatment, called intensive, now used in such wounds, extends until the twenty-first day. There appears to have been no recent thorough examination of statistics of the results of the Pasteur treatment, owing probably to the relatively small number of cases which have occurred in Western Europe in recent years. In India the disease is so much more common that the Government has established a series of Pasteur Institutes to which persons bitten by animals, chiefly dogs and jackals, proved or suspected to be rabid, are sent. In the report of the Pasteur Institute, Kasauli, for the year ending 1917 we find that 293 persons bitten or licked by animals proved to be rabid, were treated, with 6 deaths, a percentage rate of 2.05. It should be added that only 58 of these were bitten through clothing; of the others, 19 were bitten or licked on the head or face, and 216 on other parts of the body. Among 105 Europeans, 35 were bitten or licked on the head or face, and 93 on exposed parts of the body; there was only 1 death, a percentage rate of 0.95. Among 188 Indians, 14 were bitten or licked on the head or face, 123 on exposed parts of the body, and 51 were bitten through the clothing. There were 5 deaths, a percentage of 2.7.

EARLY RISING IN THE PUERPERIUM.

It is a common, but not perhaps wholly justified, complaint that the incidence of puerperal infection in private practice has not yielded as much as might have been expected to the introduction of antiseptic and aseptic technique in midwifery. Further improvement in this respect has been achieved by the reduction to a minimum of all digital interference with the genital tract, and by the more stringent supervision of the work of midwives, but still the evil remains. Dr. G. S. Thompson has written us from Sydney a forceful plea for the recognition of the importance of drainage of the puerperal uterus by posture as a preventive of uterine infection. He is, for this amongst other reasons, a strenuous advocate of early rising in the puerperium, and of elevation of the head of the patient's bed in cases in which that counsel is rejected or is deemed inapplicable. "The combination of twilight sleep and the erect position afterwards has robbed childbearing of its terrors and left health instead of disease and subsequent mutilations." The

argument is obviously extreme, but it is wholly beneficial to be brought occasionally face to face with the question whether our methods of practice are all that they should be in the light of such knowledge as we have won. Nothing could be more inimical to progress than complacent satisfaction. This charge, however, cannot justly be levelled at obstetrical teachers; least of all because they recognize the dangers in the incautious adoption of drastic changes. "Twilight sleep," to which Dr. Thompson refers, is suffering the fate of all beneficent novelties. It is being discredited as the result of indiscriminate application. There are already in existence persons who may be said to practise twilight sleep, instead of, and not infrequently at the expense of, obstetrics. Safe and beneficent progress lies in a skilful application of the treatment to the fundamental principles of obstetric practice, and nothing but harm can follow the adoption of any treatment that permits those principles to be eclipsed, even temporarily. A considerable literature accumulated some years ago on the pros and cons of early rising in the puerperium. The "return to nature" argument has not proved the solid ground which it was believed to be. Medical missionaries and others have indicated that the women of races, in which it is customary for the puerpera to rise early after labour, are not less affected by puerperal infection, and are rather more prone to uterine displacements than are the women of more "civilized" races, who remain in bed for at least a week. The condition of the pelvic floor after labour is such that this is anything but surprising. The necessity for adequate drainage of the uterus and vagina is admitted on all hands, and Dr. Thompson's sweeping criticism would be justified only if the absolutely supine position were maintained throughout the puerperium. This, however, is not the case. A rational degree of rest in the puerperium enables the lacerations of the cervix and vagina to become healed and involution to proceed with little tendency to the formation of clots or profuse discharge. Most obstetricians combine with this the promotion of adequate drainage by propping up the head and shoulders after the second or third day, and by allowing the patient to sit up in bed after the fifth day. Dr. Thompson's argument is beneficial as a reminder of the fact that adequate drainage is an important factor in a healthy puerperium, and a valuable adjunct to treatment in puerperal infection. But it is not strong enough to warrant of itself a departure from a custom which has the authority of centuries behind it.

THE "VITAL RED" METHOD OF DETERMINING BLOOD VOLUME.

The method introduced by Keith, Rowntree, and Geraghty for ascertaining the quantity of blood in the circulation was referred to in the discussion on wound shock by Professor Bayliss and Dr. Dale, and as it has not yet found its way into textbooks a note on the method seems called for.¹ It consists in the introduction directly into the circulation of a measured quantity of a non-toxic, slowly absorbable dye, which remains in the plasma long enough for thorough mixing, and of the determination of its concentration in the plasma colorimetrically by comparison with a suitable standard mixture of dye and serum. The dye employed is "vital red" (disodium disulphonaphthol azotetramethyl triphenyl methane). Previous to injection 10 c.cm. of the patient's blood is withdrawn and the oxyalted plasma kept for preparing the standard. Then a dilute solution of the dye is injected into the vein, the amount being calculated on the basis of 3 mg. of the dye per kilo of the body weight. Two samples of blood are withdrawn from the vein on the opposite side at intervals of three and six minutes respectively after the injection. The plasma of these two samples contains the red dye in unknown concentration. The original plasma diluted with three parts of normal

¹ See *Archives of Int. Med.*, 1915, p. 547.

saline solution is mixed with a convenient quantity of the dye solution, and the colorimetric reading is compared with those of the subsequently removed samples. A simple calculation gives the total volume of plasma in the circulation, and by employing the haematocrit the total blood volume is readily estimated. Traces of the dye appear in the urine after ten minutes, but considerable amounts can still be found in the circulation for several days afterwards, and as the dye is not taken up by the body cells or corpuscles to any appreciable extent during the short time necessary for the experiment a high degree of accuracy is claimed for the method. Repeated determinations on the same individual have yielded results practically identical. The plasma in normal individuals has been found to be approximately one twentieth of the body weight; the total blood constitutes 8.8 per cent., or approximately one twelfth of the total body weight. This is much higher than that given by the method of Haldane and Smith which has been so largely used in this country. In obesity the blood volume is considerably decreased below the normal, whilst many cases of anaemia show a relatively large plasma volume. In pregnancy before term there is a plethora. In some cases of polycythaemia there is a true plethora, and on the other hand marked hypertension may be accompanied by a low blood volume. In secondary shock, as Dr. Dale pointed out, the blood volume may be seriously decreased.

FEES FOR NOTIFICATION OF INFECTIOUS DISEASES.

As is well known, the notification fee was reduced from 2s. 6d. to 1s. under the Local Government (Emergency Provision) Act, 1916. It was a paltry piece of departmental economy, and from the first the British Medical Association protested against the reduction, and warned the Government of the light in which it would be regarded by the medical profession. On Friday, April 25th, Dr. Addison, the President of the Local Government Board, received a deputation from the British Medical Association on the question of the fee for the notification of infectious diseases. The deputation consisted of Mr. E. B. Turner, Chairman of the Medico-Political Committee, Dr. T. W. H. Garstang, Chairman of Representative Meetings, Dr. M. G. Biggs, Dr. Adam Fulton, Mr. N. Bishop Harman, Dr. J. P. Williams-Freeman, and the Deputy Medical Secretary. In introducing the deputation, Mr. Turner referred to the widespread desire of the profession that the notification fee should be restored to the pre-war level, and emphasized the indignation and resentment which the reduction of the fees had aroused throughout the whole profession. The members of the deputation protested strongly against the view that notification was a purely clerical matter, and gave numerous instances of the grave inadequacy of the present scale of fees in every class of practice. In reply, Dr. Addison said there was much force in many of the points made by the deputation. He did not personally wish to perpetuate any longer than he was compelled by existing statutes the difficult position created by the reduction of notification fees made by the Act of 1916; and he would make arrangements to revert to the pre-war scales as soon as possible. He could not at the present stage bind himself on points of detail, but he was happy to give the deputation this general indication of the course which he proposed to adopt. Dr. Addison promised to have inquiry made on certain points of detail which had been raised by the deputation—for example, the legal liability of a practitioner in the notification of certain classes of disease, and the number of forms of notification certificate now in use.

CLASSIFICATION OF TUBERCULOSIS.

A VERY outspoken report has been presented to his local committee by the tuberculosis officer for Middlesbrough, who for the last four years has been putting in force his experience of similar work in Western Australia. With

refreshing candour he describes as futile the methods adopted in the North of England for the treatment of surgical tuberculosis, and asserts that archaic practice is only varied by entire neglect. The experience gained at the Cripples' Home at Alton, where 90 per cent. of the cases of spinal and hip disease are successfully treated, is, he thinks, disregarded, no effort being made to achieve a like result by the same means. It is clear that a more definite and uniform system of classification for the non-pulmonary forms of tuberculosis is greatly needed. Confusion too often arises from the statistical association of juvenile with surgical cases. A sharp line of demarcation has to be made between these forms and the incidence of tuberculosis of the lungs. In dealing with the latter, very satisfactory results have been obtained at Middlesbrough by the rigid limitation of residential treatment to the cases of early infection. Home visitation of the later and more advanced cases has had a distinct effect in checking the spread of the disease, in spite of the imperfection of notification. The chief outcome of the use of tuberculin in selected cases would appear to be the acquirement of a diminished liability to relapse during subsequent catarrhal attacks. Experience of the disease in general in the North of England tends to support the contention derived from statistical evidence, put forward in his report to the Research Committee by Dr. John Brownlee, upon which we commented last autumn,¹ to the effect that there must be many strains of tuberculosis, perhaps produced by differences in environment, and that vaccines and serums derived from one strain may be wholly inoperative in the presence of another. Herein may lie the explanation of the very contradictory results obtained by equally competent observers which have thrown doubt upon the efficacy of tuberculin treatment in general.

DR. JAMES NEAL.

IN response to the unanimous invitation of the Council of the Medical Defence Union, Dr. James Neal has accepted the post of General Secretary to the Union, which became vacant owing to the death of Dr. A. G. Bateman on April 9th. Dr. Neal has been Deputy Medical Secretary of the British Medical Association since 1912; for two years before that he was a member of the Central Ethical Committee of the Association, and represented the Birmingham Central Division in the Representative Body. He was a member of the State Sickness Insurance Committee in 1912, and a member of the first Advisory Committee set up under the National Insurance Act. During a large part of his twenty years' general practice in Birmingham Dr. Neal was honorary secretary of the Birmingham and District General Practitioners' Union, and Editor of the *Midland Medical Journal*. The Council of the Medical Defence Union is to be congratulated on its choice, but Dr. Neal's departure will be a loss to the central work of the Association, in which his sound judgement, long experience, and unflinching courtesy have won the respect of all.

The report of the Registrar-General for the year 1917 has now been issued. We propose in an early issue to give a summary of the more important results contained in this admirably drawn up official analysis of vital statistics, which, in view of impending legislation, is of more than usual interest and significance.

A HUNTERIAN lecture on the surgical aspects of the collection and transport of the wounded will be delivered in the theatre of the Royal College of Surgeons of England on Tuesday, May 6th, at 5 o'clock, by Professor T. B. Layton, D.S.O., F.R.C.S., formerly officer commanding 2/4th London Field Ambulance. The lecture will be illustrated by the Palestine campaign, from the fall of Beersheba to the Es Salt raid, with photographs taken by the lecturer and others.

¹ BRITISH MEDICAL JOURNAL, September 28th, 1918.

SPECIAL CLINICAL AND SCIENTIFIC
MEETING.

In concluding the discussion on malaria in the Section of Preventive Medicine and Pathology, on April 11th, the chairman, Colonel Sir RONALD ROSS, K.C.B., K.C.M.G., F.R.S., Consultant in Malaria to the War Office and Ministry of Pensions, gave the following brief summary of war experiences in malaria, confining himself to points which might be specially useful in military and pension practice in the United Kingdom. This summary is still only provisional, because a number of reports are not even yet delivered, while others have not yet been abstracted and digested. In addition to the numerous papers published during the war in the medical press, two large official publications on malaria are in course of production—one prepared by the War Office, and one by the Salonica Expeditionary Force.

WAR EXPERIENCES OF MALARIA.

By Sir Ronald Ross.

Regarding the actual treatment of febrile attacks or relapses in malaria, I think that the following points have been pretty conclusively established:

1. Moderate doses of quinine—say, between 20 and 40 grains daily for adults—suffice in the vast majority of cases to reduce both fever and asexual parasites within two or three days.

2. I think that the sulphate, bisulphate, hydrochloride, and bihydrochloride of quinine are almost equally efficacious within narrow limits, but there may be clinical reasons for the occasional selection of one of these salts. Their elimination by the kidneys appears to be finally about equal.

3. Roughly, the same thing can be said regarding the three modes of administration—namely, orally, intramuscularly, and intravenously. Many prefer the third for rapid action, especially in first attacks, in serious attacks, and for other reasons. With much vomiting or gastro-intestinal disturbances the intramuscular and intravenous methods must be preferred; but many workers assert that the oral administration is generally as good, while it is obviously much more easily given. On the other hand, I have heard many "non-official" reports of occasional local mischief caused by the intramuscular injections; and, on the whole, see no reason why the oral administration should be superseded as a general broad procedure in malaria. Relapses occur with about equal frequency with all modes of administration after stoppage.

4. Rest in bed and good feeding are required during the attack and for about four days after the temperature returns to normal.

5. In first attacks and in complicated and serious attacks, larger doses than those mentioned in (1) above are very generally advocated by clinicians, but we have not had very much experience of such attacks in the United Kingdom, and I think that the point still requires more investigation.

6. Many think that the malignant parasite requires much more rest and continuous treatment after attacks than do the other species of parasite.

Regarding what I have somewhat tautologically called "anti-relapse prophylaxis," there is now a large amount of evidence to the effect that while men are actually taking about 60 to 90 grains of quinine every week their relapses will be infrequent, especially if the men are at the same time getting good food and a sufficient amount of exercise in the open air. The most remarkable case in proof of this occurred when many battalions were moved from the Salonica to the French front, and were subjected to a three months' course of such treatment under the strict supervision of Lieut.-Colonel Dalrymple, C.M.G., O.B.E., R.A.M.C. He succeeded in sending two whole divisions of these troops into the firing line, where the malarial factor became negligible. Similar results have been reported from English Malaria Concentration Centres by Captains Fraser and Cooke; and I am shortly communicating abstracts of the results in both these cases to the medical press. The essential points of this anti-relapse treatment are that quinine shall really be given, under strict discipline or supervision; that the patients shall be living a healthy, vigorous life and shall be well fed meanwhile. The treatment does not absolutely prevent all relapses, but certainly

reduces their frequency while it is being given; it generally allows the men to recover weight, to lose anaemia and other secondary symptoms, and, in many cases, apparently to throw off the infection entirely by some unknown natural process of cure. The daily dosage is generally advisable for administrative reasons, but many observers suggest that the total weekly amount can be more effectively given only on two or three days a week, or that even smaller total amounts may be so administered with equal advantage. Decision on this point generally depends on local or special conditions. Many clinicians also like to add arsenic, iron, and other drugs to the quinine for the above purpose.

Regarding the absolute cure of malaria infection, I regret to say that the results have not been nearly so definite. Numerous "sterilizing" treatments have been tried, but none of them has yet proved certainly efficacious. As a rule very large doses of quinine—intramuscular, intravenous, oral, or combined—have been advocated, often associated with kharsivan and other preparations. I think that a large proportion of cures has sometimes followed; but, in view of the admirable effects of such a simple treatment as the anti-relapse prophylaxis outlined above, I doubt whether these sterilizing treatments are really justified. At the same time I do not wish to discourage in any way attempts to find a more satisfactory form of permanent cure.

The general result of all this, as regards military and pension practice, appears to me to be that cases of malaria should, after the treatment of the initial fever or relapse, be kept under anti-relapse quinine prophylaxis for about two or three months, or more if further relapses occur. In fact this is simply a return to the old clinical practice fairly universal throughout the tropics, and is like the treatment laid down in the War Office Provisional Instructions for the Treatment of Malaria [24/General Number/5500 (A.M.D.2), War Office, August, 1917].

Two other points may be mentioned. As a result of all these observations I am not at all sure that quinine acts at all as a direct poison to the parasites, but am inclined to suggest, though merely as a working hypothesis, that the drug only stimulates some natural antibody which destroys the parasites. The second point is that, as was suggested long ago, the parasites may be much influenced by season—that is, that relapses may be much more frequent and more difficult to cure at certain seasons than at others. We hope to have more evidence on this point later on.

Regarding blackwater fever, Staff Sergeant Nierenstein has made the important discovery that in certain individuals quinine may be changed into a highly haemolytic substance which he calls haemoquinic acid, and which is found in large quantity in blackwater urine (see *Journal of the R.A.M.C.*, March, 1919).

Regarding the prevention of malaria, there has been a very general consensus of opinion that the administration of quinine, even in doses of 20 grains daily, to healthy persons with a view to preventing their becoming infected, has been very largely a failure. Many medical officers think also that this so-called quinine prophylaxis renders infections more difficult to treat when they occur. I am very sorry for this, as hitherto quinine prophylaxis has been generally adopted as one of the great weapons against the disease. Probably its previous acceptance was due to a confusion between true quinine prophylaxis, that is, quinine given to healthy persons, and anti-relapse quinine prophylaxis, that is, quinine given to infected persons for the purpose of preventing relapses. The former appears to be inefficient, the latter to be most efficient; and I suspect that the good results so often claimed for quinine in the reduction of the malaria rate of localities was due to the latter and not to the former.

If the failure of true quinine prophylaxis is finally accepted, a great change must be made in the prophylaxis of malaria in general, and we shall have to rely more than ever on mosquito reduction and mechanical protection. I will conclude by mentioning the admirable results obtained by Colonel Robertson, C.M.G., C.I.E., I.M.S., at Taranto. Last year only one case occurred in that camp owing to the careful mosquito reduction adopted by him and the officers of the camp.

I should have liked to mention a vast amount of other excellent work done by officers of the army during the war, but have no time to do so—and it would be invidious merely to refer to a few special cases.

The Pensions Ministry, acting in association with the Medical Research Committee, is organizing a large scheme for the treatment of demobilized soldiers affected with malaria. There are, of course, in this country many medical men who will be called upon to treat malaria, and I hope that the above remarks will be useful to them. Further details have been given in a paper prepared by Colonel James of the Local Government Board and myself; and I propose to circulate other information from time to time to the medical press. It must be the object of all to reduce relapses as much as possible among the men, in order to enable them to do their civilian work. If they take the anti-relapse prophylaxis as described above, I am sure that most of them will gradually lose their infection entirely and recover completely.

DEMONSTRATIONS.

MALARIA.

FOLLOWING the discussion on malaria on Friday morning an instructive demonstration was given in a room adjoining the lecture theatre by Sir Ronald Ross and his colleagues. Blood films, histological specimens, charts, etc., were shown, illustrative of the various phases in the life-history of the parasites and culture of the earlier phases also. This aroused much interest, and those members who could not manage to attend the demonstration on the Wednesday at Endsleigh Palace Hotel had an opportunity of studying the subject.

MODERN METHODS OF TREATING VENEREAL DISEASE.

The demonstrations on venereal disease organized by Brevet Colonel L. W. Harrison took place on the afternoons of April 9th, 10th, and 11th. In order to prevent overcrowding each demonstration was organized in three sections, and visitors were similarly divided into three parties, visiting each section in turn.

In Section A, Mr. C. H. Mills demonstrated the system on which syphilis is managed, commencing with the examination of a stripped patient and recording of notes, and the graphic representation of the lesion on a special treatment card. The aim in all early cases is to make the diagnosis and commence treatment as quickly as possible, and, in order to save time, specimens for microscopic examination are not sent to the laboratory but examined on the spot. Specimens of spirochaetes were demonstrated in the adjoining room used for this purpose. There was also shown in a room used for injections all the methods employed in antisyphilitic treatment. These included the various steps in the preparation of "606" for injection up to the point where the needle is inserted into the vein. There was also demonstrated the intravenous injection of "914" in concentrated solution and the method of preparing "914" for intramuscular injection. This is now done by making an emulsion of the "914" solution (very concentrated) with a special "creo-camph." cream basis which is anaesthetic. Luargol was also shown and the demonstration included the detection of good and bad ampoules of arsenobenzol preparations. The technique of intramuscular injection of mercury was also shown.

In Section B, Captain Doble demonstrated the outfit used for the early preventive treatment of venereal disease in the army. This includes a small tube of calomel cream for instillation into the urethra, as well as for inunction of the parts, and a small bottle of 1 in 1,000 potassium permanganate solution. He also demonstrated the various methods employed in the abortive treatment of gonorrhoea. Captain T. Osmond demonstrated apparatus used in the diagnosis and treatment of chronic gonorrhoea, as well as the routine treatment of ordinary cases.

In Section C, Captain D. Thomson demonstrated the preparation of detoxicated vaccines and illustrated their effects by a wall diagram showing the effect of various types of vaccine on the complement fixing power of the serum of the inoculated patient. The diagram showed clearly the superior effect of detoxicated gonococcal vaccines in raising the patient's resistance. Captain Thomson also demonstrated the complement fixation test in gonococcal infections. Lieutenant Burnet showed a number of microscopical specimens, stained and under dark-ground illumination, illustrating the various micro-organisms found in cases of venereal disease. He also illustrated by wall diagrams and actual tests the general principles of

complement fixation. Mr. N. C. Clark demonstrated the Wassermann test in all its stages.

The demonstrations on venereal disease were attended by 298 visitors, many of whom expressed their keen appreciation of what they had seen. Ample opportunity was afforded for informal discussions on various points, and the various demonstrators were kept very busy answering questions.

England and Wales.

THE DOGS' BILL.

At a special meeting of the Fellows of the Royal Society of Medicine on April 28th, when the President, Surgeon Rear Admiral Sir Humphry Rolleston, K.C.B., was in the chair, the following resolution was unanimously passed:

That the Royal Society of Medicine, representing as it does every branch of the medical profession throughout the Empire, and with full knowledge of the grave issues involved, feels bound to place on record its earnest hope that the Dogs' Protection Bill will not pass into law, as, if enacted, it will place this country at a great disadvantage as compared with all other civilized countries, and will practically compel our ablest workers to seek opportunities for preventive and curative research abroad.

ANTIRABIC TREATMENT.

In the JOURNAL of January 11th, 1919, we printed the substance of a revised memorandum issued by the Local Government Board on the procedure recommended to be followed when persons are bitten by dogs suspected of being rabid. At that time specific antirabic treatment was obtainable only at Plymouth. As we announced last week, in consequence of the appearance of rabies in dogs in the neighbourhood of London, antirabic treatment is now obtainable in London as well as at Plymouth, with material specially supplied for the purpose by the Director of the Pasteur Institute in Paris. The Local Government Board issued on April 28th a revised edition of its memorandum. The procedure has been modified in the light of the facts which we published last week. When, after communicating with the Local Government Board in the manner directed, the medical officer of health is satisfied that antirabic treatment is essential, and has ascertained that the person bitten is prepared to begin the treatment, he will communicate with Dr. L. S. Dudgeon, Department of Pathology, St. Thomas's Hospital, or with Dr. W. L. Pethybridge, 11, Whitefield Terrace, Plymouth, as the case may be, and all arrangements for the attendance of cases must be made through him. A copy of the revised memorandum has been forwarded to medical officers of health, who can obtain further copies for distribution to medical practitioners on application to the Local Government Board. As already announced, local authorities are empowered to pay expenses in cases where persons needing antirabic treatment cannot stay in London, or at Plymouth, at their own expense for the two or three weeks' course of specific treatment.

Scotland.

THE SUMMER TERM.

THE summer term opened on April 22nd. On April 24th the number of matriculated students at Edinburgh was 3,254. In 1913-14 the number was 3,283, so that the pre-war total will be probably reached this year, if not passed. A large number of overseas soldiers are taking advantage of the special courses arranged. At Glasgow over 200 ex-service students have enrolled themselves in the faculty of medicine for the summer classes of the first year, with the result that the existing accommodation at the university is altogether inadequate. Temporary arrangements have been made with the Royal Technical College for additional university courses in physics and botany. There is immediate need of provision for additional teachers and demonstrators, and of space and equipment for lectures and laboratory work in the later subjects of the medical course. The resources of the university are insufficient to meet the cost, and representations have been made to the Government, in association with other universities, in order that

the responsibilities of the universities, not only to ex-service students, but to students of the Overseas Dominions and from America, shall be met. The Business Committee of the General Council of the University of Glasgow proposes to consider and report upon the whole question of the medical curriculum, including post-graduate teaching; the alternatives are said to be either to unload the overburdened curriculum or to add another year to it.

STILLBIRTHS STATISTICS IN EDINBURGH.

The health authorities in Edinburgh do not furnish statistics regarding stillbirths in the reports regarding the birth-rate, infantile death-rate, ordinary mortality rate, etc., which appear weekly in the newspapers. The reason is that the latter rates are obtained from registration whilst the stillbirths are got from notification returns; if they were published together there would be apparent discrepancies. At the same time, the importance of reporting the stillbirths and of comparing the rate from month to month is obvious, and an arrangement has been made whereby the number of these antenatal and intra-natal disasters will be furnished each month. During January the number of births notified in the city of Edinburgh was 460; this number included 14 stillbirths, and the stillbirths rate was therefore 30.43 per 1,000. In February the number of notified births was 275, including 5 stillbirths; the stillbirths rate for the month was therefore 18.18 per 1,000. In March the number of notified births was 405, including 15 stillbirths; the rate for March therefore worked out at 37.03 per 1,000. It is to be noted that stillbirths are not included in the number of the registered births upon which the birth-rate is founded; neither are they considered in the infantile and neonatal death-rates.

Ireland.

THE DOGS' BILL.

At a meeting of the Dublin branch of the Research Defence Society, to express disapproval of the Dogs' Protection Bill, the Archbishop of Dublin, who presided, said that the supporters of the bill adopted the position that, no matter what benefits might accrue to mankind, experiments on dogs or other animals should not be carried out if any degree of pain or sickness was inflicted upon the animals. His reply was that there was no scale by which the value of a man and of a dog could be determined; there was a difference which could not be bridged between a dog's life and a man's, and to insist on the position assumed by the advocates of the bill was immoral. On the motion of Dr. J. O'Carroll, president of the Royal College of Physicians of Ireland, seconded by Sir Robert H. Woods, M.P., and supported by Mr. J. B. Story, president of the Royal College of Surgeons in Ireland, Colonel A. C. O'Sullivan, professor of pathology in Trinity College, Rev. Denham Osborne, and Sir John Moore, a resolution was unanimously carried calling upon Parliament to reject any bill that, by the prevention of experiments on dogs under proper safeguards, would hamper medical science and retard the progress of knowledge.

MEDICAL VACANCIES IN CASHEL UNION.

The Local Government Board has forwarded to the Cashel guardians a circular letter stating that it had withdrawn the prohibition contained in the circular of November, 1915, and requesting the guardians as soon as may be convenient to take the prescribed steps towards filling up any vacancies existing in the medical staff of the union. The following order was made:

Advertise for permanent medical officers for Fethard and Kilpatrick dispensary districts, and also for workhouse, the former at a salary of £160 per year, and the workhouse at a salary of £120, with triennial increments of £10 in each case to a maximum of £200, subject to the Local Government Board's approval. The dispensary medical officers to receive £20 a year each as medical officers of health. The appointments will be made to comply with the regulations of the Local Government Board, who sanctioned the existing appointments only for the period of the war. Guardians to be notified that the appointments will be made at the guardians' meeting on April 10th, 1919.

Correspondence.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

SIR,—Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the grateful members of the Association over which he has presided during the past five years.

Subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is now prepared to receive subscriptions of one guinea or less. Cheques and postal orders should be made payable to the "Sir Clifford Allbutt Presentation Fund," and crossed London County, Westminster, and Parr's Bank.—We are, etc.,

J. A. MACDONALD,
Chairman of Council.

T. W. H. GARSTANG,
Chairman of Representative Meeting.

G. E. HASLIP,
Treasurer.

British Medical Association, 429, Strand, W.C.

R.A.M.C. WAR MEMORIAL.

SIR,—Very many officers and men, past and present, of all branches of the Royal Army Medical Corps have recently expressed the view that a memorial should be erected to those officers and men of all branches of the corps who have fallen in this war. These number 560 officers, 4,091 other ranks. A committee composed as follows was formed for the purpose of considering the matter:

Chairman: Lieut.-General Sir Alfred Keogh, G.C.B., G.C.V.O., C.H., M.D., F.R.C.P.

Vice-Chairman: Lieut.-General Sir John Goodwin, K.C.B., C.M.G., D.S.O., K.H.S.

Secretary: Captain A. R. Wright, D.S.O.

Regular Army:

Lieut.-General Sir Arthur Sloggett, Kt., K.C.B., K.C.M.G., K.C.V.O., K.H.S.

Lieut.-General Sir Launcelotte Gubbins, K.C.B., M.V.O.

Major-General S. Macdonald, C.B., C.M.G., K.H.P.

Major-General Sir H. R. Whitehead, K.C.B.

Major-General Sir W. G. Macpherson, K.C.M.G., C.B.

Colonel C. R. Tyrrell, C.B.

Colonel O. L. Robinson, C.M.G., K.H.P.

Bt.-Colonel Sir E. Worthington, Kt., K.C.V.O., C.M.G.

Major J. St. A. Maughan, D.S.O.

Captain R. E. Todd.

A sergeant major.

A staff-sergeant.

A private.

Territorial Force:

Major-General Sir Berkeley Moynihan, Kt., K.C.M.G., C.B., F.R.C.S.

Colonel A. D. Sharp, C.B., C.M.G., F.R.C.S.

Lieut.-Colonel A. M. Macintosh, M.B., F.R.C.S.

Major E. B. Waggett, D.S.O.

Captain G. T. Willan, D.S.O.

Special Reserve:

Lieut.-Colonel A. A. Watson, D.S.O.

Major S. G. McAllum, M.D.

Captain J. G. McCutcheon, M.B.

Temporary Commissioned Officers:

Colonel Sir T. Crisp English, K.C.M.G., M.B., F.R.C.S.

Major P. Turner, M.B., F.R.C.S.

Captain A. R. Owst, F.R.C.S.

Consultants:

Major-General Sir George Makins, G.C.M.G., C.B., F.R.C.S.
Major-General Sir Bertrand Dawson, G.O.V.O., C.B., M.D.
Major-General Sir Anthony Bowlby, Knt., K.C.M.G.,
K.C.V.O., C.B., F.R.C.S.
Brevet Colonel Sir W. Hale White, K.B.E., M.D.
Sir Norman Moore, Bt., M.D., President Royal College of
Physicians.

Ireland: Colonel W. Taylor, M.B., F.R.C.S.

Scotland:

Colonel H. M. W. Gray, C.B., C.M.G., F.R.C.S.
Colonel Sir H. Stiles.

It will be seen that the committee contains representatives of the Regular, Territorial, Special Reserve, and Temporary Commissioned Officers. This committee has recommended:

1. That a permanent memorial or monument be erected in London, with, if possible, replicas in Dublin and Edinburgh.

2. That a fund be formed from which grants in aid be given to the families of officers, non-commissioned officers, and men of all branches of the Royal Army Medical Corps who have fallen or been disabled in this war, or who may be in necessitous circumstances owing to the exigencies of military service.

3. That scholarships or memorial prizes for officers and men of the Royal Army Medical Corps be founded for research work.

Field Marshal H.R.H. The Duke of Connaught, K.G., has graciously consented to be Honorary Chairman of the Committee.

There is reason to believe that others outside the Royal Army Medical Corps are desirous of being permitted to subscribe to this memorial. It is therefore proposed not to limit subscribers to officers and men who have served with the Corps but to accept subscriptions from individuals who may be sympathetic with the object and wish for various reasons to take part in the project.

In order to attain the objects aimed at in an adequate manner a considerable sum of money will be necessary.

During the course of the war 17,338 officers and 179,711 other ranks have served in or with the corps. There is, therefore, confidence that an amount commensurate with the needs will be obtained if the project can be brought to the notice of all now serving and of those who have returned to their civil occupations, as well as to the notice of members of the general public who may be desirous of subscribing. Subscriptions may be sent to Messrs. Holt and Co., 3, Whitehall Place, and marked R.A.M.C. War Memorial Fund.—I am, etc.,

T. H. J. GOODWIN,
Lieut.-General, Director-General
Army Medical Service.

War Office, Adastral House,
Victoria Embankment, E.C.4.
April 28th.

HYPNOTISM, SUGGESTION, AND DISSOCIATION.

SIR,—Dr. W. Brown is good enough to inform the readers of *The Times* (in other words) that my medical knowledge and practice are forty years behind the time, and that I am ignorant of the dissociation hypothesis, which he calls both a theory and a fact, and which he is so good as to explain to me. The columns of *The Times* are not very appropriate for a medical discussion, and with your permission I will change the venue.

It is no doubt a fact—or a theory—that I am a superannuated old foggy, unentitled to give myself airs on the ground of being up to date; but I have not been asleep during the whole of the last forty years, and in fact—or theory—in my waking moments I attended the birth of the dissociation hypothesis, discussed it with its author, reviewed his book, and have watched the career of the theory—or fact—ever since; and I still keep by me that suit of mourning in which I have followed so many medical theories—or facts—to the cemetery.

Youth will be served, and I accept meekly Dr. Brown's suggestion of my old-foggydom, but I am haunted by the words of another and still older foggy: "Doubtless," said he to the Dr. Browns who were trying to bring him up to date, "doubtless ye are the people, and wisdom will die with you. But I have understanding as well as you. . . . Yea, who knoweth not such things as these?"—I am, etc.,

Parkstone, Dorset, April 28th.

CHAS. MERCIER.

FACTORY MEDICAL OFFICERS.

SIR,—May I beg the hospitality of your correspondence columns in order to ask those of our colleagues who, like myself, have been, or are, full time medical officers to factories, whether, in view of the probable development of a widespread (but not necessarily State) medical service, they consider it would be desirable to form a small association for our mutual help and for profitable discussion of the problems of which we alone fully realize the immense importance to the nation, the factory, and the worker?

A provisional committee has been formed, and it is hoped that a meeting may be arranged at an early date. I am acting as secretary for the occasion, and so shall be very glad to hear from any or all of them their views on this matter. Perhaps later on we may encourage the managerial element to join us, as so much good for the factory and workers results from friendly discussion between the medical and other heads of departments, that it will be worth while developing this principle on a larger scale, the main result of which should be the education of the lay element in the sound principles of medical supervision of the health and energy of the industrial worker, especially whilst at work.—I am, etc.,

H. GEORGE P. CASTELLAIN, M.A., M.D.,
Medical Inspector to Ministry of Pensions, formerly P.M.O.
to Nos. 6, 13, and 14, National Shell Filling Factories.
London, S.W.1, April 25th.

. It would, we suggest, be desirable that further particulars should be given of the scope of this proposed new society. There is already a Certifying Factory Surgeons' Association, and the multiplication of medical organizations to deal with the same medical field is not free from objection.

WELSH MEDICAL COMMITTEE.

SIR,—The Association had just before the outbreak of the war finally decided to establish a Welsh Medical Committee on precisely similar lines to the Irish and Scottish Committees. For certain reasons connected with the war the scheme was not put into operation at the time.

The moment, however, is now opportune, and indeed clamant, to call this statutory committee into active being, for Parliament has very properly decided that Wales must have under the Ministry of Health Act a separate Board of Health, to be located in Wales itself, such Welsh Health Board to deal with National Insurance, housing, and all other health matters in their bearing on the Principality.

When established, such Welsh Medical Committee could immediately enter into dealings with the Welsh Health Board on all health matters appertaining to Wales.

When then, Sir, shall we hear of the Welsh Medical Committee of the British Medical Association holding its first meeting?—I am, etc.,

E. LLOYD OWEN, M.D.,
M.O.H. for South Carmarthenshire.

Criccieth, April 21st.

. At its meeting on April 16th the Council of the British Medical Association decided, on the recommendation of the Organization Committee, that the Welsh Committee which has not been called together during the war, should meet at an early date and that the Medical Secretary should attend the first meeting.

Universities and Colleges.

UNIVERSITY OF DUBLIN.

THE following medical degrees were conferred on April 24th:

M.B., B.Ch., B.A.O.—J. J. G. De Kock, Rita Henry, J. E. Hill, J. T. Myhardt, R. Resneskov, R. B. N. Smart, F. J. Smith, A. J. Vorster, A. L. Wilson.

M.D.—J. Colgan, C. D. Pile, J. Speares, G. F. Wicht.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary comitia was held on Thursday, April 24th, at 5 p.m., the President, Dr. Norman Moore, occupying the chair.

On the report of the Censors Board, the name of Mr. Thomas Stoney Sharpley was expunged from the list of Licentiates.

The following candidates, having passed the required examination, were elected as Members:

Alfred Douglas Bigland, M.D., Liverpool; Hugh Hadfield Carleton, M.D., Ox.; Walter d'Esté Emery, M.D., Lond.; Charles Leonard Gihblett, M.D., Camb.; Wm. Henry Parkes, M.B., Edin.; John Alfred Ryle, M.B., Lond.; Alfred Bertram Soltan, M.D., Lond.; John Forbes Ward, M.B., Manch.

Licences to practise physic were granted to 76 candidates who, having conformed to the by-laws and regulations, had passed the required examinations.

The following Members were elected to the Fellowship on the nomination of the Council:

John Douglas Stanley, M.D. Edin.; Ernest Bosdin Leech, M.D. Camb.; Henry Devine, M.D. Lond.; Henry Lethbey Tidy, M.D. Oxf.; George Augustus Auden, M.D. Camb.; David Henriques De Souza, M.D. Lond.; Alexander Edward Gow, M.D. Lond.; Cuthbert Allan Sprawson, M.D. Lond.; Frederic Percival Skeogh, M.D. Bristol; Albert Ernest Naish, M.D. Camb.; Robert Skeogh Frew, M.D. Edin.; George Herbert Hunt, M.D. Oxf.; Philip Hamill, M.D. Camb.; James Leatham Birley, O.B.E., M.B. Oxf.

Dr. Sidney Martin was appointed, on the nomination of the Council, a representative of the College on the Senate of the University of London.

On the recommendation of the Committee of Management, approval was given to the addition of St. Peter's School, York, to the list of institutions recognized for instruction in chemistry and physics, and of the Perse School for Girls, Cambridge, for instruction in chemistry, physics, and biology; also of the addition of the University of Texas to the list of institutions whose graduates in medicine are admissible to the Final Examination of the Examining Board in England under paragraph IV, Section III, of the Regulations.

Books and other publications presented to the library during the last quarter were received and the thanks of the College accorded to the donors.

After some formal business the President dissolved the comitia.

The Services.

CREATION OF DIRECTORATES OF HYGIENE AND PATHOLOGY WITHIN THE ARMY MEDICAL DEPARTMENT.

THE sanction of the Treasury has just been given to a scheme put forward by the Director-General, Army Medical Service, with a view to linking up, under a definitely planned organization, the activities of the different departments and individuals hitherto concerned with the various problems of preventive medicine, pathology, and tropical diseases, bearing upon the health of the army in peace and war.

The need for such a reorganization had long been felt by many of those officers of the R.A.M.C. engaged in hygienic or pathological work, and efforts had already been made, prior to the war, towards an improved system. It was not, however, until the progress of the war brought wider recognition of the far reaching benefits of scientific research, and a fuller realization of the amount of training, work, and organization required to obtain the best results from such research, that the urgent need for a better system became manifest.

The principal objects which were in view in the formulation of the scheme outlined below were as follows: (1) To utilize to the fullest extent the benefits of new knowledge, as these become available, through close co-operation between those working within and outside the army, and by initiating and controlling research work in connexion with problems affecting the health of the troops. (2) To raise the standard of sanitary and pathological work in the army by creating within the Army Medical Department such an organization as will ensure this co-operation, and will at the same time furnish inducement to officers who have specialized in these subjects to continue to work therein. It is also hoped that the improved prospects now opening up may encourage young medical men whose bent and inclinations lie in these directions to enter the service.

The scheme to which approval has now been given may be outlined as follows:

1. Two new Directorates, of Hygiene and Pathology respectively, have been created under the Director-General, Army Medical Services, as a part of the War Office organization of the Army Medical Department. These Directorates will be directly responsible to the Director-General for all matters relating to their respective spheres, and they will take over from the various branches of the Army Medical Department the sections of this work which have hitherto been distributed among those branches.

2. The following administrative staff appointments have been authorized, conforming as regards conditions of appointment and tenure to those of D.M.S., D.D.M.S., A.D.M.S., and D.A.D.M.S.

- (a) Director of Hygiene (D.H.);
Director of Pathology (D.P.).
- (b) Deputy Director of Hygiene (D.D.H.);
Deputy Director of Pathology (D.D.P.).
- (c) Assistant Director of Hygiene (A.D.H.);
Assistant Director of Pathology (A.D.P.).
- (d) Deputy Assistant Director of Hygiene (D.A.D.H.);
Deputy Assistant Director of Pathology (D.A.D.P.).

3. The above appointments will carry with them the following ranks:

- (a) Directors—Brigadier-General (but may be held by a Major-General if selected for promotion to this rank in the ordinary course).
- (b) Deputy Directors—Colonel.
- (c) Assistant Directors—Lieutenant-Colonel.
- (d) Deputy Assistant Directors—Major.

Officers selected for appointment to any of these charges, if not already holding the substantive ranks indicated, will be given the appropriate temporary rank, together with the pay and allowances of that rank, for as long as the appointment is held.

4. *Establishment.*—Sanction has been given to the new Directorates and to the following establishment of the cadres in the Commands for a period of two years, at the end of which time the latter will be subject to revision in the light of the experience by that time acquired as to its adequacy. The appointments will be filled up as soon as the final disposition and strength of the troops to be stationed at home and abroad have been settled, and as suitably qualified officers become available.

War Office:

Hygiene.	Pathology.
1 Director.	1 Director.
1 Deputy director.	1 Deputy director.
1 Assistant director.	1 Assistant director.

Home (exclusive of professional staff of R.A.M. College):

9 Assistant directors.	8 Assistant directors.
21 Deputy assistant directors.	17 Deputy assistant directors.

Abroad (excluding India):

1 Assistant director.	1 Assistant director.
6 Deputy assistant directors.	8 Deputy assistant directors.

* Of whom 5 will also act as D.A.D.'s of Hygiene.

5. *Advisory Committee.*—It has been decided to appoint such Committees in connexion with each Directorate to assist the Director in technical matters. They will be composed of both military and civilian members, and the following are the constitutions which have been approved:

(a) Hygiene Advisory Committee.

- The Director of Hygiene (Chairman).
- The Deputy Director of Hygiene (Vice-Chairman).
- The Professor of Hygiene at the R.A.M. College.
- A representative of the War Office Directorate of Fortifications and Works.
- A sanitary engineer.
- A civil professor of hygiene or M.O.H. of a county or large city.
- A physiologist.
- A representative of the Medical Department of the Local Government Board.

(b) Pathological Advisory Committee.

- The Director of Pathology (Chairman).
- The Deputy Director of Pathology (Vice-Chairman).
- The Professor of Pathology, R.A.M. College.
- The Professor of Tropical Medicine, R.A.M. College.
- Two civilian professors or recognized experts in pathology.
- A civilian professor or expert in tropical medicine.
- A representative of the Medical Research Committee.

6. *Organization for War.*—A similar scheme for the co-ordination of hygiene and pathology work in the field, together with the establishments considered necessary under various circumstances, has also been drawn up, but need not be described here.

EAST AFRICAN CAMPAIGN.

LIEUT.-GENERAL SIR J. L. VAN DEVENTER, Commander-in-Chief, East African Force, in his dispatch dated Pretoria, January 20th, 1919, regarding the operations in East Africa from September 1st, 1918, to the conclusion of hostilities, after referring to the progress made by the troops under his command, says:

Perhaps the greatest problem of all was that of health. No country is more rife with disease than tropical Africa, our greatest enemy being malaria, which thinned the ranks of the force to an alarming extent. Towards the end of the campaign, also, the troops suffered severely from Spanish influenza. These and other diseases filled our hospitals to an extent which taxed the medical services to the utmost; and, in spite of all their care and devotion, claimed a far larger number of victims than the weapons of the enemy.

INDIAN MEDICAL SERVICE.

NEW RATES OF PAY (MILITARY).

THE Secretary of State for India in Council, in announcing recently to the deputation from the British Medical Association the introduction, with effect from December 1st, 1918, of improvements in the rates of pay for permanent officers of the Indian Medical Service, stated that the detailed rates of pay to give effect to this decision were being worked out in India.

The detailed rates of pay for the military side have now been received, and are as follows (the rates of pay in force before December 1st, 1918, for officers in permanent medical charge of regiments are given in column 2 for comparison):

	(1) New Rate.	(2) Old Rate for Charge of a Regiment.
	Rs. p.m.	Rs. p.m.
Lieutenants	750	(450)*
Captains	700	(550)
Captains (after 5 years' total service) ...	750	(600)
Captains (after 7 years' total service) ...	800	(650)
Captains (after 10 years' total service) ...	900	(700)
Majors	1,000	(800)
Majors (after 3 years' service as such) ...	1,100	(900)
Lieut.-Colonels	1,550	(1,250)
Lieut.-Colonels (of over 25 years' service) ...	1,600	(1,300)
Lieut.-Colonels (selected for increased pay) ...	1,450	(1,400)

These rates are consolidated, and include charge pay for the command of station hospitals.

The new rates of pay for certain of the higher military appointments are as follows:

	Rs. p.m.
D.D.M.S. (if held by a Major-General)	2,650
D.D.M.S. and A.D.M.S. (if held by a Colonel)	2,150
A.D.M.S. of Aden: Inspector of Medical Services, Army Headquarters	1,950
A.D.M.S. in the Field (when held by an officer below Colonel's rank)	1,950
Officer Commanding general hospital in the field of 500 beds	1,700
A.D.M.S., Army Headquarters	1,700

(These new rates have been arrived at by adding approximately 33½ per cent. to that portion of the old rates of consolidated pay for these appointments which represented grade pay.)

The detailed rates of civil pay are not yet available, but it is hoped to announce them shortly.

Adjustments of pay to give effect to the new rates will be carried out as soon as possible.

*In the case of a Lieutenant the rate for an officer in officiating charge only has been shown, as this is the most probable position of a Lieutenant.

Obituary.

WILLIAM GEMMELL, M.B., C.M., F.S.A.Scot.

Much regret is felt by the medical profession in Glasgow at the death of Dr. William Gemmell, at the age of 59, which took place on April 2nd in the Western Infirmary as the result of injuries caused by a motor cycle. Dr. Gemmell was a well known and greatly respected personality in Glasgow, where he was born and educated, and whither he returned after some twenty years' practice in London. He studied medicine in the university, and having graduated M.B., C.M. in 1888, he held resident posts at the Glasgow Royal Infirmary, at the Maternity Hospital, and the Belvidere Hospital. On his retirement from active practice he devoted himself to public work and to literary and antiquarian pursuits, for which he had always had a strong taste. In 1912 he was elected a town councillor and five years later a magistrate of the city. He was a Fellow of the Society of Antiquaries of Scotland and president of the Grand Antiquity Society of Glasgow, and was a recognized authority on the ancient buildings and monuments of Glasgow, upon which he published more than one interesting and learned volume. He took a prominent part in the discussions of the Glasgow Archaeological Society, and in 1911 he organized the domestic section in the Palace of History at the Scottish Exhibition. Beyond his ordinary civic duties as a town councillor, Dr. Gemmell served as convener of the Libraries Committee of the Glasgow Corporation. During the war he received leave of absence from the corporation in order to undertake military duties as a captain in the R.A.M.C.

DR. JAMES HINSHELWOOD, formerly lecturer on ophthalmology at the Glasgow Western Medical School and surgeon to the Glasgow Eye Infirmary, died recently at

Mentone at the age of 60. He was a native of Glasgow, and received his medical education at the University of Glasgow, where he graduated M.A. in 1880, M.B., C.M. in 1884, and M.D. with commendation in 1899. In 1896 he was elected a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow. He made a number of contributions to the literature of ophthalmology, and was the author of *Letter-, Word-, and Mind-Blindness*, published in 1900. He was honorary secretary of the medical section of the Glasgow Medico-Chirurgical Society and a member of the Glasgow Philosophical Society and of the Glasgow Central Division of the British Medical Association.

DR. ROBERT A. NESHAM, of Newcastle-upon-Tyne, died on February 5th in his 50th year. He was educated at Cambridge University, where he graduated B.A. in 1890 and at St. Bartholomew's Hospital. He took the diplomas of M.R.C.S., L.R.C.P.Lond. in 1896, after which he went into practice at Newcastle-upon-Tyne, where he was honorary physician-accoucheur to the Lying-in Hospital, examiner to the Central Midwives Board and examiner under the Workmen's Compensation Act for Elswick Works. He joined the 1st Northumbrian Brigade of the Royal Field Artillery Volunteers as medical officer in February, 1900, attained the rank of surgeon-major in May, 1915, and subsequently retired. He was a member of the Newcastle Division of the British Medical Association.

CAPTAIN JAMES CONNOR MAXWELL BAILEY, O.B.E., R.A.M.C., died in German East Africa on April 13th, aged 40. He was the only son of Mr. L. F. Bailey of Dulwich, and was educated at St. Bartholomew's Hospital, taking the M.R.C.S. and L.R.C.P.Lond. and also the M.B. Lond. in 1901 and the M.D. in 1909. After serving as house-surgeon, gynaecological house-surgeon, and senior house-physician at the West London Hospital, he joined the West African Medical Staff and served in South Nigeria. He took a temporary commission as lieutenant in the R.A.M.C. on March 1st, 1916, and was promoted to captain after a year's service. At the time of his death he held the post of principal medical officer in German East Africa. He received the O.B.E. on January 1st 1919.

CAPTAIN WILFRID STEPHENSON BROWN, R.A.M.C.(S.R.), died on March 27th, on his way home from Mesopotamia, of disease contracted on active service. He was the eldest son of Mr. R. Allen Brown of Bickley, Kent, and was educated at Caius College, Cambridge, where he graduated B.A., and at St. Thomas's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1916. He joined the Special Reserve of the R.A.M.C. as lieutenant in 1917, and was promoted to captain on February 14th, 1918.

Medical News.

COLONEL WILLIAM HENRY WILLCOX, C.B., C.M.G., M.D., has been appointed a Knight of Grace of the Order of the Hospital of St. John of Jerusalem.

A QUARTERLY meeting of the Medico-Psychological Association will be held at 11, Chandos Street, Cavendish Square, London, on the afternoon of May 20th, when Dr. C. F. F. McDowall (Titchhurst, Sussex) will read a paper entitled "The Genesis of Delusions: Clinical Notes."

COLONEL A. W. SHEEN, C.B.E., having relinquished the appointment of consulting surgeon, war hospitals, India, has returned to Cardiff, and Dr. Hildred Carrill, on demobilization from the Royal Navy, to London (146, Harley Street).

AT a pathological meeting of the West London Medico-Chirurgical Society to be held to-day, Friday, May 2nd, at 8 p.m. at the West London Hospital, Dr. J. M. Burnford will read a paper on clinical pathology: its importance in diagnosis and treatment. The annual general dinner of the society will be held on Thursday, July 10th.

A POST-GRADUATE course in neurology will be held at the National Hospital for the Paralyzed and Epileptic, Queen Square, Bloomsbury, W.C.1, from May 5th to July 5th. The arrangements for next week include

demonstrations in the out-patient department and wards on four afternoons, lectures on three afternoons, and surgical operations on Saturday morning.

THE President and Council of the Medical Society of London will be at home to members of the Fellowship of Medicine on Monday next, at 8.30 p.m., at the house of the Society, 11, Chandos Street, Cavendish Square, W.1. At 9 p.m. Sir StClair Thomson will give a short address, with epidiascope illustrations, on John Coakley Lettsom and the foundation of the Medical Society of London in 1773. Afterwards there will be refreshments and smoking. The Society will be pleased to welcome any members of the Overseas Forces now in London.

A SPECIAL meeting of the British Orthopaedic Association will be held at the Liverpool Medical Institution on Friday and Saturday, May 30th and 31st. On the first day a discussion on the treatment of flail joints of the upper limbs will be opened by Mr. Naughton Dunn and Mr. Harry Platt, and Professor F. Wood Jones will speak on the anatomy of snapping hip. Demonstrations will be given by Mr. A. Bocyn Jones and the President, Mr. E. Muirhead Little, and Mr. McCrae Aitken will speak on functions of scar tissue, Mr. Trethowan on the treatment of static disabilities of the feet, and Mr. Dunn on the operative treatment of paralytic talipes calcaneo-cavovaglus. On Saturday demonstrations of patients and operations will be given at the Alder Hey Special Military Surgical Hospital in the morning, and a visit will be paid to the Liverpool Country Hospital for Children at Heswall.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Attitology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

S.H.B. asks for advice as to the most reliable sphygmomanometer which will stand the wear and tear of general practice.

DR. H. FERGIE WOODS (Golders Hill, N.W.3) writes in reply to "S. J. W.," who asks for advice as to treatment of incontinence of urine following a confinement: I would suggest trying *Arnica montana*, 5 drops of a 1 per cent. solution of the tincture taken internally in a little water night and morning for a couple of weeks will probably be found to relieve considerably, if not cure, the condition.

M.D., J.P. writes in answer to the question in last week's JOURNAL (p. 534): *The Justice of the Peace and his Functions on and off the Bench* (J. M. Dent and Sons) will supply your correspondent with all the information he requires in a plain untechnical way. A much larger work is *Stone's Justices' Manual*, published annually, of which a copy is kept in most police-courts. Experience, aided by the advice of the magistrates' clerk or the chief local police officer, will effect the new justice's fitness for his responsible duties.

INCOME TAX.

B. inquires whether sums paid by the Medical Sickness and Life Assurance Friendly Society during the illness of the recipient are liable to tax in his hands.

*. In our opinion, no. The payment of the "sickness" premiums is not a professional expense strictly, and the receipts are equally not received for professional work, and are therefore not "profits or gains" accruing from the profession.

V.A.D. inquires whether the special "service" rate of income tax applies to remuneration paid through the army paymaster for work in a local V.A.D. hospital.

*. The answer is in the negative. Red Cross work must be performed *abroad* to carry with it the right to the reduced scale of taxation, and as the remuneration is apparently received by our correspondent as a "temporary civilian

employee of the War Office," and not as "army pay"—we assume that he is not liable to the ordinary army discipline—that ground of claim also fails.

LETTERS, NOTES, ETC.

PENSIONS FOR HOSPITAL OFFICERS.

SIR WILLIAM COLLINS has received the following letter in reference to his refusal to sign the report to the King's Hospital Fund which stated that a system of pensioning through resort to profit-earning insurance companies afforded the only solution of the problem. Sir William sent a dissentient memorandum setting out the conclusions at which he had arrived.

Seamen's Hospital, Greenwich,
15th April, 1919.

Dear Sir William Collins,

I would be unmindful of the obligation that every hospital employee is under to you for your attitude as a member of King Edward's Fund on the question of pensions, were I not to write and acknowledge what you have done. The hospital official is not so well paid that he can afford a further tax on his limited remuneration, besides which the method of pensioning by the aid of insurance companies debars a hospital from augmenting a pension for particularly meritorious services as provided for in the Act of 1899.

As a secretary with almost the longest service of any other hospital official in London, I beg to thank you, on my own behalf and on behalf of my colleagues, for your signal service and sympathy.

Yours very truly,
P. Michelli, Secretary.

DISCHARGED TUBERCULOUS SOLDIERS.

THE Society of Medical Officers of Health recently pointed out to the Local Government Board that its circular of December 4th, 1918, in regard to the home visiting and after-care of discharged soldiers and sailors suffering from tuberculosis might be interpreted as making the tuberculosis officer directly responsible for measures in this connexion. In reply the Board stated that the circular "was not intended to suggest in any way that the tuberculosis officer should, except as far as his clinical duties are concerned, act otherwise than under the direction of the medical officer of health." The Board added that the position of the medical officer of health in relation to the administration of sanatorium benefit was stated in the third paragraph of their circular letter dated December 6th, 1912, as follows: "The organization of schemes must be undertaken as part of the public health administration of the areas to which they relate, and the medical officer of health should be the chief executive and organizing officer. . . ."

THE GRIEVANCES OF THE SPANISH MEDICAL PROFESSION.

THE indignation felt by the medical profession of Spain at the scurvy treatment they receive from public authorities has culminated in a general movement for redress. Meetings have been held throughout the country, and on March 19th King Alfonso gave an audience to the central executive committee of the Spanish medical associations deputed to lay before him the wrongs suffered by public health and poor law officers at the hands of municipal and other authorities. Special stress was laid on the meagreness of salaries and the lack of provision for the widows and orphans of the victims of professional duty in epidemics. Complaint was also made of the general neglect of medicinal and sanitary matters by the state. His Majesty gave the deputation a sympathetic hearing, listening to them for nearly an hour. He showed a full knowledge of the grievances of the profession, and promised that steps should be taken by the Government to satisfy its legitimate aspirations.

THE appointments of certifying factory surgeons in the following districts are vacant: Ballymacarberry (Waterford), Carleton (Monmouth), Honiton (Devon).

THE following appointments of medical referee under the Workmen's Compensation Act, 1906, are vacant: Rotherham and Sheffield County Courts in Circuit No. 13; East Retford, Doncaster and Thorne County Courts in Circuit No. 18. Applications to the Private Secretary, Home Office, by May 21st.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Seven lines and under	0 6 0
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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Lettssomian Lectures

ON

JAUNDICE: WITH SPECIAL REFERENCE
TO TYPES OCCURRING DURING
THE WAR.*By WILLIAM HENRY WILLCOX, C.B., C.M.G.,
M.D. LOND., F.R.C.P. LOND., COLONEL A.M.S.,
PHYSICIAN TO OUT-PATIENTS, ST. MARY'S HOSPITAL, LONDON.LECTURE I.—PATHOLOGY, DIAGNOSIS, AND
TREATMENT.

THE subject of these lectures—"Jaundice: with special reference to types occurring during the war"—was chosen because it has aroused during the period of the war a great deal of interest, owing to the many new types studied and brought to notice, and because during the last four and a half years a great deal of original work has been carried out on this important subject.

I have personally had the privilege of studying closely some of the new types of jaundice. Thus, in November, 1914, at my out-patient department at St. Mary's Hospital, London, I examined the first case of jaundice recorded¹ as being directly due to the inhalation of the vapour of tetrachloride of ethane; an investigation of this case led on to the discovery of the cause of an outbreak of toxic jaundice occurring at that time amongst aeroplane workers in this country. In this research² Dr. T. M. Legge, His Majesty's Medical Inspector of Factories, and Dr. B. H. Spillsbury, pathologist of St. Mary's Hospital, London, collaborated.

In 1914 and previously the toxicology of the arsenobenzol compounds had been a subject of great interest to me, especially in its relation to toxic jaundice, and in 1916, in conjunction with Mr. John Webster, F.I.C., a record of this work was published.³

In 1915 and 1916, while serving with the Mediterranean Expeditionary Force as consulting physician, I saw a very large number of cases of epidemic jaundice, both in Egypt and in the Dardanelles.

From 1916 to 1919, whilst serving with the Mesopotamian Expeditionary Force as consulting physician, I have had the opportunity of seeing a very large number of cases of jaundice of epidemic type similar to those occurring in the Dardanelles, and also a large number of cases due to such infections as paratyphoid, enteric, and relapsing fever, malaria, etc.

HISTORY.

The word "jaundice" is derived from the French *jaune* (yellow). Wickham Legg gives⁴ several possible derivations for icterus in his work on *Bile, Jaundice, and Bilious Diseases*—namely, "*ικτερις*, the yellow-breasted marten; *ικτερος*, the golden oriole, the sight of which was supposed to cure jaundice, whereas the bird died (Pliny); and *ικτωος*, a kite, from the colour of its eyes."

DEFINITION.

Osler gives the following brief but excellent definition: "Jaundice or icterus is a condition characterized by coloration of the skin, mucous membranes, and fluids of the body by the bile pigment." It must be remembered that jaundice, like albuminuria, is a symptom, and not a disease, and may be met with in a variety of conditions, the common and essential factor being obstruction at some point to the passage of bile along the bile capillaries or ducts.

HISTORICAL.

Jaundice has attracted a great deal of attention in medical literature from the earliest times. There are frequent references to it in the writings of Hippocrates, Galen, and Celsus. Dr. Redman Coxe of Philadelphia, in his work⁵ on the writings of Hippocrates and Galen, gives the following extracts from Hippocrates on the subject:

When jaundice occurs in ardent fever on or after the seventh day, with difficult yet abundant expectoration and the fever does not decline, it denotes that instead of terminating as above an abscess will form in some great tumour with severe pains, or a colliquation from the great heat of the humours.

This is quite a good description of the jaundice of septicæmia or pyæmia. Again from Hippocrates we have:

But in whatever manner ardent fever ends, if jaundice succeeds, sweats and abscesses rarely follow but recovery ensues.

And also from the same author:

If in violent fevers jaundice appears on the seventh, ninth, or fourteenth day, it is favourable provided a hardness does not occur in the right hypochondrium. If so, it is of doubtful character.

Hippocrates gives a guarded prognosis, evidently being familiar with the dangers of suppurative cholecystitis.

Bile was used as a remedy for internal use from the earliest times. *Fel bovinum* of the *Pharmacopœia* is a preparation consisting mainly of salts of the bile acids. Modern research, resulting in the discovery of the bile acids, has led to the use of these constituents of bile as valuable remedies in certain abdominal conditions—for example, cholelithiasis, hepatic conditions, constipation, etc.

In more recent times the exact causation of the various forms of jaundice has led to most interesting discussions, of which full accounts are to be found in the writings of Murchison, Wickham Legg, Budd, Frerichs, Moxon, George Harley, and later of Hunter and Rolleston. Reference to the work done during the war will be made later.

CAUSES.

We shall do well to regard jaundice as being due to a variety of causes. When the great number of chemical poisons which may produce toxic jaundice of similar type is considered we are forced to admit that there must be at least as many bacterial poisons, probably more, which are also capable of producing jaundice of a like type.

There has recently been rather a tendency to narrowness of vision with regard to the causation of infective jaundice of microbic origin. Thus, because a most interesting form of jaundice has been recently proved to be due to an infection by *Spirochaeta icterohaemorrhagiae*, some writers have gone so far as to suggest that this organism is probably the cause of all forms of epidemic jaundice. This standpoint is obviously impossible.

PHYSIOLOGICAL CONSIDERATIONS.

An accurate knowledge of the physiology of the liver and its secretions is the basis of the pathology of jaundice, and further physiological research in this direction is bound to lead to a more accurate conception of the exact causation of the various forms of jaundice.

Bile.

The external secretion of the liver differs from the other digestive secretions in not possessing any marked ferment action on the organic foodstuffs. Only minute traces of a diastatic ferment are present in it. Bile assists in the digestion and absorption of fats, and increases, by reason of the presence of the salts of the bile acids, the rate of action of the pancreatic enzymes. The chemical composition of bile has been carefully studied, and detailed analyses of bile and fistula bile are given in the textbooks of physiology.

The salts of the bile acids are the most important constituents. In carnivora sodium taurocholate occurs and in herbivora sodium glycocholate is present. In man both these salts occur, but the glycocholate predominates in the proportion of 9 to 1.

The bile acids have been isolated in pure condition and their chemical composition accurately determined. Thus each is a compound of cholalic acid with an amino compound. *Glycocholic acid* results from the combination of glycine (amino-acetic acid) and cholalic acid, into which constituents it splits on hydrolysis. *Taurocholic acid* results from a similar combination of taurine (amino-ethyl-sulphonic acid) and cholalic acid.

The bile acids occur in bile as sodium salts, soluble in water and alcohol, but insoluble in ether.

The bile salts are secreted by the liver in the bile, but are reabsorbed in the intestine and carried back to the liver, so that a portal circulation of them occurs. This explains why fistula bile is so deficient in bile salts as compared with normal bile—for example, Copeman and

* Delivered before the Medical Society of London, April-May, 1919.

Winston found in fistula bile from a healthy woman the amount of bile salts to be 0.628 per cent., while Frerichs found normal human bile to contain 9.14 per cent.

The bile salts have most important functions. They markedly accelerate the action of pancreatic enzymes on the organic foodstuffs; they precipitate native proteins, and thus aid in their further hydrolyzation and absorption. In addition they act as solvents of the alkaline earth soaps—namely, those of calcium and magnesium in the intestines—and they are solvents also of cholesterol. No doubt the presence of bile salts in the bile is the chief factor from the chemical point of view in the prevention of the formation of gall stones.

Bile salts taken by the mouth cause an increased flow of bile, and Schafer⁶ regards them as the only true cholagogues. Consideration of their physiological properties points to a more extensive use of bile salts therapeutically. Thus in the treatment of cholelithiasis, since gall stones are composed commonly of cholesterol and calcium bilirubinate, probably the most potent solvent would be a mixture of sodium glycocholate and sodium oleate. The former would dissolve the cholesterol, and the latter would tend to convert the calcium bilirubinate into soluble sodium bilirubinate and calcium oleate, the latter being soluble in the sodium glycocholate.

Bile salts cause a slowing of the pulse, and it is due to their presence in the blood stream in obstructive jaundice that this symptom occurs; they probably also account for some of the other symptoms of this condition.

Bile pigments are important constituents of the bile; by their presence in the blood stream they give rise to the characteristic colour of jaundice.

Bilirubin and its oxidized form biliverdin have the character of weak acids. Their alkali salts—for example, those of sodium, potassium, and lithium—are readily soluble in water, while the alkaline earth salts (those of calcium and magnesium) are insoluble. Free bilirubin is insoluble in water, alcohol, ether, benzene, and glacial acetic acid, but soluble in chloroform. Virchow showed that haematoidin crystals in old blood clots were closely allied to bilirubin, and Schafer⁷ states that they are usually identical.

Hydrobilirubin (reduced bilirubin) has been shown to be identical with urobilin and stercobilin.

Haematoporphyrin, the iron-free derivative of haemoglobin, is isomeric with bilirubin, and on reduction yields hydrobilirubin. The bile pigments are undoubtedly derived from haemoglobin. Nenki and Sieber have shown⁸ that in the liver haemoglobin splits up into haematin and protein, and that haematin loses iron and undergoes hydrolysis, yielding bilirubin. Animals having no haemoglobin in the blood have no bile pigments. Increased destruction of red blood corpuscles or the intravenous injection of haemoglobin, or of distilled water, which has the same effect, result in the formation of bile pigments in increased amount.

It is thus seen that the bile pigments are derived from haemoglobin and are formed almost entirely in the liver where the decomposition of haemoglobin occurs.

Bile pigments, if injected into a vein, are poisonous, they are not normally absorbed from the bile in the intestine, but are converted into stercobilin and evacuated with the faeces.

There is no doubt that further physiological chemical investigations with regard to bile pigments and bile salts, especially with a view to the quantitative estimation by simple clinical methods in the blood and urine, will throw a great deal of light on the pathology of the conditions causing jaundice.

Blankenhorn⁹ has done some good pioneer work in this respect. He examined a large number of cases due to jaundice and conditions associated with it and found that bile pigments may be present in the blood without jaundice. He represents the cholaemia, which he determined by colorimetric methods, quantitatively in figures ranging from 15 to 375. When the degree of cholaemia reaches the figure 40 then jaundice will appear clinically. He finds that bile pigments may be present in the blood, and jaundice result without bile pigments being in the urine. In cases of obstructive jaundice, catarrhal jaundice, secondary anaemia, passive congestion of the liver, and pneumonia, he has shown the quantitative relation of bilirubin in the blood and urine, and he has made similar determinations for urobilin.

He states that the estimation of bile salts in the blood is attended at present with great difficulty.

Blankenhorn's work is undoubtedly most valuable, and its further development should enable important diagnostic tests to be made in diseases like relapsing fever, spirochaetosis icterohaemorrhagica, etc., where jaundice is usually a prominent symptom, though it may be absent. Also in the early stages of conditions, such as T.N.T. poisoning, which will ultimately develop jaundice, an early diagnosis might be made, and this would be of great value from the point of view of prevention and treatment.

Cholesterol may be present in bile in amount ranging from 0.5 to 5 per cent. It is excreted by the bowel, not being reabsorbed. As is well known, it is an important constituent of gall stones, and its solubility in bile salts has been alluded to as an important factor in the prevention of the formation of gall stones.

Leeithin is a lipid compound of choline, oleic acid, glycerin, and phosphoric acid. It is a product, like cholesterol, of nervous metabolism, and is an important constituent of bile which is not reabsorbed by the bowel; like cholesterol, it is kept in solution by the bile salts.

FUNCTION OF LIVER IN RELATION TO FAT METABOLISM.

Major Alexander G. R. Foulerton¹⁰ has, in a most interesting paper, brought out the relation of this function of the liver to certain forms of toxic jaundice. Normally available organic fat is stored up in the liver, and has a high iodine value, being composed of a large proportion of unsaturated fatty acids. Leathes has shown that in chloroform and phosphorus poisoning the liver becomes engorged with fat which has a low iodine value, being composed of a large proportion of saturated fatty acids.

Foulerton has shown that in poisoning by trinitrotoluene, dinitro benzene, phosphorus, chloroform, ether, and tetrachlorethane, impaired fat metabolism occurs as a consequence of impaired action of the liver cells due to toxic chemical influences.

Thus the liver in these conditions becomes engorged with fat of low iodine value. The engorgement of the liver with fat is a concomitant of the occurrence of jaundice in the early stages of many forms of toxic jaundice, and it is perhaps to some extent a contributory factor.

GLYCOGENIC FUNCTION OF THE LIVER.

This has been fully studied by physiologists. It is interesting to note that the occurrence of glycosuria has sometimes been observed in cases of jaundice. For example, Garrod¹¹ records a case of glycosuria in catarrhal jaundice. Glycosuria has been also observed in biliary colic, phosphorus poisoning, etc. I have on several occasions found glycosuria of a transient nature in jaundice cases.

FUNCTION OF LIVER IN PROTEIN METABOLISM.

The most important function of the liver is the part it plays in breaking down the complex products of protein metabolism into simple nitrogenous compounds—for example, urea, uric acid, hippuric acid, etc.—which are excreted by the kidney. If this function of the liver fails, then intermediate products of protein metabolism occur in the blood, and speedily symptoms of the gravest kind, usually fatal, result—as, for example, in icterus gravis.

The symptoms of icterus gravis, or acute yellow atrophy of the liver, are undoubtedly due to an autointoxication, but what the exact chemical compounds of protein metabolism are which cause this condition we do not know. A great field of research is here open to physiological and pathological chemists.

CLASSIFICATION.

All cases of jaundice may be classed in the two great divisions: (1) Simple obstructive jaundice; (2) haemohepatogenous or toxæmic jaundice.

SIMPLE OBSTRUCTIVE JAUNDICE.

This type results from obvious mechanical obstruction independent of changes in the blood or bile. Its causes are:

1. Obstruction by foreign bodies within the ducts—for example, biliary sand or calculi, mucus, worms, etc.
2. By inflammatory swelling of the duodenum or the mucous membrane of the duct, as in ordinary catarrhal jaundice.
3. By stricture or congenital deficiency of the duct.
4. Tumours closing the orifice of the duct or growing in its interior.

5. By pressure on the duct from without from various causes—for example, enlarged glands in the portal fissure, tumours of the liver, stomach, pancreas, kidney, omentum, faecal accumulation, abdominal aneurysm, etc.; movable kidney, pregnant uterus, also inflammatory processes adjacent to the bile ducts—for example, perihepatitis, cirrhosis of liver, periduodenitis, etc.

Symptoms of Simple Obstructive Jaundice.

In this condition a relatively undamaged and functioning liver exists with simple obstruction of the flow of bile, so that, apart from the symptoms due to absorption of the bile into the circulation, the condition of the patient remains good. It is remarkable how few toxic symptoms occur in cases where the most pronounced simple obstructive jaundice may have existed for weeks or months. In this condition the "cholaemia" reaches a high degree both as regards bile pigments and bile acids, and both exist in relatively high amount in the urine. The sweat contains bile, but the saliva, tears, and milk are rarely stained. The cerebro-spinal fluid and central nervous system remain unstained.

The icterus or tinting of the skin and conjunctivae ranges from a lemon yellow in the early stages to a deep yellow, olive green, or greenish-black colour in cases of long duration. Skin affections, such as pruritus, which may be of a distressing type, sweating, lichen, urticaria, and boils, may occur. Xanthoma and telangiectases may be observed in advanced cases. It is important to remember that skin affections due to the cholaemia of jaundice are almost invariably absent in haemo-hepatogenous jaundice.

The urine has a marked brownish-yellow colour, but may be tinted greenish or be blackish-green if the bilirubin present has undergone oxidation to biliverdin. The froth caused by the shaking of a urine containing bile is unusually permanent and is markedly stained; this is a good rough test.

Bile pigments are detected by Gmelin's test, or better by Trouseau's iodine test, in which a very dilute alcoholic solution of iodine is poured carefully into a test tube so that the iodine solution floats above the urine; a greenish zone gradually develops between the two layers. These tests should be made in good daylight.

Bile acids may be tested for by Hay's sulphur test, or the more delicate peptone test of Oliver.

In the urine albumin and bile-stained casts may be present in long-standing cases.

The stools are of a pale drab or slate-grey colour; they are usually very fetid and pasty. Daily inspections should be made, since, when the obstruction is complete, yellow colour is absent continuously, while with a partial or intermittent obstruction some altered bile pigments may give a yellowish appearance to some of the stools. With complete obstruction the percentage of fat in the stools is usually from three to six times the normal. Also the fluorescence test for stercobilin with zinc chloride and ammonia becomes only slightly marked or absent.

The pulse is markedly slowed in the early stages, due to bile acids in the blood. It may fall to 30 or 40. In the later stages the pulse increases in frequency, because the production of bile acids by the liver has diminished, and the kidney has gradually got rid of the excess in the blood. Further, the cause of the obstructive jaundice in a prolonged case probably has, *per se*, an accelerating effect on the pulse-rate.

Haemorrhages and a tendency to bleeding are characteristic of a chronic case. The blood coagulation time has been shown to be much prolonged.

Cerebral symptoms, irritability, depression, and even melancholia, may occur. A special terminal phase, sometimes known as "cholaemia" or "cholestaemia" (which rapidly proves fatal), may terminate long-standing cases. This condition is probably identical with the symptom-complex of icterus gravis or acute yellow atrophy, and is due to an autointoxication caused by the impairment of function of the liver cells in dealing with the products of protein metabolism. The symptoms are not due to the action of bile or cholesterol in the blood, so that the terms "cholaemia" or "cholestaemia," as applied to this condition, should be abolished.

Diagnosis.—In this type of jaundice a careful physical examination and the usual methods of clinical investigation will reveal, usually the cause of the simple obstructive jaundice.

HAEMO-HEPATOGENOUS OR TOXAEMIC JAUNDICE.

This form of jaundice is caused by the circulation in the blood of toxic substances of chemical or microbic origin, as a result of which occur destruction of red blood corpuscles, an obstructive catarrh of the small intrahepatic bile ducts, an increased viscosity of the bile, and in severe cases a degeneration of the liver cells, resulting in auto-intoxication (icterus gravis).

The following varieties occur:

1. *Toxic.* Jaundice, sometimes known as "toxic jaundice," due to the action of chemical poisons, such as tetrachlorethane, trinitrotoluene, chloroform, phosphorus, toluylene-diamine, nitrobenzenes, nitrophenols, arsenobenzol derivatives, arseniuretted hydrogen, mushrooms, snake venom, etc.

2. *Microbic.* Jaundice due to the microbic toxins formed in various specific fevers and infections, such as relapsing fever, malaria, the enteric group of disease, typhus, pneumonia, influenza, syphilis, yellow fever, pyaemia, septicaemia, etc. In this group should be included infective jaundice due to *Spirochaeta icterohaemorrhagiae*, and probably epidemic catarrhal jaundice and Weil's disease.

3. *Blood Diseases.* Jaundice associated with splenic anaemia, pernicious anaemia, acholuric jaundice, haemoglobinuria, etc.

In haemo-hepatogenous jaundice the obstruction caused by inflammatory catarrh of the smaller intrahepatic ducts is not usually complete, so that many of the symptoms due to the direct action of bile in the circulation as described under simple obstructive jaundice are absent. Thus the skin complications and the slowing of the pulse are not present in toxæmic jaundice. In it the yellow coloration of the skin is usually much less pronounced, and in cases in which it becomes deep the complete intrahepatic obstruction is only temporary, and does not last long enough to cause symptoms of bile toxæmia. The stools may be pale for a day or two during the stage of temporary complete obstruction, but usually are well coloured with faecal pigment.

The urine in cases of marked jaundice will contain bile pigment, which in milder cases is often absent. Bile salts are generally absent, since their rate of production is diminished owing to defective liver function in consequence of the toxic agent causing the jaundice.

The blood contains bilirubin, and when this reaches a certain degree jaundice will occur. At about this stage bilirubinuria will be recognized; exceptionally it may appear before the jaundice, but usually occurs afterwards.

In haemo-hepatogenous jaundice the symptoms due to the jaundice *per se* are unimportant as compared with those due to the primary intoxication. Thus with chemical poisons the action of the substance on the body generally, and especially on the liver cells, in causing autointoxication is much more profound than the mere effect on the bile capillaries, causing jaundice.

In the case of microbic poisons the action of their toxins in causing the specific symptoms of the disease—for example, malaria, relapsing fever, enteric, influenza, etc.—is much more important than the symptoms resulting from the mere production of jaundice, the latter being quite overshadowed by the former. In toxæmic jaundice the blood shows a great liability to haemolysis, the red corpuscles are smaller and have increased fragility. In simple obstructive jaundice the red corpuscles are larger and show increased resistance to haemolysis (Chauffard).¹²

Severe constitutional symptoms are much more marked generally in toxæmic jaundice, and in this condition the grave and fatal symptoms of icterus gravis are much commoner and likely to occur very much earlier in the disease.

PATHOLOGY OF JAUNDICE.

* In simple obstructive jaundice due to mechanical obstruction of the common or larger bile ducts the causation is clear. Bile cannot pass *per vias naturales*, and it thus becomes dammed back and is absorbed by the lymphatics, and, in severe cases, probably also by the blood capillaries of the liver. Adami¹³ quotes the following experimental proof of the probability of direct passage of bile into the hepatic blood capillaries as well as lymphatics in obstructive jaundice. If in a dog the common bile duct be tied jaundice results quickly. If at the time of tying the bile duct the thoracic duct be also tied, jaundice will still

occur, but its onset is usually delayed. Bile is thus conveyed into the blood stream, jaundice resulting, and the blood and urine containing both bile pigments and bile acids.

In *haemo-hepatogenous or toxic jaundice* the causation is different. Toxic substances, whether of bacterial or chemical origin, circulate in the blood; they cause a certain amount of destruction of red blood cells, the products of which are conveyed to the liver, in company with the circulating poison. The poison or its products have a direct action on the liver cells, causing a degeneration. They also act on the bile capillaries, causing inflammatory catarrh, as a result of which the secretion of the bile capillaries becomes very viscid and the lumen of the fine ducts narrowed. In this manner an intrahepatic obstruction to the flow occurs in the fine bile ducts, and bile pigments find their way into the blood stream via the lymphatics, and probably also by the blood capillaries. The absorbed bile in toxic jaundice is usually rich in bile pigments, which arise from the increased destruction of haemoglobin; it is deficient in bile salts, owing to the impaired function of the liver cells.

When the bilirubinaemia reaches a certain degree jaundice occurs, and at a still higher percentage bilirubinuria. Bile salts are not usually passed in the urine, since their percentage in the blood is too low, but in some cases they occur in small amount.

The above expression of the pathology of toxic jaundice is the result of the work of Stadelmann¹⁴ and his co-workers in 1881 on the action of toluylene-diamine, phosphorus, arseniuretted hydrogen, etc., in causing jaundice. Later Hunter, in 1885 and 1886, by a fine piece of research,¹⁵ placed the causation of jaundice on a still more accurate basis, and his work and conclusions hold good to-day.

The injection of toluylene-diamine into a dog with a biliary fistula was, Stadelmann showed, followed by jaundice, thus proving that the obstruction occurred in the finer ducts. He found that the injection of toluylene-diamine into the blood stream of a dog caused a marked increased destruction of red blood corpuscles. From the second to the twelfth hour after the injection the bile secretion was increased and rich in pigments, then the secretion changed to a viscid colourless one, and from the fourteenth to the sixtieth or seventieth hour this condition remained. Jaundice was marked during the whole of this stage; afterwards the bile became normal and the jaundice cleared up. Bilirubinuria occurred soon after the onset of the jaundice—that is, about the fourteenth hour—but bile salts did not appear in the urine until the thirtieth hour, and they only remained for a few hours.

With phosphorus Stadelmann found a similar condition except that the stages were slower in production; thus the colourless viscid conditions of the bile commenced after twenty-four hours and lasted for five to eight days during which jaundice was present.

With arseniuretted hydrogen he found similar stages to occur, but noticed that the bile pigments were increased much more than with the two previous poisons, though the jaundice was much less marked.

In the above experiments neither haemoglobinaemia or bilirubinaemia occurred in the first stage following the administration of the poison, so that the red cell destruction and conversion of the haemoglobin into bile pigment did not occur in the blood stream but in the liver itself. The production of bile pigments was shown to be quite independent of the formation of bile acids, which latter are produced by the liver cells and have no relation to haemoglobin destruction.

Hunter confirmed Stadelmann's work, and, by careful *post-mortem* and pathological examinations of animals after the administration of toluylene-diamine, showed that a marked inflammatory catarrh occurred of the fine bile ducts. He also found degeneration of the liver cells and engorgement of them with fat; the intralobular bile capillaries were also filled with the remains of haemoglobin and broken down red blood cells.

The duodenum, after a few days' action of the drug, showed a markedly swollen and reddened condition of its mucous membrane with small haemorrhages in places. This inflammatory condition extended for a distance of 12 in. or more below the opening of the bile duct and was obviously due to a catarrh set up by irritating products in the bile. Hunter pointed out that only minute traces of toluylene-diamine were present in the bile, and that the drug, if given by the mouth, did not cause this marked duodenitis. He therefore attributed it to irritant bodies in the bile set up by the action of the toluylene-diamine on the liver.

Hunter pointed out that the catarrh set up in the intrahepatic bile ducts by toluylene-diamine began high up and descended to the duodenum. He considers it likely that in ordinary catarrhal jaundice the catarrh may be of a similar descending

nature. The French school have long held this view, but Murchison taught that the catarrh started in the duodenum and spread up the common bile duct, blocking it or its larger branches.¹⁶

The above experiments showed that the production of jaundice is not directly proportional to the amount of red blood cell destruction. Thus in dogs arseniuretted hydrogen causes great blood destruction and slight jaundice, while toluylene-diamine causes slight blood destruction and deep jaundice.

The same conclusion was arrived at by experiments with toluylene-diamine on the cat, rabbit, and dog. In all the drug caused red cell destruction. In dogs marked jaundice occurred, but no haemoglobinuria. In cats no jaundice resulted, but haemoglobinuria followed. In rabbits neither jaundice nor haemoglobinuria occurred.

Recent histological studies of the liver in long-standing cases of toxic jaundice from tetrachlorethane, trinitrotoluene, etc., by Spilsbury and others, have shown that considerable destruction of the liver cells occurs, and when this destruction is compatible with life the normal liver tissue becomes replaced by tissue of an inflammatory nature, resulting from the absorption of the necrosed liver cells. In this abnormal tissue leakage of bile from the small capillaries into lymphatics and blood vessels no doubt occurs, and is a factor in causing jaundice.

Summary.

The toxic substances causing haemo-hepatogenous jaundice have three important actions:

- (1) Degeneration of the liver cells with impairment of hepatic function;
- (2) Destruction of red blood cells;
- (3) The production of an obstructive catarrh of the fine intrahepatic bile ducts.

Each toxic substance differs in the relative degree of its respective action in these three respects.

Thus, if (1) predominates, only slight jaundice may occur, but the symptoms will be those of autointoxication (*icterus gravis*) and of the gravest character. Examples of this type of poison are arseno-benzol derivatives, chloroform, mushroom poisoning, arseniuretted hydrogen. If (2) predominates, anaemia will be marked and jaundice may be slight only (for example, metadinitrobenzene). If (3) predominates, jaundice will be very marked (for example, in tetrachlorethane, trinitrotoluene, and toluylene-diamine).

Bacterial poisons likewise possess these three actions in varying degree—for example, (1) predominates in yellow fever, (2) in malaria, and (3) in relapsing fever, epidemic catarrhal jaundice, spirochaetosis ictero-haemorrhagica.

Importance of Experiments on Dogs.

Our knowledge of the pathology of toxic jaundice has been of the utmost practical value to the nation during the present war. It rendered possible the early recognition and detection of the cause of the toxic jaundice which was so common amongst aeroplane and munition workers, and it directed the preventive methods which were so successful.

Let us not forget that this knowledge has been gained almost entirely as the result of carefully conducted experiments on dogs, and that in this research other animals, as shown above, were found unsuitable.

It will be nothing short of a national calamity if this source of research is to be denied the medical profession in the future. The recent letters to *The Times* of Professor Schafer and Dr. Leonard Hill express the vital importance of carefully conducted experiments on dogs in scientific research, the knowledge gained by which will be of inestimable practical benefit to the nation. It is sincerely to be hoped that the ill-conceived bill now before Parliament for preventing experiments on dogs will be thrown out.

DIAGNOSIS OF JAUNDICE.

It is important that the examination should be made in daylight, since jaundice is invisible in ordinary artificial yellow light. Special attention should be paid to the examination of the conjunctivae, skin, palate, stools, and urine, as described above.

Care must be taken to exclude the lemon-yellow tint associated with the cachexia of malignant disease or pernicious anaemia. An examination of the conjunctivae

over the sclerotics usually differentiates these. The bronzing of sunburn and the pigmentation of Addison's disease and other conditions are likewise distinguished.

In coloured races sometimes difficulty occurs; thus in some Indians a definite yellow pigmentation of the conjunctivae occurs, giving a characteristic appearance of jaundice. In Mesopotamia I had a Madrassee servant who had markedly yellow sclerotics resembling deep jaundice; this condition was entirely due to pigmentation.

In doubtful cases an examination of the blood serum for bilirubin is of great importance. This test has been used by Dr. Castellani and others in the detection of toxic action of trinitrotoluene on the liver in munition workers before the yellow coloration of the skin has actually developed.

In a case of jaundice careful search should be made by the usual clinical methods for the primary cause of the condition.

TREATMENT OF JAUNDICE.

The important course is the treatment and removal of the primary cause of the condition.

Speaking generally, the diet should be free from fats, since, as pointed out above, there is a tendency for fat engorgement of the liver cells.

Protein constituents of the diet should be reduced, since there is a tendency, especially in toxicæmic cases, to acid intoxication. Alcohol is best avoided. Saline aperients should be given, but powerful purgatives are best avoided. Calomel in small repeated doses is not advisable, since there is a risk of symptoms of mercurial stomatitis developing.¹⁷ Alkalies—for example, sodium bicarbonate—should be given by the mouth in large doses, and in toxicæmic cases¹⁸ strong solutions of sodium bicarbonate may be given by the rectum as frequently as it can be retained.

Any special symptoms will require appropriate treatment as they arise.

FALSE JAUNDICE.

Attempts may be made to feign jaundice by coloration of the skin with saffron or turmeric or other yellow dye (Wickham Legg⁴). Trinitrotoluene produces a yellow staining of the skin, so that munition workers handling this substance are often named "canaries" by their comrades. Since in this condition the conjunctivae are unaffected and the urine and stools are normal, little difficulty in detection is experienced.

During the war picric acid has not uncommonly been taken by malingerers for the purpose of simulating jaundice, and some care is required lest the physician may be deceived.

Cases have been published as occurring in the French and Italian armies. Fontaine studied this condition and published¹⁹ an investigation of several cases. He laid stress on the absence of colourless stools, the less marked staining of the tissues, and the absence of pyrexia and premonitory symptoms before the occurrence of jaundice. He pointed out that the conclusive test was absence of bile pigments in the urine and the presence of the picric acid derivative—picramic acid.

Professor Masuata, in May, 1917, described²⁰ two interesting cases in Italian soldiers of jaundice artificially produced by picric acid. In these cases 1 gram of the drug had been taken every twenty-four hours. The symptoms were nausea, anorexia, coated tongue, and severe epigastric pain. In one case there was a scarlatiniform eruption and pyrexia. The skin and conjunctivae were definitely yellow, and resembled mild catarrhal jaundice. The stools were stained yellow, and the urines gave definite reactions for picramic acid and bile pigments were absent.

The presence of a rash and pyrexia in one of these cases shows the difficulty of diagnosis on clinical observations alone. The only sure test is the presence of picramic acid in the urine.

In large doses picric acid might cause true hæmo-hepatogenous (toxicæmic) jaundice, when both bile pigments and picramic acid would appear in the urine.

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CONDUCTIVE ANAESTHESIA BY THE INTRA-SACRAL EXTRADURAL INJECTION OF NOVOCAIN.*

BY

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THE method about to be described is not, so far as I have been able to discover, in use anywhere in this country. It is exceedingly practical as well as simple and safe, and, in the opinion of those who have developed it, requires only to be better known in order to be widely and usefully employed.

Anatomy.

The dural sheath ends normally at the top of the second sacral segment. From this point downward the sacral and coccygeal nerves run free in the bony canal of the sacrum, surrounded by a little loose areolar tissue, until they make their exits at their respective foramina.

Of the posterior trunks, the first and second sacral supply the integument of the inner aspect of the leg and thigh respectively. The lower sacral and coccygeal branches are distributed to the anus, buttocks, perineum, and part of the skin of the male genitalia. The individual distribution of these lower nerves is not accurately known.

The spinous process of the fifth sacral segment does not exist as a median protuberance, but as two unfused halves (the so-called cornua of the sacrum). The sacral cornua and the tip of the sacrum form an isosceles triangle, of which the apex is directed upwards—the hiatus sacralis, which is the lower termination of the bony spinal canal. This gap is filled in by a dense fibrous membrane.

Since the sacrum is a rudimentary bone many variations from the normal are met in connexion with the hiatus, of which the most important are the following: (1) It frequently replaces the spinous process of the fourth sacral segment as well as that of the fifth, and may run up as high as the second. (2) It is often found slightly to one side of the median line as marked by the anal cleft. (3) One cornu is frequently much more prominent than the other, as if the sacrum were slightly rotated on its long axis. (4) The hiatus is sometimes very narrow laterally, and (5) sometimes very shallow antero-posteriorly—that is, between the occluding membrane and the anterior aspect of the bony canal. In these last two conditions the technique of injection may present some difficulty.

Scope of the Method.

When novocain is injected extradurally into the bony canal of the sacrum, anaesthesia of the third and lower sacral and coccygeal nerves is produced. The motor roots are not affected, and retention of urine after hæmorrhoid operations done with sacral injection is neither more nor less common than when a general anaesthetic is given. The regions supplied by the first and second posterior sacral nerves may undergo a paraesthesia, but are not anaesthetized. This may be because the upper nerves run free for a comparatively short distance in the sacral canal, or because they are large trunks and do not readily absorb surrounding fluid.

The proven field of usefulness for sacral anaesthesia comprises operations for hæmorrhoids, fistulae, and other conditions in and about the anus. The great majority of my cases have been of this sort, and in such one may employ the method with a practical certainty of

*An address given before the Alder-bot Command Medico-Chirurgical Society

success provided the technique of injecting the sacral canal has been mastered. The extent to which the buttocks are involved varies considerably. In some cases the anaesthesia is limited to a circle around the anus three or four inches in radius, while in others almost the whole of the buttocks may be analgesic. There is usually bilateral symmetry of effect. The lower rectum is anaesthetized for at least three inches above the anus.

I have incised several perineal abscesses under the sacral injection of novocain, and have four times operated for urethral stricture—twice by internal urethrotomy and twice by the combined internal and perineal method. In all these cases the anaesthesia was perfect. On the other hand, in several cases where strictures were forcibly dilated with bougies, slight pain was felt. The conclusion from a rather limited experience would seem to be that while sacral anaesthesia is perfect for cutting operations in the urethra, it serves only to diminish the pain of dilating and stretching. Even so, it may have a field of usefulness in cystoscopy and instrumentation.

Cases have been noted where the skin of the scrotum and penis was fully anaesthetized. This is exceptional, and cannot be depended upon.

The war has prevented investigations as to the value of the sacral injection in operations for the repair of the female perineum as well as in combating the perineal pain of parturition. On theoretical grounds it should serve both these purposes. It remains also to be seen whether the method is suitable for perineal operations involving the prostate and bladder. Possibly at the bladder neck a higher sensory nerve supply would be encountered.

Preliminary Hypodermic Narcotization.

Even though an operation under local or regional anaesthesia may be entirely painless, the ordinary patient will be likely to undergo an amount of anxiety and worry equivalent to genuine mental suffering during its performance. This may be obviated by judiciously graded preliminary doses of scopolamine and morphine. The dosage should vary according to (1) the magnitude of the proposed operation, (2) the age, weight, and general physical vigour of the patient, and (3) the patient's mental attitude. To precede a haemorrhoid operation on an average male patient, the following dosage would be suitable:

Two hours before operation—

Morphine	...	...	...	gr. $\frac{1}{10}$
Scopolamine	...	...	...	gr. $\frac{1}{100}$

One hour before operation—

Morphine	...	...	...	gr. $\frac{1}{10}$
Scopolamine	...	...	...	gr. $\frac{1}{100}$

The handling of these drugs cannot be carried out by rule of thumb, but must be adapted to each case. The size of the second dose can often be most nicely regulated after carefully observing the effect of the first. Sometimes a third small injection of scopolamine (gr. $\frac{1}{100}$) is useful just as the operation is about to begin, but this will rarely be necessary in minor cases. It is desirable to have screens around the bed from the time of the first injection, and to forbid all noise and unnecessary talking in the theatre while the operation is in progress. This hypodermic medication is aimed not at all at the relief of pain, but solely at making the patient inclined rather to lie quietly and doze than to take an active interest in what is going on around him. The combination of scopolamine-morphine narcosis with skilful novocain anaesthesia is ideal for both patient and operator.

Technique of Intracanal Injection.

The injection may be made equally well in bed or on the operating table. The former method has the advantage of allowing the patient to rest comfortably for the fifteen minutes that must elapse before anaesthesia is complete. He may be in either of two positions: sitting, with the buttocks projecting well over the edge of the table or stool; or lying on the left side with the legs drawn up, the right one slightly more so than the left. As regards facility of injection, there is little choice between the two positions. From the patient's point of view the second is preferable, particularly if preliminary scopolamine-morphine has been given.

The first step, and a most essential one, is to determine the position of the sacral hiatus. Usually this presents no difficulty, but in patients well padded with fat in that region it may be

almost impossible to recognize the bony landmarks. The routine is as follows: Feel the tip of the sacrum, which usually lies just at the top of the anal cleft and is the lowest prominent bony point of the spine. Then, to make sure that what has been felt is the lower end of the sacrum and not a displaced coccyx, feel the tip of the coccyx in the anal cleft. Next, press the ball of the right index finger, pointing toward the patient's head, firmly against the back of the sacrum at its tip in the median line, and, without sliding the finger along the skin, work slowly up along the dorsal aspect of the bone. The finger will be felt to come into the apex of the inverted V which is formed by the sacral cornua. The common variations from the normal in position and size of the hiatus have already been noted.

The injection is to be made through the approximate centre of the hiatus. The exact site of this point must now be marked out, for, after a superficial injection, the bony landmarks will no longer be palpable. Bearings may be taken relative to the anal cleft and to some such skin mark as a pigmented mole. A more accurate method is to dip a needle in tincture of iodine and to mark out on the lower back and right buttock lines of "latitude" and "longitude," converging at a right angle upon the proper point. Care must be taken not to fall into error through the sliding of skin over bone under pressure of the finger.

An area the size of a florin over the hiatus is now painted with iodine, and a drop of novocain is injected into the skin with a fine sharp needle. Before this is done the patient should be warned that he is about to feel a sharp "pin-prick." Another drop is put into the membrane which occludes the hiatus. This membrane is well supplied with sensory nerves, and, unless these preliminary injections are carefully done, the insertion of a large needle will give considerable discomfort.

The intracanal injection is best made with an ordinary lumbar puncture needle of medium calibre. For insertion into the bony canal this should be equipped with a stylet and detached from its syringe. It is held perpendicular to the plane of the back, passed through the skin over the central point of the hiatus, and pushed on until it encounters the resistance of the fibrous membrane. The outer end of the needle is now carried towards the patient's feet through an arc of 90 degrees in the mid-line of the back, so that the needle lies in the plane of the back, pointing towards the patient's head in the mid-line. During this last manoeuvre care must be exercised lest the point of the needle be displaced from the centre of the hiatus. The needle is now to be pushed as it lies straight up the back. The piercing of the membrane may require some little force, and as this occurs a characteristic "crunch" can be felt and often heard. The needle should be pushed on for about two inches, when its further advance will be blocked by the antero-posterior curve of the sacral canal.

The correctly placed needle will lie in the plane of the back and in the line of the sacral spines. Its point will be movable with fair freedom within a limited range from side to side, but not at all from back to front; it will, of course, not be palpable under the skin.

There are three common errors in the placing of the needle: (1) The needle may lie in the plane of the back and in the line of the sacral spines, being at the same time entirely superficial to the sacrum. In this case the needle point will usually be visible and palpable when it is moved, and there will be superficial oedema when the solution is injected. (2) The needle may enter the mass of muscle at one side or the other of the sacral spines. In this event it will have an obvious inclination toward the anterior aspect of the patient instead of lying in the plane of the back; it will also deviate somewhat laterally from the line of the spines. (3) In many cases where the needle has entered the sacrum correctly its point catches under the periosteum lining the canal. When this happens, the lateral mobility of the needle is lost, and very great force is required to make the injection.

If at the first attempt one fails to place the needle correctly the best plan is to withdraw it entirely, and to try again after carefully noting the markings of the hiatus. Provided the preliminary injections have been efficiently done, one may "feel" for the membrane with the point of the large needle, but this will be a hopeless task unless the original "geometry" has been accurate. If the third of the above errors be encountered, the needle should be withdrawn about half an inch and rotated on its own axis through 180 degrees.

The stylet is now removed from the needle. No cerebro-spinal fluid should, of course, appear. It is impossible to tap the spinal theca by this route unless one of three conditions exists:

1. An abnormally low dural sheath.
2. An abnormally capacious sacral canal antero-posteriorly.
3. A curved needle.

Nevertheless, in one case indirectly known to the writer this accident occurred. The full dose of novocain was injected, fortunately with no worse result than an anaesthesia of the lower half of the body lasting forty-eight hours.

The injection now used is 20 c.cm. of a 2 per cent. solution of novocain in sterile water to which have been added five drops of 1 in 1,000 adrenalin. Formerly the same quantity was employed of a solution containing novocain 2 per cent., sodium chlorate $\frac{1}{2}$ per cent., sodium bicarbonate $\frac{1}{2}$ per cent.

According to a French writer, the sodium salts favour the absorption and retention by nerve trunks of a surrounding

fluid. Clinically the results have been the same, whether or not these salts were present in solution. It will be noted that the amount of novocain exceeds 6 grains. I have repeatedly used as much as 15 grains in a local or regional anaesthesia, and have seen 35 grains injected without the slightest evidence of toxicity. Such trouble arises much oftener from old and decomposed adrenalin than from novocain.

There is great individual variation, not only in the capacity of sacral canals, but also in the tightness with which the orifices are plugged by soft parts. Hence the resistance encountered in making the injection is variable. In many cases the solution goes in quite as readily as though the syringe were being emptied into the air. A fair degree of ease is the rule. Not uncommonly, however, considerable force is necessary. When such is the case, one should always suspect that the point of the needle may be engaged under periosteum instead of lying free in the sacral canal. Superficial oedema over the sacrum should be carefully watched for during injection; its appearance is conclusive proof that the needle is not within the canal. When the injection is correctly made, patients often note a transient dull ache down the inside of the thighs and legs—a result of pressure on the first two posterior sacral roots. This symptom is presumptive evidence of success in placing the needle. As soon as the full amount is injected the needle is withdrawn with a quick movement. As a rule, no dressing is necessary over the puncture.

Injections of the sacral canal in the cadaver with methylene blue show that the solution travels up extradurally to a variable extent into the lumbar region. This of course does no harm, except that some fluid is lost from the sacrum. To combat this by the aid of gravity it is advisable to place an extra pillow under the shoulders of the patient as he rolls over on to his back.

It is necessary to wait fifteen minutes for the development of the anaesthesia. This rarely takes longer; often it is complete in ten or twelve minutes. During this interval the patient should lie quietly, and should not be disturbed by talking or the rattling of instruments. His pulse and colour should be watched. If preliminary morphine and scopolamine have been given, he will probably doze. Scopolamine produces a very dry mouth, and water may be given if desired.

Preliminary tests of anaesthesia are likely to be misleading. The pressure sense is often retained where the pain sense is lost, and if the buttock is poked with a needle the patient is sure to state that he feels it. One often hears men inexperienced in local anaesthesia repeatedly asking such questions as "Does it hurt?" or "Do you feel that?" before and during an operation. If it does hurt, the patient will certainly not conceal the fact. Such interrogations are the worst possible psychotherapeutics. A fairly satisfactory test is to pick up the skin near the anus with a sharp-pointed towel-clip, or to put a pair of forceps on a projecting haemorrhoid. But the real test of an anaesthetic method is, after all, in the operation.

All operating under local or conductive anaesthesia requires special gentleness of manipulation. Rough pulling and tearing of tissue are likely to disturb the patient, even though they may not cause pain. Sharp dissection is generally preferable to blunt. Under intrasacral novocain the sphincter is, as a rule, slightly relaxed. Unless it is dilated very slowly and easily, pain referred to the epigastrium may be felt. The ordinary crushing, cutting, or burning of piles can be carried out in the usual way.

No accurate data are at hand as to the duration of the anaesthesia produced by this method. It has always lasted long enough for the operation in hand. In one case, at least, it was still perfectly efficient two hours after injection.

A purely local infiltration anaesthesia may be attended with varying degrees of success. A conductive anaesthesia, on the other hand, is usually either a perfect success or a flat failure. In a series of more than eighty intrasacral cases the writer has failed six times. Three of these were among the first ten cases, and were undoubtedly due to inexperience and faulty technique in the placing of the needle. In the last three failures it seemed almost certain that the injection had been correctly made; in two no anaesthesia was obtained, in the other a unilateral effect only. It is difficult to explain these cases except on the

ground of an abnormal arrangement of sacral nerves and dural sheath, preventing access of the solution to the nerve trunks. It has been suggested that a factor in the unsuccessful cases might be a low fluid pressure in the sacral canal. This does not seem likely, for perfect anaesthesia is often produced when the solution has gone in with no appreciable resistance. Furthermore, if the volume of the solution is doubled without increasing the amount of novocain, less satisfactory results are obtained.

THE TREATMENT OF GONORRHOEA WITH ACRIFLAVINE.

By DAVID WATSON, M.B., C.M.,

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THE account given of flavine by Browning and his associates, in the *BRITISH MEDICAL JOURNAL* of January 20th, 1917, showed that flavine possessed in a high degree the properties required of a genito-urinary antiseptic, and it was used as soon as a supply was forthcoming (June, 1917). The results obtained in gonorrhoea cases were very satisfactory, and it now occupies the chief place in the scheme of treatment adopted in the venereal clinics under my control.

The solution recommended for general surgical use (1 in 1,000 in normal saline) was found to be too strong for free application to the urethra. The strength which may be employed for the urethra varies inversely with the quantity of solution used. Thus, when using small quantities by the syringe method of treatment, a concentration of 1 in 1,000 in normal saline may be prescribed, but in lavation ("grand lavage" of Janet) 1 in 4,000 in normal saline was found to be the optimum, one pint being used twice daily.

Stock solutions of 1 in 500 acriflavine and of 1 in 6 sodium chloride are kept, and 20 oz. of the dilute solution is prepared for each patient by mixing 2½ oz. of the acriflavine solution, 1 oz. sodium chloride solution, and 16½ oz. warm water (106° F.). The stock solutions are filtered if not perfectly clear.

For anterior urethritis, treatment by syringe injections is simple for the patient to carry out in private practice as compared with lavation by means of a douche can, but it cannot be recommended as a routine procedure. The posterior urethra is infected for some time, probably one to three days, before definite symptoms of its involvement are manifest, and it is important that treatment of the posterior urethra should not be withheld during this period.

Brilliant results can be got by 1 in 1,000 acriflavine injections in a proportion of cases, but this method neither prevents the occurrence of posterior urethritis nor aborts it if existing, and is followed by a larger percentage of complications. During a properly conducted treatment by urethro-vesical lavation, posterior urethritis with its risk of complications does not arise; the onset of prostatitis or epididymitis after lavation has been begun means either that gonococci had previously reached the prostatic or seminal ducts, or some failure in the method of lavage.

The following analysis of the cases of gonorrhoea treated in a general hospital during a period when acriflavine was largely employed (January to September, 1918) proves, I think, the value of acriflavine lavation.

A total of 423 cases of gonococcal infections were admitted, and the average detention in hospital was 28.8 days. Of these, 307 were cases of acute gonorrhoea; 1 have classed 116 provisionally as chronic, the disease having been present for one month or more. The acute cases had an average stay in hospital of 26.8 days; in 222 of them acriflavine was the only antiseptic employed; these cases averaged 21 days in hospital. Of this group of cases, 26 suffered from complications on admission—namely, epididymitis 19, rheumatism 2, cowperitis 2, stricture 2, prostatitis 1. If these are deducted there remains 196 cases of uncomplicated acute gonorrhoea treated by acriflavine lavation. These cases show an average of 19.8 days in hospital, the actual treatment being completed in 15.4 days, and the patients being retained for other 4.4 days for observation before being dismissed as cured. Of the acriflavine treated cases, 6 per cent. relapsed; these cases had been, on an average, only

11 days in hospital, and less than 7 days under treatment we now know to be insufficient.

The complications arising in cases under acriflavine treatment were as follows:

1. *Epididymitis* (2 cases). In both the epididymitis developed while the patients were undergoing dilatation treatment with bougies for glandular involvement, and in both cases the customary insertion of atropine suppositories had been neglected. Infective material expressed from the diseased glands would be carried into the posterior urethra by the bougie, the passage of which would, in the absence of atropinization, excite reversed peristalsis. After the withdrawal of the bougie the patient filled the bladder as usual with acriflavine solution, but gonococci had meantime been carried along the common seminal duct beyond the reach of the antiseptic, and in due course an epididymitis resulted.

2. *Subacute Prostatitis* (2 cases). Both had an acute posterior urethritis and probably some prostatitis when admitted.

3. *Cystic Abscess* (3 cases).

Clinical Course.

When a case of acute gonorrhoea with profuse purulent urethral discharge is put on acriflavine lavation the inflammatory symptoms quickly subside. Within twenty-four hours the discharge has decreased to one-third, and by the third day it has usually disappeared, leaving perhaps a trace of moisture expressible in the morning. After three or four days' treatment gonococci are absent from smears taken from the urethra, nevertheless if the lavage is discontinued at this time discharge and gonococci will return within a few days in many cases. The treatment should therefore be maintained for ten to twelve days, when, with the smear negative, no discharge expressible in the morning, and the morning urine showing neither pus nor filaments, all treatment may be suspended. The patient receives a change of underclothing and remains under observation for four days longer, when he may be discharged to duty should no symptoms of relapse have developed.

Cases which have not cleared up on the tenth day fall into one of the following groups:

I. When the discharge is scanty but diffuse pus is present in both urine glasses, there is probably some degree of cystitis present with a secondary infection by some other organism. In such case a urinary antiseptic—for example, hexamine—is indicated; and, in addition, a small quantity of the acriflavine solution may be left in the bladder overnight. Should these measures not be quickly effective, oxycyanide of mercury solution (1 in 5,000) may be substituted for the acriflavine.

II. In the presence of a continued urethral discharge there is probably a cystic abscess in the anterior urethra or an infected para-urethral passage or other duct where the gonococci are beyond the reach of the acriflavine, and special treatment is therefore required.

III. If filaments are present in the urine glandular involvement is suggested. The prostate should be examined per rectum, and the urethra should be explored with an acon-tipped bougie and examined through the urethroscope, and treatment appropriate to the condition found should be instituted.

Before any instrumentation involving the posterior urethra, and also before any thorough rectal examination is attempted, atropine suppositories (½ grain) should be used to obviate the risk of vesiculitis or epididymitis being excited.

Mode of Action of the Acriflavine.

Acriflavine acts both on the medium and on the invading organism.

1. That the acriflavine penetrates the tissues is indicated by the staining of the mucous membrane which is apparent after its use. The mordant action of sodium chloride may have some effect in delaying the disappearance of the dye. There is evidence in the urine of the presence of acriflavine for several hours after lavation, and the mucosa therefore is kept in a condition which renders it unsuitable as a medium for the growth of gonococci. This effect of the acriflavine can be demonstrated in the laboratory by washing a sloped tube of gonococcus medium with acriflavine solution; gonococci will not grow on medium so treated.

2. Acriflavine is a gonococcicide. Colonies exposed to the action of a 1 in 4,000 solution are killed in two minutes.

There are no contraindications to the use of acriflavine, and the only drawback to its use is the staining by this powerful dye of clothing and hands. This can be

reduced to negligible proportions with sufficient care; a perforated rubber apron and rubber gloves may be used. Stains may be removed from fabric by means of eusol, and from the skin by 1 per cent. hydrochloric acid in methylated spirit.

Acriflavine, in my experience, has proved a distinct advance on any antiseptic previously used for the treatment of gonorrhoea. In attempting to improve on the results achieved by lavation with potassium permanganate I have tried many other antiseptics—for example, brilliant green, auramine and other dyes, eusol, chloramine-T, etc.—and, instead of lavation, I have experimented with instillations and injections of acriflavine, brilliant green, etc., in various oils, but so far I have found nothing to alter the conclusion reached over a year ago, that lavation with 1 in 4,000 acriflavine is the most satisfactory routine treatment for acute gonorrhoea at present available.

THE VALUE OF "BIPP" IN PRIMARY OPERATIONS FOR GUNSHOT WOUNDS OF JOINTS.

By CAPTAIN F. HOLT DIGGLE, O.B.E., F.R.C.S.,

R.A.M.C.,

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THIS war has been responsible for bringing before the notice of the profession many antiseptics, of which some are new and others have been revived. Bipp (bismuth, iodoform, and paraffin) is one of the latter, but, as with many other things, its results are disappointing unless one carries out to the letter every detail in the preparation of the material and surgical technique as laid down by Rutherford Morison.¹

If strict attention to detail is observed, it is my opinion that surgeons will find in bipp a valuable asset, particularly so in the case of joint wounds. Its value here is obvious if one can obtain primary union of skin and bone as well as good functional result; for not only has the limb been saved, but the actual time taken in recovery is far less than by any other method of treatment, and I venture to say that the ultimate functional result will be much better.

The two cases I am about to record were each wounded by shell fragments, and naturally the wounds were in a very lacerated and dirty condition, being covered with sand.

CASE I.

Sgt. A. was admitted to the casualty clearing hospital on May 17th, 1918. There was an extensive shell wound of the left elbow, a semilunar flap of skin including the olecranon process of the ulna had been reflected upwards, and there had been free bleeding from the interosseous recurrent artery. The joint was completely exposed from behind and the synovial membrane and skin edges severely bruised.

Operation.

The skin was cleansed with ether, methylated spirits, and carbolic lotion (1 in 20), but the wound itself, including the exposed joint, was cleansed with methylated spirits and flushed with saline. No carbolic solution was used for fear of irritating the joint. Extreme care was taken to get as much sand as possible out of the wound by lightly rubbing with a swab whilst the saline was flowing. When the wound was thoroughly cleansed the skin edges were excised, lacerated muscle and ligamentous tissues removed, and the edges of the lacerated synovial membrane trimmed. All the bleeding points were secured. The wound was again flushed with saline, a swab steeped in methylated spirits was applied, and fresh towels arranged. Bipp was then lightly rubbed into every crevice of the wound and the olecranon was secured in position by passing iodized catgut smeared with bipp through the periosteum of its posterior surface and the periosteum of the shaft of the ulna. The synovial membrane was likewise sutured with fine catgut and the wound closed with a continuous stitch of thread smeared with bipp. A spirit gauze dressing was applied and the limb secured to an anterior straight splint.

I kept the patient under observation for seven days, during which time the temperature twice rose to 100.6°, but the pulse never rose above 80. On the fourth day I had to change the dressings because there had been a copious serous exudation. The wound then had a sodden appearance, but was otherwise healthy. I squeezed out a quantity of serum and reapplied a spirit dressing. On the fifth day the temperature subsided and remained normal until the patient was evacuated on the seventh day. Five weeks later I learnt from the base that there had been primary union of the wound, that the functional result was already very good and would be still better.

CASE II.

Pte. D. was admitted on June 11th, 1918. There was a compound comminuted triradiate fracture of the right patella exposing the knee-joint. The synovial membrane was much injected and the whole wound covered with sand. The same method of cleansing the skin and wound was adopted as in the former case.

Operation.

A tourniquet was applied. The wound was extended on the outer side by making a semilunar incision upwards so as to expose the joint more fully and facilitate the better apposition of the upper fragment of the patella. The bruised skin edges were excised, the joint thoroughly cleansed as before. The fractured surfaces of the patella were thoroughly scraped with a Volkmann's spoon so as to get rid of the sand, but nevertheless it was deemed advisable to remove a small portion on the outer side about $\frac{1}{2}$ in. in diameter. After thorough cleansing with saline the whole wound was gently rubbed with bipp and about 5 liij of bipp, previously "let down" with sterile liquid paraffin until it had a more oily consistency, was run into the joint. The bony fragments were approximated as in the other case and the skin was closed with interrupted sutures. A spirit gauze dressing was applied and the dressings firmly bandaged on before the tourniquet was removed, a back splint with foot-piece was then applied.

The patient stayed for seven days, during which time the wound was never dressed. The temperature rose to 101° and 101.2° on the third and fourth day respectively, but the pulse was never over 85. The patient had no pain, and the temperature subsided before evacuation.

I am indebted to Captain Bannister, F.R.C.S., R.A.M.C., for the following notes, dated July 11th, 1918:

"When admitted to the base hospital the temperature was 101° and the pulse 96. The dressings were removed, and there was some slight surface inflammation of the lower end of the wound over the patella. The wound was dressed twice daily with eusol. The temperature reached normal the fourth day after admission, and the stitches were removed on the fourteenth day after the operation. The wound is now completely healed, except for a small area of granulations with some exposed fibrous tissue covering patella at the lower part of the wound. There is certainly fibrous union of the patella, and I think it will eventually become osseous. He can now move the knee about 30 degrees, but I have not allowed him much movement yet."

REMARKS.

I think there are several points of importance to be gathered from the above cases:

1. The thorough cleansing of the wound—this entails a considerable amount of time.
2. Discrimination in the quantity of "bipp" used: I have noticed that if it is used too liberally there is an extensive exudation which gives the wound a sodden appearance and necessitates the changing of the dressings, which is not desirable in fracture cases.
3. The importance of rest to the joint by splinting. This I regard as a most essential factor, whether there is any fracture or not.
4. The pulse, in conjunction with the temperature, is a better guide as to the necessity for changing the dressings and having a look at the wound than is the temperature alone. "Bipp" cases frequently run a high temperature, but if the pulse-rate remains slow there is no need for anxiety.

My thanks are due to Lieut.-Colonel H. A. Bransbury, D.S.O., R.A.M.C., for permission to publish the notes of these cases.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, October 20th. 1917, p. 503.

On April 12th the "Mary Kingsley" medal of the Liverpool School of Tropical Medicine was presented to Dr. J. W. Scott Macfie, a former student of the school, in recognition of his distinguished researches in tropical medicine and allied subjects.

THE Société de Biologie has appointed a committee, with Professor Charles Richet as chairman, to study the physiological and hygienic problems of industrial life, including such matters as the physical and psychical qualities required for any particular occupation; work for persons with a physiological defect; the re-education of crippled and injured; the effect of diet, of hours of meals, of wine, alcohol, coffee, tea, and tobacco; and of factory conditions. Stress is laid on the necessity of close collaboration of scientists with heads of great industrial establishments and public authorities, which can be carried out only by a permanent committee, having at its disposal a fully equipped laboratory and funds adequate for the remuneration of full time workers.

The Lumleian Lectures

ON

CEREBRO-SPINAL FEVER.

DELIVERED BEFORE THE ROYAL COLLEGE OF
PHYSICIANS OF LONDON,

BY

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LECTURE III.

(Abstract.)

In the third lecture the mortality, prognosis, prophylaxis, and treatment of the disease were discussed.

Serum Treatment.

The influence of the serum treatment on the prognosis was dwelt upon; its effect had been shown to depend to a very considerable extent on its early use. It was particularly in the septicæmic or premeningitic stage that early and vigorous intravenous administration of serum might cut short the disease. Herrick had recently shown that the free administration of serum intravenously reduced the mortality to 18.5 per cent. from 62.5 per cent. obtained in severe cases treated either by intrathecal injection alone or by intrathecal injection combined with small amounts of serum intravenously. Another important point was that the serum should contain the antibodies specific to the infecting strain of the meningococci. Flexner's multivalent serum from the Rockefeller Institute, made by the use of forty strains of meningococci, had on the whole given better results than any other serum, and the use of a multivalent serum, or of a pooled serum of the more probable infecting strains, until the actual type of the infecting organism was determined, when the univalent type serum was employed, would obviously be the most promising method.

Effects of Serum Treatment.

By comparison of the duration of the disease in various series of cases in the pre-serum era with 830 serum-treated cases that recovered Flexner found that the period of active symptoms shortened and that the cessation of symptoms, which in the natural history of the disease was almost always by lysis, was by crisis in 30 per cent. of the cases.

To sum up: although the infectivity of the disease was low, and a small proportion only of the population was affected, the prognosis of cases untreated by serum was bad, the death-rate varied in different epidemics from 20 up to 90 per cent., and was very rarely less than 50 per cent.; whereas with serum treatment the mortality should not be above 30 per cent., and, with further improvement of the methods and serum, might be much less, the duration of attack was shortened, and the incidence of sequels diminished.

Prognosis.

A very acute onset with sudden loss of consciousness—the *apoplectiform onset*—had a serious outlook, but if the acute stage did not prove rapidly fatal recovery might eventually occur.

The outlook was bad in the fulminating cases also. The presence of a *rash* without further qualification did not affect the prognosis to any considerable degree, but a distinction must be made between the hæmorrhagic rashes, and more especially large purpuric extravasations, and the non-hæmorrhagic rashes. No prognosis as to a fatal result can be made from the leucocyte count. Similarly the temperature and the degree of headache had little, if any, ultimate prognostic significance.

Synovitis was a metastatic complication which, according to Netter, was seen in cases which eventually were cured. Possibly the local focus acted as a "fixation abscess" and raised the resistance to infection in the same manner as a vaccine. Fairley and Stewart found that a low blood pressure during the first three days was associated with a severe infection, and was therefore of bad omen. From routine examination of 184 patients, 116 of whom had optic neuritis, they found that the presence or absence of optic neuritis was of no value in prognosis, but they regarded *nystagmus* as pathognomonic of internal

hydrocephalus. The nature of the cerebro-spinal fluid was not a guide to the outcome of the case, except in so far as a large number of extracellular meningococci made the outlook bad. A purulent fluid might rapidly clear after intrathecal injection of efficient serum, or a clear fluid might rapidly become purulent.

The occurrence of bronchopneumonia naturally rendered the outlook very serious. Cheyne-Stokes's breathing and Biot's cerebral type of respiration, characterized by periods of apnoea at irregular intervals, pointed to approaching death, as did slowing of the respiration pulse ratio from the normal 1:4 to 1:2. Respiration might fail entirely while the pulse was well maintained. More than half the deaths occurred during the first week of the disease. Finally, the prognosis was difficult because sudden exacerbations from reinfection might occur most unexpectedly.

Cerebro-spinal fever in the past had a bad reputation for the number of disabilities it left behind—mental, nervous, and auditory, which in young children accounted for much deaf-mutism. But at the present time there was a general agreement that if the patient survived he was not likely, apart, perhaps, from deafness, to be permanently crippled, and mental changes did not appear to be much more frequent than after other severe diseases.

PROPHYLAXIS.

The avoidance of overcrowding was an essential factor in maintaining the general health and, as had been pointed out in the first lecture, in preventing a rise in the rate of meningococcic carriers.

As the disease is spread by human carriers it should be exterminated if all the carriers were detected and isolated until they became permanently negative; but this was not possible in practice, and, moreover, the frequency of intermittent carriers and the failure of bacteriological tests would prevent such a drastic measure from being infallible. Two methods, short of complete search for and segregation and disinfection of all carriers in naval and military forces, were mentioned: (1) that search for carriers should only be made when a case of the disease had arisen, and only among the contacts, the carriers thus detected being segregated and disinfected; (2) that new entries should be examined and the detected carriers treated in a selective manner.

Details of the treatment of carriers were given, whether by local applications to the nasopharynx or by preventive vaccination.

SERUM TREATMENT.

The use of antimeningococcic serum was not so simple or so uniformly successful as that of antidiphtheric serum, which was antitoxic, whereas antimeningococcic serum, possessing bacteriolytic, bacteriotropic (opsonic), and anti-endotoxic properties, was more likely to fail in its powers as a whole. The extreme importance of specificity in the serum treatment of the disease and the absence of any benefit from non-specific treatment, or protein shock therapy, of which an extensive trial had unintentionally been made, were noteworthy. The important question, indeed, arose whether the intrathecal injection of inert serum might not do positive harm. Horse serum set up an aseptic meningitis and favoured the passage of meningococci through the meninges. It might, on the other hand, be argued that the increased number of phagocytes thus provided might do good. But it was significant that in 1915 the mortality among the naval cases treated with serum intrathecally was higher (61 per cent.) than among those treated in other ways (41 per cent.). In addition to the serum of immunized horses, the serum from convalescent patients had often been tried.

The serum treatment of cerebro-spinal fever might be directed against the general systemic infection before the meninges had been infected, or of the pre-meningitic stage, by the intravenous injection of antimeningococcic serum. The hypodermic or intramuscular injection of serum had also been advocated, but appeared to be infinitely less effective. The intrathecal injection of serum before the meningococci have invaded the meninges was not a harmless procedure.

The most efficacious method of introducing the serum into the blood stream was obviously by intravenous injection, and from experience of more than 100 patients Herrick found it both satisfactory and safe. His treat-

ment aimed at the sterilization of the blood before the meninges had become affected and was an advance on the usual methods which were concentrated upon the later stage when meningitis was established. Large quantities (200–600 c.cm. in all) of serum were given intravenously and, when meningitis was present, active spinal drainage and comparatively small intrathecal injections of serum were carried out. No bad effects followed the large intravenous injections and serious anaphylaxis was seen in only one case. Of the four classes of cases—the abortive, the ordinary, the severe, and the fulminating—Herrick's most brilliant results were obtained in the severe, the patients often coming out of coma with rapid recession of the rash and symptoms so that in forty-eight hours many were apparently out of danger; large intravenous injections reduced the mortality of the severe cases from 64 to 19 per cent.

Doubtful cases should be submitted to lumbar puncture at once; if the fluid were turbid, serum should be given intrathecally; but if quite clear, serum should be withheld unless meningococci were subsequently found. If the cerebro-spinal fluid was sterile, and especially when a blood culture showed meningococci, intravenous injections of serum should be given without delay; and, as the septicæmic stage of cerebro-spinal fever lasted on into the meningitic stage, the intravenous injections should be continued for a time, together with intrathecal injections. Lumbar puncture and the injection of serum should be performed under a general anaesthetic or under the influence of an injection of scopolamine $\frac{1}{100}$ grain, morphine $\frac{1}{4}$ grain, and atropine $\frac{1}{100}$ grain in 5 minims of water. The access of serum to the base of the brain was aided by raising the foot of the bed, and Ramond recommended that the patient should lie for a time on his face in order to direct the serum to the region of the optic chiasma. When recrudescence or relapse appeared, serum treatment should be at once started again; when an interval of ten days or more from the last injection of serum had elapsed steps must be taken to desensitize the patient, otherwise severe anaphylactic symptoms might appear.

The number of intrathecal injections of serum should be carefully considered, for it was probable that harm might result from a large number of lumbar punctures. Grave symptoms and even sudden death during intrathecal injections had been ascribed to various factors, such as anaphylaxis, liberation of toxins by rapid lysis of meningococci, the toxic action of phenol, often employed to preserve the serum, and, most important of all, increased intracranial pressure and distension of the closed cerebral ventricles. To avoid this it was important to give a smaller quantity of serum than that of the cerebro-spinal fluid removed; the gravity method of administering intrathecal injections had been advocated and practised, especially in America.

Treatment of Closed Meningococcic Infections.

In chronic cases in which lumbar puncture was either dry or brought away clear and sterile fluid, but in which the symptoms persisted unaltered by intrathecal injection of serum, there might be adhesions cutting off parts of the spinal intrathecal cavity or more frequently closing the foramina of exit of the cerebral ventricles. Lumbar puncture might be performed higher up so as to obtain cerebro-spinal fluid above the adhesions, and if turbid meningococci-containing fluid was obtained intrathecal injection of serum could be given.

When from the symptoms there was reason to believe that there was a closed infection of the cerebral ventricles—ependymitis or pyocephaly—the logical course was to tap and inject antimeningococcic serum.

A much less serious procedure advocated by Bloch and Hébert for cases in which the meningococci might be encysted in situations in contact, but not in communication, with the meninges—for example, the fibro-vascular tissue of the choroid plexus—was the intravenous injection of serum.

Serum Disease.

In the main the serum rash and other manifestations were much the same after intrathecal as after hypodermic or intramuscular injection; but some difference would naturally be expected when the injection was made into the close neighbourhood of the central nervous system.

Flexnor remarked that possibly the manifestations of serum disease were more frequent after the intrathecal than after the subcutaneous injection of serum; and from comparison of the naval cases of cerebro-spinal fever with the reported incidence of serum disease in diphtheria the lecturer was at first inclined to this view, but further sifting of the evidence did not show that there was any proof of this.

Clinical experience showed that the severity of the rashes and other manifestations of serum disease varied directly with the amount of serum injected. The rash was usually urticarial, erythematous, or morbilliform, but it might be scarlatiniform. In rare instances it was haemorrhagic; this might occur in association with a sore throat or an infected wound or boils.

Quite commonly a serum rash appeared, faded, and about two days later again became prominent; the first might be erythematous and the second urticarial, and both extremely irritating. These might be regarded as phases of the same reaction. In rare instances two serum rashes appeared at such an interval as to justify the term double serum rash and to suggest two separate reactions, which might be supposed to be the result of injections on different days.

The occurrence of arthritic and other manifestations of serum disease was also detailed, and the appearance of symptoms pointing to seric meningism and meningitis when a relapse was suggested.

True anaphylaxis might occur in a patient who had some time previously had an injection of serum—for example, for diphtheria, or as a prophylactic against tetanus. Although in the case of ordinary subcutaneous injections of serum anaphylaxis was, as a rule, more interesting than serious in its manifestations, the effect of an intrathecal injection of serum in a sensitized person, though fortunately uncommon, might be very grave. The anaphylactic symptoms were severe collapse, fall of blood pressure, rapid and feeble pulse, pallor, vomiting, feeling of thoracic constriction, failure of respiration, rapid eruption of urticaria, or even a haemorrhagic rash. In order to counteract these symptoms, the injection of adrenin and atropine had been recommended.

Vaccines.

Curative vaccines had been employed mainly in subacute or chronic cases when serum appeared to be losing its effect, and in a number of cases had been followed by improvement and recovery.

Apart from meningococcic serum, and perhaps vaccines, other forms of treatment were of very subordinate importance, and, except when serum could not be obtained or was inert, as it appeared to be in this country in 1915, were mainly of historical interest.

The employment of surgical measures to secure permanent drainage of the spinal subdural space had proved disappointing. In conclusion, the lecturer gave an account of the use of soamin, hexamine, and helmitol as cerebro-spinal antiseptics; they had not led to any strikingly good results.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HUMAN SERUM IN INFLUENZA.

DRIVEN to it by the urgency of a case of influenzal pneumonia, I determined to adopt the Scandinavian plan of taking serum from a convalescent patient, and the results so amply justified the experiment that I have since used it in three more cases.

The technique, crude it is true, but simple and effective, was as follows: After preparing the arm with petrol and distending the vein by means of a sphygmomanometer band, I punctured the vein with a sterile serum syringe, and withdrew into the syringe 20 c.cm. of the mother's blood, she being just convalescent from influenza; it was quickly ejected into a sterile test tube and centrifugalized by means of a cradle of string; the supernatant serum was again drawn into the syringe, and 8 c.cm. injected into the abdominal tissues of the child. In six hours the temperature had fallen, the breathing was almost normal, and the

toxaemic blueness had disappeared. The subsequent history of the case was uneventful, the child making a rapid and complete recovery.

The mother readily submitted, in view of this result, to act as donor for another case, whose condition was extreme. Here a dose of 15 c.cm. of serum was given; the result was as marked as in the child's case, and the contrast of the delirious raving and struggling to that of quiet sleep, which resulted in less than two hours, was marked indeed.

Serum was again obtained from her for the third case, in which its result was the same.

For the fourth case the blood was taken from a patient who had had a simple attack of influenza without pulmonary symptoms; it was injected into the abdominal tissues of a patient suffering from pneumonia, and had the desired effect.

In the three later cases it was necessary to take the serum from one place to another; this was done by enclosing it in an old horse-serum phial, which was sterilized by boiling, and the neck reclosed in the Bunsen flame.

As the immunity following an attack seems from clinical experience to be only some six weeks, it is necessary that the blood should be taken from a person who is just convalescent from influenza, and although I have not had the experience it would seem likely that the value of the serum would rapidly deteriorate on keeping. As there seems to be evidence of a fresh outbreak I publish these notes in the hope that some extensive preparation of serum will soon be made.

W. E. HUFF-HEWITT, M.B., Ch.B.

Rhos, Colwyn Bay.

AN ABNORMALITY OF THE TENDON GROOVES OF THE RADIUS.

I THINK it worth while to call attention to a condition which I have recently observed in two or three cases. A lady who is in the habit of playing the piano frequently and for long periods at a time consulted me for a ganglion over the tendons of the extensor ossis metacarpi pollicis and extensor brevis pollicis near the styloid process of the radius. The disability was so great that she could no longer play the piano. I removed the ganglion under a local anaesthetic. No benefit resulted from this. A skiagraph showed nothing abnormal. Under a general anaesthetic I then cut down on the tendons and found them running in a groove very much in excess of the normal depth. The depth of the groove was accentuated by a slight overgrowth of the normal raised edges of the groove. The groove was widened with a chisel, the tendons resecured in place with a couple of catgut stitches and the wound closed. Immediate relief resulted.

I have met a similar condition in hospital practice where the piano playing element could be excluded, and it is possible that it is due to abnormal structure and not to any pathological state. I have adopted the same treatment with the same result. An anatomist friend has promised to investigate the point in the material at his disposal.

P. JENNER VERRALL, M.B., F.R.C.S.,

Chief Assistant, Orthopaedic Department,
St. Bartholomew's Hospital, etc.

SHOT IN THE VERMIFORM APPENDIX REVEALED BY X RAY.

THE following case has, I think, some interest: C. P. H. V., a man aged 34, had since August last been subject to what he termed "bilious attacks." These had come on at intervals of about a fortnight and lasted from one to two days. They were associated with shivering, malaise, and occasional vomiting. As the attacks continued a bismuth meal was decided upon. He was accordingly seen by Dr. Ironside Bruce and the radiograms revealed the presence of what appeared to be two No. 6 shot, in the region of the appendix, which could be freely moved under the screen. The patient was thoroughly purged and a second skiagraph showed the shot in the same position as the first. Colonel Gordon Watson removed the appendix a few days later and two No. 6 shot were found at the tip of the appendix, which showed signs of having been recently inflamed. The presumption is that the patient had swallowed the shot when eating game. He made an uneventful recovery and has had no further attacks.

London, S.W.

W. B. AINGER, F.R.C.S.

Reports of Societies.

PNEUMONIA IN MACEDONIA.

At a meeting of the Section of Medicine of the Royal Society of Medicine, held on April 29th, with Sir ARCHIBALD E. GARROD, President, in the chair, Dr. J. BURNFORD read a paper entitled "Further notes on the epidemic, with special reference to pneumonia in Macedonia." After describing influenza as he had seen it in France, at Woolwich, in Macedonia, and in the Dardanelles, with the Army of Occupation, where an outbreak occurred among Anzacs from the Jordan valley, he dealt more particularly with the pulmonary form. The symptoms, he said, fell mainly into two groups—toxaemic and mechanical. Sometimes the toxaemic symptoms predominated, producing a drowsy state, with indefinite physical signs of pulmonary disease. At others the obstructive lesions were more manifest, with coughing, cyanosis, asphyxia, and noisy respirations. The physical signs of involvement of the lungs were often most misleading, and even when definite evidence of consolidation was manifest, it must still be appreciated that in all probability the entire lung was affected, and not only that part over which the signs were detected. A recumbent position was the rule. Cyanosis was a common and marked feature, and respirations were variable in character, but increased out of proportion to the pulse rate, which sometimes remained normal, although sometimes increased to a less degree than the respirations. He regarded the respiratory changes as dependent on the pulmonary lesions, for they only occurred with the pulmonary form; venesection failed to give relief, histological examination showed sufficient destruction of aerating tissue to account for the symptoms, temporary relief often followed the administration of oxygen, and alteration in the position of the patient produced no variability. After describing other symptoms, such as delirium, lethargy, deafness, vomiting, albuminuria, and haemorrhages, he said that the physical signs were very anomalous and varied, even in the same patient, from time to time. There might be crepitations with absolute dullness, with impaired resonance, or with whispering pectoriloquy (with or without tubular breathing), silent lung or choked lung into which air entered with difficulty. The sputum might be tenacious, blood-stained, glairy with mucus, nummular or purulent, and might contain much bright blood, but was seldom the characteristic rusty variety seen in croupous pneumonia. In favourable cases the acute symptoms ended by crisis in some, by lysis in most. Though the toxæmia might be overcome, the pulmonary lesions did not immediately resolve; resolution was always slow and might be prolonged for weeks or perhaps indefinitely. Consequently, both increased respirations and cyanosis might persist. The voice when lost often failed to return for weeks, and there might be actual ulceration of the vocal cords.

He laid particular stress on two pathological changes which were found at every autopsy: *universal friability* of the lung tissue and *emphysema*. It was evident that the specific changes occurred in the lungs, and that the entire lung tissue was implicated. Was there a destructive activity exerted by the toxin on the lung tissue facilitating the emphysematous change, or was the widespread emphysema associated with so much destruction of elastic tissue as to produce the undue friability? He raised the question as to whether so friable a lung condition was compatible with recovery, and said that the same problem arose in connexion with hepatization of the lung in croupous pneumonia.

The causes of death were oedema, asphyxia, exhaustion, and, rarely, cardiac failure.

Speaking of treatment, he said that individual treatment was purely symptomatic. Brandy and champagne were freely given. Salicylates relieved the pain in the toxaemic stage. Expectorants were useless. Morphine and heroin were used at all times to produce sleep. Camphor, atropine, digitalis, and strychnine produced no appreciable result. Quinine did neither good nor harm. Inhalations of menthol and eucalyptus gave much relief, and oxygen relieved the cyanosis in many cases. He spoke of the probable value of serum treatment, but had only an opportunity to try it in one case when a serum was given obtained from several

selected convalescents, and led to recovery in a very serious case.

In conclusion he showed on the screen a series of charts demonstrating the various types of cases, including unresolved consolidation, abscess formation, infective endocarditis, and a series of cases in which malaria was a complication. Some microphotographs illustrated the pathological changes and included marked emphysematous changes in parts of lungs apparently not implicated in the pneumonic process.

The President spoke of the paper as providing an accurate and elaborate account, too important and too detailed to be discussed satisfactorily in the time available. He indicated the following outstanding features of the epidemic from his experience in Malta: oedema, foci of suppuration, cyanosis with scanty physical signs, delayed resolution, and the prevalence of secondary infections.

Dr. F. S. LANGMEAD said that the account corresponded closely with his own experience in Macedonia. He agreed that the main clinical features were the severe toxæmia, the prominence of mechanical obstruction, which, in spite of the severity of the toxæmia, bore a greater proportion to it than in ordinary pneumonia, the irregularity of the fever, the indefiniteness of the course, the obscurity of the physical signs, the delayed or defective resolution, and the high mortality. He spoke also of the frequency of purulent expectoration, of mental depression with suicidal tendencies, and of suppurative or gangrenous parotitis as a complication.

Dr. C. R. Box said that the description was a faithful one for the epidemic as it occurred in England. There could be no doubt that the bronchiolectasis or "honey-comb" lung was a feature of the bronchopneumonic not of the croupous form. The unresolved areas often underwent practically no change for a considerable time.

PUBIOTOMY.

At a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, held on March 21st, Dr. JELLET read a paper on the radical cure of contracted pelvis. It was time, he said, to put the operation of pubiotomy on a surer footing, and to insist not only that it was a means of ending satisfactorily a difficult labour but also a cure for certain cases of contraction. As a proof that the operation was safe he gave statistics of thirty-five operations with two maternal and five fetal deaths. The two former resulted from fatty degeneration of the heart and military tuberculosis respectively; of the five fetal deaths one occurred in the second of twins and another in a hydrocephalic fetus. As a proof of its suitability, he gave the history of two patients with approximately equal degrees of pelvic contraction. One had to have Caesarean section done four times. The second had pubiotomy done at her first labour, and subsequently delivered herself three times spontaneously, and once was delivered by the forceps; all the children were alive. He wished to establish the following points:

First, that pubiotomy is not merely a means of terminating a difficult labour, but rather of effecting a radical cure of pelvic contraction. Out of 45 labours previous to pubiotomy, six children were delivered alive spontaneously and four by forceps, while in 22 labours occurring subsequent to the labour at which pubiotomy was performed 11 children were delivered alive spontaneously, 6 alive by forceps, and 2 by a second pubiotomy, in cases in which bony union had occurred. Three children were born dead, one death being due to placenta praevia.

Secondly, that pubiotomy is indicated in both the first and second degree of contraction.

Thirdly, that it is not an alternative to a Caesarean section, which is merely a means of ending a labour, whilst pubiotomy brings about a cure.

Fourthly, that pubiotomy should never be postponed willingly to the end of the second stage of labour, but should ideally be carried out independently of pregnancy in cases in which its effects are likely to be required.

Fifthly, that every effort should be made to prevent bony union of the cut surfaces.

The latter half of the paper dealt with certain points in the technique of the operation, and with the necessity for accurate measurements of the internal diameters of the pelvis by Skutch's pelvimeter, in order to exclude unsuitable cases. He concluded that the usually accepted minimum of 7 cm. in the conjugate of a flat pelvis, or 7.5 cm. in a generally contracted pelvis, was correct, and

that below this pubiotomy should not be attempted. He laid stress on the necessity for early diagnosis in order that the operation might be carried out under the most favourable, instead of as at present under the least favourable, circumstances. Lastly, he thought patients should no longer be deprived of the advantages of so valuable an operation because of past prejudices against it.

Dr. GIBBON FITZGIBBON thought that when the necessity for pubiotomy arose in labour the results of the operation were very satisfactory, as shown by Dr. Jellett's tables, that the prophylactic effect applied to the subsequent labours, and that little more was to be gained by doing the operation in anticipation of its being required.

Sir WILLIAM SMYLY said that in cases of flat pelvis with a true conjugate of less than three inches he would still advise Caesarean section, for, although he was impressed by Dr. Jellett's views and the arguments by which they were supported, he was not altogether convinced that the permanent enlargement resulting from pubiotomy would in such cases generally be sufficient to ensure the passage of a full-term child. It would seriously affect the reputation of an operator if, having performed a serious operation before term with the express purpose of securing an easier delivery, he were obliged to do it again during labour. Yet it was admitted that where bony union occurred that would be likely to happen. Dr. Jellett believed that such union could with certainty be prevented, but that remained to be proved. Nor was it certain that when it did not occur sufficient permanent enlargement would be secured; that was really the question at issue. If it could, then Dr. Jellett's position was secure, but if it failed to do so in a considerable proportion of cases it would have to be abandoned. The histories of the cases delivered in the Rotunda Hospital by pubiotomy, as regarded their subsequent confinements, supported Dr. Jellett's views. If this operation really resulted in a radical cure, there was much in favour of its early performance, both with regard to the patient's safety and the operator's convenience. He believed the suggestion to have originated with Dr. Jellett.

Dr. HASTINGS TWEEDY agreed as to the great obstetrical value to be attached to pubiotomy. The paper to which they had listened proved convincingly that the operation should (in suitable cases) be performed early in the first stage of labour rather than when the vitality of the infant had suffered by long and ineffectual methods of delivery. He could not approve of subjecting an unimpregnated woman to the inconvenience of this operation on the off chance that it might on some future occasion mitigate the perils of delivery; nor of its performance early in pregnancy. It could not yet be claimed that the operation would procure with certainty a normal delivery, and it was very unlikely that bones united by fibrous tissue would have the same degree of expansion as was present immediately after their severance.

Dr. SOLOMONS thought that a prophylactic pubiotomy on the non-impregnated woman would be reckless. It seemed to him that real advance would be made if pubiotomy were performed after the child had become viable. By waiting for this period in pregnancy there would be time for the soft parts to recover if labour started at term; or, if the operation induced a premature labour, the child would be viable. He noted that Dr. Jellett was one of those who did not mind a delivery *per vias naturales* after Caesarean section. He (Dr. Solomons) had reported one such case. According to figures published by Hartmann some years ago, the statistics of repeated Caesarean section were better than those for the single operation.

Dr. PUREFOY said that the paper showed how, in certain cases, the operation of pubiotomy might bring about a cure of pelvic deformity, and how the dangers and difficulties caused by it in parturient women might be escaped. How far it might be found advisable in the future to perform prophylactic pubiotomy only long experience could decide.

Rebels.

"THE ARCHIVES OF NEUROLOGY AND PSYCHIATRY."

IN the *Archives of Neurology and Psychiatry*, vol. vii, 1918,¹ Dr. MOTT republishes in convenient form a series of recent papers and lectures by himself or by workers under his direction, which have already appeared in other journals. The reason for this is that the pathological laboratory of the London County Mental Hospitals, which has lately been removed from Claybury to the Maudsley Hospital at Denmark Hill, has been engaged in the routine work of a military medical centre, and the usual pathological investigations which are associated with Dr. Mott's laboratory have had to be curtailed or postponed. The volume forms a contribution to scientific literature of considerable value, and it is of advantage to have in compact form the results of researches of the same investigator or of those who have worked in the same scientific atmosphere.

The papers include several on the histological changes observed as the result of high explosives, and in such conditions as mental disease, hypothyroidism, gas poisoning, and commotio cerebri. A valuable article on the pathology of venereal disease, given originally as a lecture in 1917, well repays a second perusal, especially at the present time when at last the real facts of venereal disease are receiving general recognition.

As is well known, Dr. Mott has been for some time in charge of a large military department at the Maudsley Hospital devoted to non-organic nervous disorders; work of considerable magnitude has been carried on and is still continued by him and, under his inspiration, by the school of neurological study which has grown up there. With the possible exception of venereal disease, no one subject in the whole of medical science deserves greater sympathy from authority or is more likely to be pursued with greater benefit to the country than that of the diagnosis and treatment of the so-called functional nervous disorders. Observations bearing on this work are published by Dr. Mott in the last article in this volume, and it is to be hoped that this important branch of medicine may find one of its permanent homes at the Maudsley Hospital.

DISEASES OF WOMEN.

WHILE Dr. H. S. CROSSEN of Washington was engaged in revising his *Diseases of Women*² for a fourth edition he was called to active service as a member of the Medical Officers' Reserve Corps of the United States Army, and the revision was completed by Professor Ehrenfest of St. Louis University, who has written what is now a necessary adjunct to any textbook of gynaecology—a chapter on the endocrine glands and their relation to the female sex organs. This particular chapter is well done, and gives a useful digest of the subject. Dr. Crossen addresses himself avowedly to the general practitioner, and his methods of approaching both diagnosis and the choice of treatment are well adapted to assist those who use the book as a guide in gynaecological practice. Much space is devoted to practical detail, fully ten pages being given to the subject of vaginal douching. The elaborate description and illustration of some unusual forms of pessary is not calculated to benefit the reader—still less his patients.

The illustrations are very numerous and very unequal in value. What justification can there be for devoting a third of a page to an ordinary photograph of a woman and her child as an illustration of a case of extrauterine pregnancy operated on at full term? The microphotographs are not very satisfactory or helpful, and will convey little to those unfamiliar with the subject.

SYPHILIS OF THE NERVOUS SYSTEM.

THE systematic diagnosis and treatment of neuro-syphilis are presented by SOUTHARD and SOLOMON of the Harvard Medical School in a somewhat ambitious work entitled

¹ *Archives of Neurology and Psychiatry*. Edited by F. W. Mott, M.D., LL.D., F.R.S. Vol. vii, 1918. London: P. S. King and Son, Ltd. 1918. (Cr. 4to, pp. vi+309; illustrated. 10s. 6d. net.)

² *Diseases of Women*. By Harry Sturgeon Crossen, M.D., F.A.C.S., Associate in Gynecology, Washington University Medical School, etc. Fourth edition, revised and enlarged. London: Henry Kimpton 1918. (Roy. 8vo, pp. 1160; 800 figures. 32s. net.)

THE American Pediatric Society will hold its thirty-first annual meeting at the Chalfonte Hotel, Atlantic City, New Jersey, on June 16th, 17th, and 18th, 1919, under the presidency of Dr. Edwin E. Graham of Philadelphia. The meeting has been arranged to coincide with the Congress of American Physicians and Surgeons, which will be held at the Hotel Traymore, Atlantic City, under the presidency of Dr. Simon Flexner.

Neuro-Syphilis,³ in which 137 case-histories are analysed. The book has been written primarily for the general practitioner, and the material employed amounted to over 2,000 cases of neurological syphilis.

We are glad to see the statement confidently made that the diagnosis in many cases between incurable paresis and cases of syphilis of the nervous system resembling paresis but which are amenable to treatment, is impossible. The lesson to be drawn is that all cases should be given the opportunity of benefit from modern treatment.

Proper importance is given to the frequency with which cases of paresis are diagnosed as neurasthenia, through omission to apply modern tests, and also to the fact that a negative Bordet-Wassermann reaction in the serum does not necessarily exclude syphilis of the nervous system. Emphasis is laid, too, on the diagnostic possibilities of tabes dorsalis years before the stage of locomotor ataxia is reached, a subject of which many students are profoundly ignorant. A list of the symptoms and signs of tabes dorsalis in the order of their frequency, given on page 93, is of small value, more especially as it omits entirely to mention one of the commonest early signs—absence of ankle-jerks.

The full page charts interspersed between the pages might be omitted with advantage in our opinion; many of them are lists of the clinical and anatomical forms of neuro-syphilis. A few expressions, not uncommon in works by American authors, but loosely written according to our ideas in England, somewhat spoil the ease with which the case-notes are read. For instance, on page 43, a gentleman is reported to have had "Achilles" on the right side only. We observe also that the Fuchs-Rosenthal chamber is recommended for cell counting, and that nothing is said of the more ready method by means of the ordinary Thoma-Zeiss haemocytometer.

In any book which deals purely with the diagnosis and treatment of neuro-syphilis a full account of the operation of lumbar puncture should find a place. It is not sufficient merely to say that it should be done "in the usual manner." The operation should not be done at all unless a fluid which is fit to be examined can be guaranteed as a result of the operation.

We regard this volume as a useful book of reference, containing a great deal of information and illustrated by good plates, but the examination and diagnosis of nervous diseases is learnt better at the bedside than by the reading of any books.

A HANDBOOK OF RE-EDUCATION.

THERE are two ways of dealing with the disabled man: the one by fussy sentimentality, the other by practical sympathy. The first brings moral disablement in the train of the physical; the second re-establishes mental and moral capacity and enables the individual to discount the physical handicap. The Federal Board for Vocational Education of the United States has issued a valuable compendium of information⁴ showing how the great problem brought about by the war is being dealt with in countries affected by the war. The experiences of France, Belgium, Italy, Germany, and Austria-Hungary, of Great Britain, Canada, and other British Dominions, are given in considerable detail, and there follows a bibliography of no fewer than 52 pages of closely set print. The reader will welcome the book as a digest of such a massive literature. The book gives a story which well illustrates the ill effects of ill-considered action:

In one of the allied countries the wife of a returned soldier complained to the representative of a patriotic relief agency, which had been attending to the family needs while the chief breadwinner was at the front, that her husband would never spend any time with her or with the children. She had wanted that afternoon to have him accompany them to the park, but he disdainfully refused, saying he was going out for an automobile ride and later to a "sing song" at one of the fashionable hotels. The musical entertainment referred to was being provided by the society ladies of the city, so mother and children went to the park alone, while the "hero" was receiving appropriate recognition of his services.

Happily such misdirected efforts at alleviating the lot of the disabled weigh little in the scale as compared with the mass of earnest work which has been done by both private and public enterprise. The bulk of the volume is taken up with the development and gradual extension of the recognition of national responsibility in the matter, and of the undoubted success which has followed the working out of the several schemes of re-education. Specific data is given of the towns and cities where work of various orders is taught. The basis of the most successful schemes is at once simple and sound. Train the man to do the work which he has done before, if that be possible; if not, train him in that work which is closest allied to his former work, so that his former experience will be utilized as the groundwork of his re-education. By such means the man comes most swiftly to the appreciation that all is not lost, but that he can become a man, and a useful man, once again.

NOTES ON BOOKS.

THE *Minutes of the General Medical Council*⁵ for 1918 have been issued in a volume of 404 pages. In addition to the Minutes of the Council and its various committees, it contains twenty appendices of reports presented by the committees. The *General Index to the Minutes of the General Medical Council*⁶ has also been brought up to date, and includes the minutes from 1903 to 1918 inclusive.

Industrial fatigue is a subject of great importance in the management of especially large industrial undertakings. To what extent it exists can only be judged by the quantity and quality of the output. Any such inquiry, however, is a matter that requires great circumspection if the conclusion is to be reliable. Dr. FLORENCE, in a book on the *Use of Factory Statistics in the Investigation of Industrial Fatigue*,⁷ has pointed out the many circumstances that are apt to vitiate the result. Of all the available means for that purpose, the books of the factory afford the most valuable data by showing the numbers of absentees at a given period. But even that information is not enough, considering the number of causes that may lead a worker to absent himself from his duties. The only way to avoid all ambiguities is that the inquirer should personally examine the circumstances to which the absence is or may be attributed.

The seventh *Bulletin of the International Association of Medical Museums*,⁸ being the special war number of the American and Canadian sections, is occupied largely with twenty-four valuable summaries of the pathology of the chief diseases or disabilities affecting armies and characteristic of the war, together with references to the periodical literature of the subjects with which they deal.

We have received a further instalment (the seventh) of the reprint of Linnaeus's letters⁹ that is being issued under the auspices of Upsala University. These are letters from Linnaeus himself and from several of his correspondents, and are occupied largely with matters relating to botany and natural history.

The third edition of Professor BARD's manual for the clinical laboratory¹⁰ gives a clear account of the chemical, physical, microscopic, bacterial, and experimental investigation of the clinical material derived from sick persons of every sort. It is written for the medical student's use in the wards and side-room or laboratory, and contains all the information to be looked for in a modern textbook of clinical methods for laboratory use. It may be recommended to the attention of students in search of a French guide to the subject.

⁵ and ⁶. London: Constable and Co. (12s. and 2s. 6d. respectively.)

⁷ *Use of Factory Statistics in the Investigation of Industrial Fatigue. A Manual for Field Research.* By Philip Sargent Florence, M.A. Camb., Ph.D. Columbia. Studies in History, Economics, and Public Law. Edited by the Faculty of Political Science of Columbia University. Vol. lxxxi, No. 3, whole number 190. New York: Longmans, Green and Co.; London: P. S. King and Son. 1918. (Roy. 8vo, pp. 153. 5s. net.)

⁸ *The International Association of Medical Museums. Bulletin No. VII.* Edited by Drs. A. S. Warthin, C. V. Weller, M. E. Abbott, and L. Gross. Michigan, U.S.A.: The Ann Arbor Press. 1918. (Med. 8vo, pp. 414.)

⁹ *Bref Och Skrifvelser af och Till Carl von Linné. Vol. I, Part VII.* Edited by Th. M. Fries and J. M. Hulth. Upsala: A. B. Akademiska Bokhandeln. (Roy. 8vo, pp. 192. 5 kr.)

¹⁰ *Précis des Examens de Laboratoire Employés en Clinique.* By L. Bard, Professor de Clinique médicale à l'Université de Genève, etc. Avec la collaboration de MM. G. Humbert et H. Mallet. Third edition, revised and enlarged. Paris: Masson et Cie. 1913. (Post 8vo, pp. xxvi + 536; 162 figures. Fr. 14.)

³ *Neuro-Syphilis.* By E. E. Southard, M.D., Sc.D., and H. C. Solomon, M.D. Boston: W. M. Leonard; London: Stanley Phillips. 1917. (Roy. 8vo, pp. 495; illustrated. 21s. net.)

⁴ *The Evolution of National Systems of Vocational Re-education for Disabled Soldiers and Sailors.* By Douglas C. McMurtrie. Prepared at the Red Cross Institute for Crippled and Disabled Men, Washington: Government Printing Office. 1918. (Med. 8vo, pp. 319; illustrated.)

PARLIAMENTARY REPRESENTATION OF THE MEDICAL PROFESSION.

A CONFERENCE called by the Medical Parliamentary Committee was held at the Central Hall, Westminster, on May 2nd. About sixty representatives were present, not only from medical associations, but also from nursing and pharmacy services. The purpose of the gathering was to form a Medical Parliamentary Committee of a permanent kind which should be charged with the following duties:

(a) Supplying information of the trend of expert opinion on health questions to medical members of Parliament; (b) supplying early information of impending legislation to the constituent bodies; (c) facilitating communication between the several bodies affected by the proposed legislation; and (d) assisting in increasing medical representation in Parliament.

Sir WATSON CHEYNE, M.P., who presided, said that the whole question had arisen because the medical profession did not succeed in getting sufficient importance attached to its opinions in legislation. It was very slightly represented in Parliament, though he did not himself lay great stress upon any considerable increase in the number of medical men in the House of Commons; it was more important that those who were in Parliament should act together, and should be informed and supported. To this end a central body, neutral in politics, was needed to focus professional opinion. The objections which he had heard to the Medical Parliamentary Committee were mostly directed against its origin, but such a movement must originate in some quarter, and if there were any bias it could be afterwards redressed.

Dr. ARTHUR LATHAM, in moving that a permanent Medical Parliamentary Committee be formed, said that some efficient machinery, alike for ascertaining and for ventilating the views of the profession, was called for. Hitherto the profession had had a habit of "missing the train" in politics. He was not satisfied that any existing organization had the time or the machinery for the purpose in view; moreover, most of the existing organizations were not wholly representative of the profession, and were suspected by the public of furthering the interests of the medical profession alone. If the profession was to get political power it must have the sympathy of the public, and be able to show that the public and professional interests were bound up together.

Sir HENRY MORRIS, in seconding the resolution, regretted that so little notice had been taken of his suggestion that the proper course would be to have the medical profession as a body directly represented in Parliament just as the universities were. He hoped the British Medical Association would send representatives to the proposed committee, and that those representatives, so far as their membership of that body was concerned, would detach themselves from all the other interests and activities of the Association.

Dr. H. B. MORGAN wished to move an amendment, recommending the British Medical Association to co-opt to its Medico-Political Committee representatives of other national organizations so as to secure a collective medical opinion. The CHAIRMAN refused to accept such an amendment, and Dr. Morgan spoke against the resolution, and declared the Medical Parliamentary Committee to be a body of consultants representing no one but themselves.

The motion that a permanent Medical Parliamentary Committee be formed was carried, with one or two dissentients. In reply to a question from Dr. A. C. FARQUHARSON, M.P., as to the vote-value of those present, the CHAIRMAN said that representatives of the various associations were not pledging their respective bodies in any way; the meeting was purely a conference. A discussion then took place on the four suggested purposes of the committee (given above), in particular as to the form of words under (a), and it was eventually agreed that this should be: "Supplying information of the trend of opinion on health questions."

Sir JENNER VERRALL said that he could not pledge the British Medical Association, which he represented, for or against the proposal to form a permanent Medical Parliamentary Committee. The Council of the Association would no doubt consider and report on the matter to the Association, but it might easily be that the Association would feel bound to decide that the proper way was to construct such a committee within itself, with or without the co-optation of other bodies outside. A point of order was raised here, on the ground that the speaker was dealing with a matter which had already been decided by

the conference, but the CHAIRMAN, while admitting that the speaker was technically out of order, allowed him to proceed, and he went on to say that the British Medical Association at present did all the four things which it was stated that day the Medical Parliamentary Committee should be formed for the purpose of doing. If it were left to the Association to construct such a committee, he believed that the resulting body would command the confidence of the profession and of the ancillary non-medical organizations which it was proposed to bring in. He was aware that the Association was not regarded in all quarters as representative, but it was a democratic body, and open to modification or reconstruction.

Dr. E. H. M. STANCOMB said that the main purpose of the proposed committee was to gain political power for the medical men of this country. All industries were represented in Parliament save the fundamental industry of the country—that of health, which had no representatives as such. No medical man in Parliament went there as a doctor; he was elected under the party system. Sir WILLIAM WHITLA, M.P., objected to this statement, as did also Dr. NATHAN RAW, M.P., and Dr. A. C. FARQUHARSON, M.P.; and Sir WILLIAM WHITLA again protested when Dr. Stancomb went on to say that all of them had got into Parliament by party organization more or less. Dr. Stancomb added that he himself was hoping to go into the House of Commons as a representative of national health pure and simple.

Dr. C. BUTTAR then moved a resolution of many clauses (some of which were amended in the course of discussion) defining the constitution of the committee. He said that the present plan was to get representatives of existing associations to form the majority of the committee; elections from the whole profession on a territorial basis might follow later on. He defended the proposal to bring in representatives of certain non-medical associations, representing nursing, pharmacy, and hospital administration. The resolution was seconded by Dr. JANE WALKER, who thought it very necessary that the nursing service should form an integral and definite part of the committee.

Dr. VIVIAN GREENYER urged that the committee should consist of medical practitioners only, and that the non-medical bodies should be represented on a subcommittee. He and Dr. A. G. NEVELL and others made suggestions as to additions or exclusions, and finally it was agreed that the committee should consist of a representative or representatives of any society or association of registered medical or dental practitioners; two representatives appointed by the nursing profession; one representative each of the midwifery service, the pharmaceutical societies, the British Hospitals Association, and the Housing and Town-Planning Association; the editors of the *BRITISH MEDICAL JOURNAL*, the *Lancet*, the *Medical Press*, the *Medical World*, and the *Medical Times*; all the medical members of Parliament; co-opted members, not exceeding 20 per cent. of the committee (of these co-opted members not more than one-fourth were to be engaged in consulting medical practice), and directly elected representatives of the whole medical profession, to be elected immediately the committee's financial position warranted the necessary expenditure. A member of the conference pointed out that if every medical society in the kingdom was to be admitted to representation the Connaught Rooms would be necessary for every meeting, and, accordingly, it was decided that the provisional committee should set up a subcommittee to determine the basis of society representation.

Mr. E. B. TURNER, who believed that the committee would make for the unity of the profession, asked where the finances of the committee were to come from. Were the profession to be asked to subscribe, or would whatever bodies constituted the committee be expected to provide the money? Dr. LATHAM replied that, so far as could be estimated, if the committee had a representative in the lobby of the House of Commons and a secretary, some £1,500 to £2,000 would be required annually. It was possible that some of the organizations, according to their representation, would find certain funds. Already about £700, subscribed privately, had been expended. The money could be found for the first few months; after that the body which was formed would have to stand or fall by its achievements.

It was then agreed, on motions from the chair, that the committee should meet at least twice a year; that it should appoint an executive of not more than twenty members (not more than a quarter to be engaged in consulting practice), and that this executive should meet at least once a month. The conference then broke up after a three-hour session.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAO BUIST.

LIGHTENING THE BURDEN OF COSTS.

MEDICAL men will be quick to appreciate the intelligent treatment which Mr. Austen Chamberlain has accorded motoring in the current Budget. The effect of the various Government proposals should begin to relieve doctors within the next week or ten days. Thereafter there will be no occasion to obtain licences to buy motor fuel; the supertax will have to be paid no longer; the medical man will have to pay only the single tax on the gallon of petrol at half the rate paid by the general public; the petrol vendors will be practically freed from control, and the best quality spirit will be available to the public in place of being monopolized by the flying services, so that the quality of the petrol will improve while its price will be substantially reduced. Moreover, though in the case of the medical man under these new conditions the amount of duty he pays per gallon of petrol used is not a heavy burden as we count costs in the post-war period, nevertheless, if he chooses, he can escape it altogether by using benzol, which is duty free to the motorist as it is to the dyer or other user, because in the course of a war in the submarine era and an age of flying and motor transport this island nation discovered the vital need of having an industry for the home production of motor fuels, so that to-day a large and growing benzol industry exists. Its development is merely the beginning, and it is a matter of national security as well as of economy that it should be developed to a much greater extent. Should any emergency arise we should want motor fuel on a much faster scale than the amazing rate at which it was used in the German war; while from the mere point of view of national finance it is essential to produce everything possible in these islands, both to reduce occasions for the exportation of money and to provide the maximum employment. Post-war benzol seems satisfactory in quality, but perhaps the best advice is to use one gallon of benzol to two gallons of petrol until we have wider experience of benzol.

CARS NOW BEING IMPORTED.

Two other items in the Budget affect motoring. The original scheme of the Board of Trade was that there should be no car imports until September, as it is recognized on the commercial side that after five years of war activities, and in face of the abnormal cost of raw materials and labour, our industry cannot expect to be working on a peace basis before that period. On the financial side it is of course pre-eminently undesirable to export a single pound on the acquisition of anything that can be bought here, where we are already paying a million a week by way of out-of-work doles, and the purchasing value of the sovereign is appreciably less than ten shillings. As regards the shipping situation, too, the first need is still for food-stuffs and raw materials.

Even in America, where the motor industry has only been directed to war activities for a brief period and, even so, kept mainly on its ordinary classes of work, there is no pretence that the motor manufacturers of the United States can get back to peace conditions this year. Most of them describe themselves as going slow, and statistics reveal that they will be 700,000 cars short of their home demand this year. But the Americans, who have doubled their national wealth as the result of this war, like the experience so much that, in place of resting on their achievements, they are making more strenuous efforts than ever to increase their national wealth in the future. Therefore they are making unprecedented efforts to increase export trade, which they intend to pursue no matter how short the home market goes. The reasoning is sound. The world's industries have been so enormously inflated during the war that it is only a matter of time until there will be over-production all round. That is when every nation will stand in sorest need of export trade. American industry intends to have a hold on the biggest export trade in the world against that crisis, for it knows that, once established, no nation but the Japanese could dislodge it; whereas if part of the current shortage of cars in America were to be made up by imports from Europe, such business

when lean times come will lapse automatically, since they can produce so much cheaper than the heavily taxed, war impoverished countries of the Old World. So the American importers were resolved not to wait until September to bring cars into this country, and they had an instrument ready to their hands in the permits granted to individuals not wholly dissociated from politics by the Board of Trade to bring cars into this country despite our need of food-stuffs and raw materials, and in the issue they have just wrung the concession whereby between now and September there may be imported half as many cars as were imported over a similar period in 1913.

HOW LABOUR GOVERNS CAR COSTS.

Mr. Chamberlain, however, while unable to make the importation of cars as profitable to the Exchequer as the bringing in of tobacco, which Mr. Bonar Law has described as being "nearly as profitable as bringing in gold," has contrived that one-third of the value of each car imported shall go to the Exchequer by way of duty. That does not disturb the American importers. Their scale of production is enormous and the costs are infinitesimal compared with our own, especially as American labour, while just as keen as our own on high wages, is better educated and is therefore eager to give output for money. For instance, it is sometimes advanced as an excuse for raising the wages of British labour that the American worker often takes home more money at the week-end than the Britisher; but if we entirely draw up the curtain we discover that the direct labour charges on producing a completely equipped 20-30 h.p. American car are £20; whereas for a British car of the same capacity they are more than ten times as much. What must be the situation, then, now that Japan is entering the motor manufacturing industry, with wages averaging about one-tenth of American wages and on American systems of production? If two Japanese workmen be worth only one American workman in the matter of output, still the Japanese will produce at one-tenth of American labour costs, which in turn are one-tenth of ours. The point seems to have escaped the students of manufacturing conditions the world over, yet not many years will pass before we shall be confronted with the results of this complete change in the situation. Its interest to the medical man is not merely academic. On the one hand he can foresee clearly that the world situation will ensure a speedy return to the production of cheaper and yet cheaper cars, while, on the other hand, if he is resident in the British Isles it is abundantly plain either that labour will have to become educated or that the national expenditure will reach a scale that cannot be maintained.

THE DOCTOR'S CAR MUST BE A BUSINESS PROPOSITION.

At present the conditions of car production in this country are wholly artificial and uncertain, therefore the risks are great; yet the need to provide employment is paramount. It cannot be pretended that the average cost of the cars issuing from our factories to-day is practical from the point of view of the average medical man for whom a motor vehicle is an essential part of his business equipment, which ought, therefore, to be available on terms that make it profitable to him to acquire such an instrument. There are, of course, exceptions here and there where relatively good value for money is offered. I do not know a single manufacturer who likes charging as much as he is compelled to ask for his current products. Some say that if the problem began and ended in their own works they think that by the autumn they could get back to something like a reasonable basis, because by then people would really be looking for work, as the Government can scarcely go on devising new unemployment doles; but the motor manufacturers are dependent on other industries, such as the steel, which, in turn, is dependent on the coal industry, with which the Government has dealt in a fashion that has permanently upset the basis of production of every engineering industry in this country from the raw material to the finished product. Oil and electricity will have their effect within the next three or four years, but it is not possible to foresee at present how they will give our industries all the steel and raw materials they need at competitive prices.

In the meantime, our motor manufacturers are really living from hand to mouth; but the Chancellor of the

Exchequer has his eye on the unemployment doles as well as on revenue, therefore he offers some sort of encouragement to industry to take the extraordinary risks of manufacturing at this period, when none can foretell how soon that relatively small section of the public which can afford and is willing to buy 1919 motor cars practically irrespective of price will have been supplied.

PENALIZATION OF NEW DESIGNS.

Between that market and the normal market of cars there is a vast price gap which most British manufacturers do not see their way to bridge, though all are trying to solve the problem by this means or that. Every manufacturer is very keen to embody in his car every lesson he has learned in the last five years; but if he alters his design to this end—often the change has been evolved to enable the given part to be made at a fraction of the former cost with a fraction of the labour, yet to give better service—labour says: But this is an entirely new proposition, and we must see that we get as much for making it. The price labour is getting in the factories now for working on an article of precisely the same design as it did before the war averages more than 100 per cent. more. When the new design of a given part comes up for consideration, the prices being demanded by labour on the average are such as to bring the cost of production up to at least the same cost had the old design been maintained, despite the fact that there may be only a quarter, or perhaps one-tenth, as much work in the production of the given new-style part. It is only another version of the nation's old enemy, the ca' canny policy, and it is a version which of course makes manufacturing enterprise impossible once the small section of would-be motor owners to whom money is no object has been satisfied. There is one solution of the problem which seems inevitable, and possibly the problem will not be solved until it comes automatically into operation with the lapse of time. The general public which keeps our motor industry in employment cannot afford wholly impossible highly priced cars. It will therefore be impossible for them to buy, and it will only want three months' demonstration of the fact to educate labour; but, unfortunately, that lesson will have to be taught at great risk and cost to the industry, because how can the individual manufacturer foretell to a week when the present limited market shall be overstocked and the real wide market of supplying medical men and others with cars at practical costs shall alone remain?

AMERICAN METHODS NOT YET PRACTICAL HERE.

One other point in dealing with this extraordinary transition period as it affects motoring and the medical man. It may be asked, Why does not the British industry reproduce American factories and production schemes exactly? There are several answers, among which the following brief ones may suffice.

It is observable that under our taxation and labour conditions no American manufacturer has any intention of availing himself of any of the magnificent American style munition factories on the market to set up, at less cost than he could do in his own country, a complete plant for duplicating his enterprise in conjunction with British trade union labour. Of course, there are American car assemblers, and semi-manufacturers, in this country, who work with non-union labour, and who are, incidentally, charging the public 100 per cent. more for their 1919 products than they were for their 1914 vehicles.

Some of the most enterprising and successful firms in the British industry have conferred together to see whether the case could be met by pooling their factories and making cars on the unit system or parts-specialist scheme. Expert investigation reveals that it cannot be done, in part because of transport costs. Even so they have not given up the pursuit of the problem; on the contrary, they have gone into the matter in such detail as to discover that it would need a capital of over 3 millions to set to work in the only practical way, by establishing an entirely fresh and self-complete enterprise exactly reproducing all the essential features of the American scheme, and there would not be any prospect of a return on the capital for some three years, even if all went well with the enterprise. Would scores of thousands of the British public invest in British enterprise on such terms? Statistics founded

on investigation of investors' lists of existing motor companies reveal that such numbers would be needed to support it. Though money could not be found that way, possibly it could be found by an aggregation of motor firms subscribing the necessary capital and guaranteeing out of their profits 5 or 6 per cent. interest for three years. But this is held to be impracticable because of the already proved attitude of labour in regard to the introduction of new processes of manufacture and new phases of design, and because it is beyond the power of the human mind to foretell accurately what will be the world condition in regard to motor-car production three years hence. The chances appear to be at least ninety-nine in a hundred that, instead of having a profitable business, it would be found that the motor industry of the world is hopelessly over-produced by then. Everybody who has studied the matter at all at first hand knows that over-production is a mere matter of time. For my part, I look for it to occur between twenty-four to thirty months from this date. In the meantime the medical man will realize that any number of practical minds are grappling with the problem of how to give him as speedily as possible what he needs in the matter of a car at the price he can afford to pay for it.

REPORT OF THE REGISTRAR-GENERAL FOR 1917.

THE report of the Registrar-General for the year 1917 follows the lines of its recent predecessors, and, both in matter and arrangement, maintains the superiority over other official collections of vital statistics which has for some time characterized the publications of Somerset House.

Births, Marriages, and Deaths.

The total civilian population of England and Wales in mid 1917 was estimated to be 14,085,300 males and 19,625,700 females. The populations at ages have been estimated by taking into account the numbers added to and withdrawn from each group, so far as that portion of the population is concerned the estimates for which in 1915 were founded upon the National Register count of that year. A combination of methods has been applied to the remainder of the population. Death-rates are based throughout upon civilian deaths and populations. A different population has been used for computing birth-rates, because married men in the services given occasional leave remain an effective element of the population so far as the birth-rate is concerned. The total population estimated for this purpose is 37,578,234, and the local civilian populations for birth-rate purposes have been obtained by increasing the estimate for death-rate purposes to the extent by which the birth-rate population of the whole country exceeds the civilian population.

The marriages numbered 258,855, giving the lowest rate yet recorded. The births numbered 668,346; 117,174 fewer than in 1916. In 1913 the crude birth-rate was 24.1 per 1,000, in 1914 23.8, in 1915 21.9, in 1916 20.9, and in 1917 17.8. Taking the average rate for the decennium 1871-80 as a standard, the 1917 figure is almost exactly 50 per cent. of the rate prevailing before the downward trend manifested itself.

The war has of course contributed powerfully to this decline; to what extent peace will contribute in restoring effective fertility remains to be seen.

In all, 486,965 civilian deaths were registered in 1917, corresponding to a rate of 14.4 per 1,000; corrected to the 1901 standard population, the standardized rate is 13.5. A lower rate has been recorded thrice—namely, in 1910, 1912, and 1916, but if allowance is made for the deterioration in physical quality of the existing civilian population of males—owing to military selection—there is reason to suppose that the rate in 1917 was, as an index of mortality, inferior to that of no other year. The standardized rate for females, which increased from 12.4 in 1914 to 13.2 in 1915, declined to 11.7 in 1916, and declined a little further, to 11.4, in 1917.

Child Mortality.

The most remarkable feature of the death-rates at ages is the very low mortality at ages 0-5 in both 1916 and 1917. When account is taken of the effect of the declining birth-rate in diminishing the proportion of exposed to risk at the earliest and most dangerous age, the rate for 1917 is found

slightly to exceed that of 1916, but both years still compare very favourably with any previous year. Mortality during the first year of life is examined in considerable detail by Dr. Stevenson. The conventional measure—namely, deaths under one year in proportion to births for the year—is unfavourable to 1917 in comparison with 1916, the per mille rates being 96 and 91 respectively; but the value of this measure is greatly impaired by the heavy fall in the birth-rate, and Dr. Stevenson provides other indices of mortality. A very simple and apparently satisfactory plan is based upon the experience of normal times that some 70 per cent. of the deaths of infants in any year are those of children born in that year, the remaining 30 per cent. being furnished by the births of the previous year. If the infant deaths of 1917 are divided by the sum of 30 per cent. of the 1916 births and 70 per cent. of the 1917 births, a similar course being taken with the deaths of 1916, the per mille rates are 91.7 for 1917 and 90.2 for 1916, the relation between the two averages being generally confirmed by other methods of statement; the general position in 1916 and 1917 has been decidedly favourable.

The returns for 1917 have for the first time been analysed so as to show the mortality of infancy by age and cause not only in the various classes of area, urban and rural, but in four sections of the country in each class of area.

Infant mortality is found to vary with geographical position to an extent not very much less than its well known variations with urbanization. For the whole twelve months of life the range is from 93 per cent. of the average in the Midlands to 112 per cent. in the North, as against a range from 85 in the rural districts to 111 in the county boroughs. The geographical variation is not so much affected by age as is that associated with type of area. In the first four weeks of life the range with variation of administrative type is only 5 per cent., but at age 9–12 months the rural districts have only 66 per cent. of the average mortality, the county boroughs 117 per cent. At this age the excess is as much as 33 per cent. in London. If one compares the same administrative units in different geographical situations, this increasing differentiation with age, if distinct, is not so great; thus, taking the county boroughs, the difference between the best and worst is 22 per cent. of the general average for the age group 0–4 weeks, 28 at age 4 weeks to 3 months, 34 at 6–9 months, 46 at 9–12 months. In each of the last cited examples the worst is the North and the best the South. If we may presume that the adverse influence of urbanization is at its maximum in London, such influence tells but little at first; with advancing age, however, it rapidly overcomes the advantages of London's southern position.

Dr. Stevenson follows the trail further and contrasts the mortalities for the first day of life, the first week, and the second and third weeks. He observes:

The table shows that the advantage of the South over the North is quite marked from the first day of life in all classes of area, the Midlands occupying an intermediate position in almost every instance. This is entirely in accord with the comparison of the mortalities of these areas at other ages and from most causes. The very first day of life produces the greatest departure shown in the table from the average for the whole country. This is found in the case of the rural districts of the North, where there is an excess of 27 per cent. A defective midwifery service at once suggests itself as the probable explanation, and this is supported by the general excess mortality of the rural districts in all sections of the country on the first day. It is only on this first day of life and in the rural districts that the mortality of the South is ever as high as that of the country at large, its advantage in other cases varying from 4 to 27 per cent.

The northern districts show an excess of mortality attributed to premature birth, and it is tempting to set this down to the greater volume of industrially employed mothers in the North.

This explanation, however, is not supported by the record of mortality from premature birth since the commencement of the war. The vastly increased industrial employment of women in 1916 and 1917, often upon work heavier than would be considered suitable for female labour in normal times, has been accompanied by no increase in mortality from premature birth. This rate, stated per 1,000 births, has been as follows in recent years: 1901–5, 20.2; 1906–10, 19.9; 1911–15, 19.7; 1916, 18.6; 1917, 19.1.

In congratulating ourselves upon the improvement in 1917 as compared with the last four years of peace, we shall do well to note Dr. Stevenson's caution, that of the whole decline, amounting to 13.04 per 1,000 births, 9.89 is "due to diarrhoea, mortality from which will almost certainly increase again in hotter summers. The decline under the heading of developmental and wasting diseases,

accounting for most of the balance of improvement, is probably of greater significance, and it may be hoped that it will continue to increase."

Passing to the mortality at ages 1 to 5 years, the experience of 1917 was somewhat less favourable than that of 1916, but much better than that of 1911–14.

Of the total fall of 1.66 per 1,000 in crude mortality as compared with 1911–14, no less than 1.36 is attributable to three infective diseases—diarrhoea, whooping-cough, and scarlet fever. As the number of deaths from these causes fluctuates so much from year to year the prospects of steadily maintaining the ground won are probably less than if the improvement had occurred elsewhere. In 1916 similarly 80 per cent. of the still greater improvement recorded in that year was due to measles and diarrhoea alone. The table, however, shows that about 40 per cent. of the total mortality at this time of life is due to diarrhoea and the acute specific diseases, and as these are probably the most preventable of the causes in the table it is very largely to them that we must look for permanent reduction below the level reached in 1911–14.

The differences in mortality during the second year of life exhibited by various administrative and geographical areas are similar in kind to but greater in magnitude than those apparent in the first year, the advantage enjoyed by the South being considerable.

Turning now to the other end of life, we find that the rate of mortality at ages over 75 has been considerably higher for both sexes in 1917 than before the war. Mortality at these ages rose to a high level in 1915, has since declined somewhat but remains above its pre-war level. All the causes distinguished, except cancer, contributed to the sudden rise of mortality in 1915, even "old age" showing a temporary increase in the proportion of deaths attributed to it. The *prima facie* inference is that the shock of war rendered the aged more vulnerable to disease in general. The war has of course provided evidence of a similar general lowering of resistance in persons at younger ages exposed to great mental strain under special conditions.

Causes of Death.

Passing to the nosological record, we find that for the first time less than 1,000 deaths (977) were attributed to enteric. Only three deaths were attributed to small-pox and in two of these the diagnosis was doubtful. Measles was responsible for 10,538 deaths, nearly double the number recorded in 1916, but still providing a mortality-rate somewhat below the average. The death-rate from scarlet fever was much the smallest yet found. Taking the rate per million on ages under 15 years as being unaffected by recruiting, the figures for each year from 1911 to 1917 (inclusive) are: 158, 167, 174, 231, 186, 110, 60. The average for 1901–5 was 366, and for 1906–10, 257. The mortality from whooping-cough was likewise favourable, the series of rates at ages under 15 from 1911 to 1917 (inclusive) being 703, 751, 488, 714, 717, 536, 399.

The mortality from tuberculosis amongst males was too much affected by transitory circumstances for it to be of value as an index of the normal trend. On the other hand, the female mortality is instructive. The rate in 1917 was 13 per cent. greater than in 1913, the serious increase being concentrated upon ages 5 to 25 at which it ranges from 21–42 per cent., the greatest increase at any other age being 9 per cent. In the report for 1916 Dr. Stevenson suggested that the rise might be due to factory conditions, and this point was examined in some detail by Captain Greenwood and Dr. Tebb in a report to the Medical Research Committee, which was summarized in our issue of March 15th. Dr. Stevenson still considers that the industrial factor may have been responsible for the chief part of the rise, that at ages 15–25, but he notes that this would not explain the increase of mortality at ages 5–15. He suggests that a change of diet, perhaps a deprivation of fats, may have played a part—a suggestion substantiated by the fact that the improvement in tuberculosis mortality in the age-group 0–5 is confined to the first two years of life, the 1917 rate being higher than the pre-war average for ages over 2.

If diet has anything to do with the matter, it would presumably be children under 2 who would suffer last, the baby receiving his full fat ration in the form of milk, even if his elder brothers and sisters had to go somewhat short.

The death-rate from syphilis has risen, and Dr. Stevenson is inclined to think that the elevation is not a mere consequence of increased accuracy of certification.

In 1917 41,158 deaths were ascribed to cancer, furnishing the highest crude rates of mortality yet reached. Dr. Stevenson devotes several pages to the discussion of the problem whether the increase of cancer is a real increase

or only a reflexion of improved skill in diagnosis. The latter hypothesis was supported by the analysis of Frankfort data made in 1893 by King and Newsholme, and has since been discussed by numerous statisticians, including Hoffman and Willcox in America, Parkes, Greenwood, and Wood in England, Prinzing in Germany. Willcox has brought the Frankfort statistics used by Newsholme and King down to 1913, and the more recent data support the inference of the last-named authors as to the share of the increase borne by cancer of inaccessible sites for which improvement of diagnosis might be responsible. But the analysis provided by Dr. Stevenson of the much more numerous English data points to a very different conclusion.

Taking the longer interval of nineteen years, 1897-98 to 1916-17, the growth of mortality from accessible cancer has been 56 per cent. amongst males, as against an increase of only 41 per cent. from inaccessible. This remarkable and quite unexpected result makes it very difficult to attribute so important a share in the recorded increase in the cancer of males to improved diagnosis as has hitherto seemed probable.

It appears to us that Dr. Stevenson's analysis almost amounts to a demonstration that a real increase of cancer has taken place, and such we should judge to be his own opinion, although objections and possible sources of fallacy are displayed with the scientific candour which we have long learned to expect in the publications of the Registrar-General's department.

The deaths attributable to alcoholism have decreased. Upon this Dr. Stevenson writes:

It is impossible to avoid associating this sudden drop in mortality with the restrictions in the output of alcoholic liquors and of public-house hours brought about by the war, but it is advisable to bear in mind that many other changes have occurred since 1914, some of which might have a bearing upon the matter.

The deaths allocated to cerebro-spinal fever numbered 1,531 in 1917, as against 1,214 in 1916 and 1,974 in 1915. The highest numbers previously recorded were 194 in 1914 and 163 in 1913.

Altogether 39,832 persons died of some form of pneumonia. Outside of London, mortality decreased generally from North to South and the mortality also decreased with decreasing urbanization (being 1,400 per million for London, 1,358 for county boroughs, 1,017 for other urban districts, and 843 for rural districts). Both features are so regular from year to year that they may be accepted as defining the habitual type of distribution in this country.

We have now briefly summarized the more important results contained in the official analysis of our vital statistics during 1917, and we think an especially heavy debt of thanks is owing to Sir Bernard Mallett, Dr. Stevenson, and their depleted staff for the admirable manner in which the report is drawn up, despite the difficulties of the time. It is plain that the results here communicated suggest many promising and important lines of investigation which might well engage the attention of the new Ministry of Health.

THE present arrangement whereby the cost of the campaign against venereal disease in Norway is largely defrayed by the local authorities has proved unsatisfactory. It is objected that an unfair share of the burden is thrown on large centres, such as Christiania, to which patients are drafted for treatment from other districts. Certain local authorities have shown greater zeal in palming off their "undesirables" on to other bodies than in providing for treatment at home. These tactics lead to circumlocution and a game of shuttlecock, in which not only the patient suffers but the spread of the disease is facilitated. For this and other reasons a committee has been appointed, consisting of three medical experts and two laymen, to inquire whether the administrative schemes should be transferred from the local to the central authority. This committee will also consider the proposal that all the expenses connected with the treatment of venereal disease shall be defrayed by the state, irrespective of the patient's means. Hitherto the local authorities have borne only a portion of the cost of treatment. The problems connected with compulsory treatment will also be investigated by this committee, whose recommendations, it is anticipated, will inspire, if they do not actually determine, the character of the impending venereal disease legislation in Norway.

VITAMINES.

THE word "vitamine" is not as old as the present century, and however objectionable it may be in itself, it seems to have obtained a permanent footing in medical literature. It is certainly less cumbersome than the expression "accessory food factor" which has been suggested as a substitute. The actual word employed is after all of small moment; the important point is what it connotes. It is a matter of everyday physiological knowledge that our bodies are built out of proteins, fats, carbohydrates, salts and water, and that these substances must be taken in certain proportions and in sufficient quantity to repair the body waste, and furnish the energy necessary for its activities. But recent research has shown that these substances alone are incapable of maintaining life. Something else is required, the chemical nature of which is at present unknown, and it is to these unknown but indispensable accessory substances that the term *vitamine* has been applied.

Professor F. G. Hopkins of Cambridge, a pioneer in this branch of research, has suggested a useful simile to help us to understand the problem. He compares the building of the body to the building of a house; the essential bricks or blocks of stone of which the walls of the house are composed would be of comparatively little use unless mortar or cement was also supplied to unite these components together, and it is the cementing material which he compares to the *vitamines*. It would be dangerous to press the analogy too far for the exact rôle of the *vitamines* is still hidden from us, but the simile is a useful one to indicate one way at least in which they can render the important building stones of real service, and it is accurate in a quantitative sense. The mortar in the walls of a house makes up but a small proportion of the structure; it is exactly the same in the case of the *vitamines*—they bear but a small proportion to the total food supply. When they are withheld from the food, as when chemically pure proteins, fats, carbohydrates, salts and water are administered, health deteriorates, in young animals growth ceases, and, if the treatment is continued, death is the inevitable result. Health can be at once re-established if the diet is amplified by adding to it a natural food, such as a small amount of milk, for foods as they occur in nature contain the accessory factors necessary for growth and maintenance. The foregoing statements are commonplaces to the modern physiologist, but to the practising medical man they may be new, and I trust to show they are important practically. So many are the treated, purified, and sophisticated foods at present on the market, that it is most important to the dietician to remember that these are but poor substitutes for the foods which are made in nature's laboratory.

Although biochemists have not yet got so far as to be able to state what is the chemical structure of these *vitamines*, research has, at any rate, progressed far enough to make it certain that they are numerous, and it is around three of them that research has mainly centred. They are products of the plant world, and it is on plants that all animals ultimately live. Animals have greater synthetic powers than was formerly believed to be the case, but, so far as is at present known, they are not able to synthesize or manufacture *vitamines*. The *vitamines* can be separated by their varying solubilities in water and other agents, they can be distinguished by their varying powers of resistance to heat and other drastic

agencies, and, further, they are differently distributed in various parts of the vegetable world.

Their absence prevents healthy growth and leads to death, but the symptoms manifested are different in the three cases. The diseases due to their absence are very conveniently grouped together as "deficiency diseases." Among such diseases are beri-beri, pellagra, and, coming nearer home, scurvy and rickets.

The first of these vitamins is contained in the embryo or "germ" of cereal seeds. When milling is carried to a high degree this portion of the grain is removed, hence polished rice and superfine white wheat flour, though they may appeal to the aesthetic sense, are of inferior value as foods. It is now firmly established that beri-beri, the disease of the rice-eating nations, is due to the use of polished rice, and can be prevented or cured by adding the polishings to the diet. Polished rice produces the disease not because it contains a poison, but because it lacks the vitamin. Using the non-committal nomenclature introduced by American physiologists, it is now usual to speak of this vitamin, on account of its solubility in water, as "water-soluble B."

The second is contained in the majority of animal fats (lard is an exception), and is particularly abundant in milk fat, and in certain fish oils such as cod-liver oil. It is specially important as a growth factor, and therefore indispensable in early life. It is absent in vegetable fats. Here we have one more indication of the value of milk for the young, an explanation of the potency of cod-liver oil in curing malnutrition, and a warning of the danger of vegetable margarines if employed as the only source of fat in the food of the growing section of the population, or of expectant mothers. It is usual to dub this vitamin "fat-soluble A." There is accumulating evidence to show that its absence or deficiency is an etiological factor in rickets. Like its water-soluble companion, it is ultimately a vegetable product, and is contained in high concentration in the green portions of plants.

The third vitamin is also soluble in water, and, as Dr. Drummond suggests, it may be called "water-soluble C." This is the antiscorbutic principle, and is found in the juices of fruits (the orange and lemon are here pre-eminent) and in most edible vegetables. It is characterized by its extreme lability, being destroyed by moderately high temperatures, treatment with alkali, by desiccation, canning processes, and the like. Hence arises the value of fresh fruit and vegetables in the prevention of scurvy.

The object of this article, however, is not so much to indicate to the practitioner the elementary principles of our knowledge of the vitamins—that could be accomplished by the perusal of any recent book on physiology or scientific dietetics—but to go a little further, as a result of reflection and study of the subject. An appreciation of the main fundamentals is, however, necessary to realize that the subject is one of the highest importance and has bearings beyond those I have up to this point briefly summarized. It is perhaps not going too far to state that the conception underlying it bids fair to have as far-reaching results as those which have followed a study of internal secretions, and all that another modern word ("hormone") has been instrumental in introducing into medical minds.

To label a disease by a specific name, beri-beri, rickets, etc., and to fathom its cause, and lead us to a rational and successful treatment of the same is no mean accomplishment, but what about those more numerous ailments to which it is impossible to give a name, so vague and puzzling are the symptoms

they exhibit. May it not be that many so-called minor conditions of malnutrition may be due to lack of vitamins, or to a deficiency in their supply? Although at present three vitamins have been brought into the light of investigation, who can say that the list is complete? It is more than probable that obscure and apparently trivial complaints may in the future also be found to be deficiency diseases. An obvious state of malnutrition in the infant may pass away, and yet it may leave its mark behind it and cause far-reaching results later in life. Take, for example, that curse of modern days—dental caries. Already, as Mrs. Mellanby has shown, there are signs that this is just such a condition, and that its cause is probably a deficiency (earlier in life) of a vitamin not very different from "fat-soluble A."

The subject is still in its infancy; we know a few main facts. How vast is our ignorance; how vast also would be our power to benefit humanity were this ignorance to be dispelled. Happily many workers are taking up the subject and exploring the numerous by-paths that the main idea has opened up. The most important work of this nature recently brought before the medical profession is that by Lieut.-Colonel R. McCarrison, already well known for his fruitful work on the thyroid gland. His paper is entitled "The pathogenesis of deficiency disease," and appears in the current volume of the *Indian Journal of Medical Research* (January, 1919, vol. vi, pp. 275-355). A brief summary of his main conclusions was published in the *BRITISH MEDICAL JOURNAL*, February 15th, 1919, p. 177 et seq. I have read the full paper, and, considering the difficulties of research in an Indian provincial institute, regard it as a monument, not only to the enthusiast, but also to the ability of one endowed with the capacity for real research work. The disease in particular he at present has dealt with is beri-beri; this complaint can be produced easily in birds by withholding water-soluble B, or, in other words, by feeding upon highly milled cereal grains. So far the nervous symptoms of this disease—spoker of as neuritic—have attracted most attention, so much so that the term "antineuritic vitamin" has been used as a synonym for water-soluble B. But McCarrison has shown that the condition is more than a functional and degenerative condition of the nervous system—that it is one in which practically every organ and tissue of the body is involved. The organs of digestion and assimilation are particularly affected, and thus many of the symptoms owe their existence to the chronic inanition so produced. The lowered vitality then renders the body an easy prey to infectious and parasitic agents, and thus other symptoms become explicable. Among the many remarkable results chronicled is the one that while the adrenals hypertrophy, there are other organs which atrophy, and in order of severity these are the thymus, the testes, spleen, ovary, pancreas, heart, liver, kidneys, stomach, thyroid, and the brain least.

It therefore appears that the organs which atrophy provide a reserve of vitamin for use in periods of stress; the reserve, however, is soon exhausted. But seeing that this *JOURNAL* has so recently published a list of the author's conclusions, it would be a work of supererogation for me to recapitulate them. One can only hope that sufficient has been said to induce those interested to read the paper, which contains the evidence in full. One also trusts that Lieut.-Colonel McCarrison will continue this useful and epoch-marking work, and that others will also ply their spades in this fruitful field.

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THE TRANSITION BUDGET.

THOSE enterprising persons who annually indulge in "intelligent anticipation" of the Budget had an easier task than usual this year, for with the recently appointed Royal Commission on the Income Tax not yet in active operation, it was not to be supposed that any substantial alteration in that tax would form part of the Chancellor's proposals for this year's finance, and a substantial reduction in the rate of the excess profits duty was generally anticipated, partly on account of the grave economic effects of that duty on individual effort and on the accretion of capital, and partly because a continuance of a high rate of duty would be unprofitable to the Exchequer in those cases in which a failure to maintain the pre-war standard of profit in "demobilization" conditions would give rise to a claim for a refund of excess profits duty paid during the war. Although there are no surprises in the Budget, it is none the less of vital concern to the taxpayers, and more especially to that growing section who study with real interest the steps which the nation is taking to put in order the finances—both income and expenditure—so that the already urgent and difficult problems of resettlement can be faced and worked out to their best solutions, unhindered by anxieties as to whether the annual charges resulting from the war can be met without so great a dead-weight of taxation as to preclude expenditure necessary for raising the physical and social health of the community. A transition budget has this mark of importance, that the method and magnitude of the transit must have a not inconsiderable effect on the ultimate goal.

The point in the Chancellor's speech which is of most direct interest to the medical profession is that dealing with the motor spirit duties. He admitted that that duty, involving as it did a discrimination not according to the nature of the article but according to the purpose to which it was put, was complicated and expensive to administer, and gave a wide opportunity for fraud and evasion. Evidently he hopes next year to abolish the duty altogether in substitution for a charge on the users of cars levied in some other form, and in the meantime has undertaken the abolition of the motor spirit licence duty collected by the Petrol Control Committee of the Board of Trade, and the exemption of benzol from taxation. This will be of some benefit to practitioners generally, and we assume that whatever form the new motor duties may take next year the claims of the medical profession to special treatment will not be overlooked.

The interest of the general public naturally centres chiefly in the imperial preference proposals, and is heightened by the striking coincidence which brings Mr. Austen Chamberlain forward from the Treasury Bench to introduce the first legislation on the lines of the proposals with which his father's name is so inseparably connected. Naturally there has been a good deal of, sometimes vehement, reference to the thin end of the wedge, but most men will take the moderate view, and, while gladly accepting the present proposals, and, indeed, hoping for further action along

the same line, will consider such matters as may be brought forward for "preferential" treatment on their own merits and not merely as a means to complete Free Trade on the one hand or a watertight tariff wall on the other. In the meantime the Dominions which have stood by the Mother Country in her hour of trial are to receive such encouragement and help in their trade as can be given by way of a reduction in our existing import duties, and a beginning will thus be made in putting to the test of actual practice the principles for which one of England's great political leaders resigned his office and fought so strenuously. The great experiment is fairly launched and colonial business acumen and energy may be trusted to see that it achieves success. The list of articles on which a preference is to be given is not lengthy, but would have been shorter still had it not been for the special duties on cinema films, clocks, motor cars, etc., levied since the outbreak of war. The preference may be stated in general terms to amount to one-sixth on such raw materials, and one-third on such manufactured goods, as are already subject to customs duties; the former may confidently be expected to give a stimulus to the production within the British commonwealth of such commodities as tea, sugar, tobacco, and cocoa, already largely grown in India and the Colonies, which will no doubt be grown on a still larger scale in view of the future more favourable conditions in the home markets; and the latter preference will assist the Colonies in nourishing their "infant industries," and incidentally save this country from the danger of any sustained attempt at Continental "dumping" in the future.

The increased duty on spirits will inevitably give rise to more or less strenuous protest, but the high profits made by the manufacturers of and wholesale dealers in whisky have been common knowledge for some time, and the Chancellor may rely on receiving an abundance of popular support in his action, directed as it is to the extraction of an increased Excise revenue from a notoriously prosperous trade at the moment when the 80 per cent. excess profits duty is to be halved, and that check to profiteering correspondingly weakened.

The Chancellor spoke his mind freely and with conviction on the proposals of the Labour party to institute a levy on capital, and has, we are glad to see, the almost unanimous support of the public press. At the same time, he went some way towards disarming his critics by a very substantial stiffening of the death duties on large estates. One effect of this will no doubt be to increase dispositions of property *inter vivos*, but from some standpoints such an effect is not altogether to be deprecated.

We have already suggested that this Budget is not one of specific interest to the medical profession, but we have a qualification to add. The simple and really obvious fact, that given a certain amount of taxation to be raised a relief to one section of the community necessarily implies a burden on another, is too often overlooked. The basis of calculation of the different Chancellors during the war has been that the revenue to be raised for any year must never be less than the probable normal peace expenditure will require. It is on this basis that Mr. Austen Chamberlain has framed his proposals, and has been able to provide substantial remissions of existing taxes. It is in no grudging spirit, but with every desire to present the position fully and clearly, that we venture to point out that the outstanding concession contained in the Budget—that under which the rate of excess profits duty is reduced as from January 1st, 1919, from 80 per cent. to 40 per

cent.—affects the mercantile and manufacturing portions of the community only, and that substantially the burden of the professional classes is unrelieved. We trust that next year, when the report of the Royal Commission on Income Tax is available, the Chancellor will bear in mind the claims of those who have to pay a tax, so widely diffused, to a substantial reduction from its present very high level.

THE AFTER-EFFECTS OF GAS POISONING.

THERE is, happily, growing reason to think that only a very small percentage of the surviving gas casualties of the war will suffer from any permanent disability. A large number of the sequelae of all types of poison gassing are functional in character—such, for instance, as the so-called D.A.H., tachycardia, dyspnoea and pain in the chest on exertion, spasmodic cough, and vomiting. For these conditions lapse of time, cessation of hostilities, and, if necessary, treatment by graduated exercises and other appropriate measures, will almost certainly effect a complete cure. Certain organic lesions will, however, remain. Following the action of lung irritants—as we prefer to call what French observers style the asphyxiating gases—the most prominent lesions are chronic bronchitis, bronchiectasis, and pronounced emphysema. A prolonged polycythaemia is also seen, associated with the disturbance in the pulmonary vascular bed that follows the capillary thrombosis in the acute stages, and evidenced by nocturnal asthma and night terrors. For this condition the treatment—still in the experimental stage—which consists in keeping the patient in a highly oxygenated atmosphere for five days, promises relief. Mustard gas also will leave some of its victims permanently damaged; for a substance which acts as a chemical irritant will, if in sufficient concentration, destroy tissues, whether the eye, the skin, or the respiratory tract. In greater dilution the after-effects of mustard gas are mainly to be found in the lungs, where a purulent bronchiolitis or bronchopneumonia has been set up. Hence will result chronic bronchitis, bronchiectasis, and pulmonary fibrosis of varying extent.

There is no body of evidence to indicate that gassing has set up a predisposition to disease other than tubercle, which is more probably rekindled than caused. Effects on the kidneys are rare. Where a condition of asphyxia has been prolonged the kidney may suffer from pressure effects, but there is no proof of direct action of any gas on the renal tissue. As rarities may be mentioned the occurrence of peripheral thrombosis, following both mustard gas and lung irritant, and an occasional condition of psychasthenia aggravated by gas poison.

It would appear from a communication to the Académie de Médecine by Dr. Charles Achard, on the sequelae of gas poisoning,¹ that British experience in this matter is on the whole borne out by that of French observers. This paper is based on the observation of 3,525 cases during a period of twenty-three months. The author found that mustard gas was the cause of the largest number of sequelae, although the more serious lesions were most commonly due to "asphyxiating gas." Respiratory complications were by far the most important. Some cases presented relatively slight functional disturbances, such as cough, dyspnoea, and asthmatic attacks, while in others these symptoms were accompanied by physical signs. The respiratory exchange was sometimes

found to be considerably diminished, especially after the action of asphyxiating gas, owing to persistent interference with respiration, due, as is now shown by experiments on animals, to late pulmonary lesions. The physical signs observed were those of emphysema or chronic bronchitis; sometimes they were confined to the apex. These symptoms, especially after asphyxiating gas, might last long—in some cases two to three years. The most interesting, the bronchitic type, simulated tuberculosis by the occurrence of slight haemoptysis, physical signs at the apex, occasionally pronounced emaciation, and an evening rise of temperature. As a rule, however, no sign of tuberculous lesions was revealed by x rays or examination of the sputum; in course of time, varying from a few months to more than a year, the fever and other symptoms disappeared. In some cases, but much more rarely than was at first supposed, tuberculosis occurred as a secondary complication a long time after acute symptoms of gas poisoning had subsided; usually it was due to the recrudescence of previous latent lesions.

Dr. Achard notes that various digestive disturbances may persist after gas poisoning. Some patients showed a marked intolerance for meat, eggs, or wine, and others suffered from hyperacidity or from chronic enteritis. In a number of cases, however, symptoms of this kind were found on inquiry to be due to errors in diet and alcoholism. Cardiac symptoms, such as palpitation, shortness of breath on exertion, tachycardia, and a delayed return to the normal cardiac rhythm after muscular effort, might persist for long. The liver and kidneys were, as a rule, only very slightly damaged by acute gas poisoning, and were hardly ever the seat of persistent after-effects.

The outlook for these cases would, therefore, in general appear to be more hopeful than was at one time feared.

A CONFERENCE OF MEDICAL BODIES.

THE Council of the British Medical Association on April 16th, acting upon a suggestion made to it by the Association of Panel Committees, decided to call a conference of representatives of various medical bodies, with a view to securing common action in medico-political affairs. Invitations were accordingly sent to the Association of Panel Committees, the Medico-Political Union, the Medical Parliamentary Committee, the Medical Women's Federation, the National Medical Union, and the State Medical Service Association. A conference was held at 429, Strand, on May 6th, with Dr. T. W. H. Garstang in the chair, and, after a discussion which it is hoped will prove profitable, was adjourned to an early date. An agreed report of the proceedings will be published.

LIQUOR CONTROL.

It will be admitted on all hands that the position with regard to the manufacture and sale of alcoholic beverages in this country requires attention. The present restrictions have only temporary sanction. The regulations limit the number of hours during which alcoholic beverages may be sold, diminish their strength, and increase their price. The general tendency of the regulations was no doubt toward diminishing consumption, and so preventing the conversion of cereals required for food into beverages which have little or no food value. The regulations with regard to the number of hours during which sale is permitted were, however, imposed mainly in order to check drunkenness. It has not been established that the other two have any effect in this direction, though the revenue received by the state has been increased and also the profits of brewers and distillers. We believe that there is a considerable body of public opinion in favour of

¹ Bull. de l'Acad. Méd., 3^{me} sér., lxxxi, 135

maintaining the restrictions as to the hours of sale, the reduction of the number of licences issued, and the encouragement of the principle of establishing food taverns, which, as Dr. Barnes explained in the *JOURNAL* of April 19th, p. 487, has been successful in Carlisle and its neighbourhood, where the chief experiment of the Central Control Board (Liquor Traffic) has been carried out. Lord D'Abernon, the chairman of the board, who wrote a preface for the first edition of Mr. Carter's book on *The Control of the Drink Trade in Britain*,¹ has now written a postscript for the second edition, published this week. In it he says that the experience of the last eighteen months enables him to speak somewhat more confidently of the immense possibilities of an improved level of temperance under a system of reasonable and scientific control. The vital and essential question is, he says, Can alcohol be controlled or not? The United States have answered the question in the negative, affirming that nothing is of value but total prohibition, and the greater part of Canada appears to take the same view. Lord D'Abernon does not accept it for this country; he believes that control can effect all that is required, and would possibly give more than would be gained under prohibition. He admits the issue to be doubtful, depending upon the good sense of the public and the wisdom of Parliament. Did the choice lie between prohibition and a relapse to pre-war conditions he would be prepared to support prohibition at any cost. But he holds that it is no longer doubtful that under an appropriate system of restriction a high level of temperance can be attained in this country, and thus national efficiency enhanced and general prosperity and happiness increased. In order to attain these ends the regulations must be both restrictive and constructive, and must involve a certain constraint upon those who require no protection against themselves as well as upon those who do. But public opinion must be convinced of the necessity of restriction, and Parliament must act upon this public opinion. "There can," he says, "be no question of the prolongation of the powers which were given to existing authorities for the period of the war. In order that the modifications and adjustments which may be necessary to suit the conditions of peace may be properly effected, a new departure will have to be made, a new commission issued. But to a large extent recent experience must and should govern future conduct." So far as we are able to judge, the medical profession as a whole is not convinced of the necessity for total prohibition, but would, by a large majority, agree with the chairman of the board, in advising restrictions of the nature already indicated—namely, a reduction of the number of licensed houses and greater limitation of the hours of sale than existed before the war—and would approve any measures tending to make licensed houses places to which people resorted primarily for food, and not for mere drinking at stand-up bars.

MEDICAL BOARDING FOR PENSIONS.

The opening proceedings of the Select Committee on Soldiers' and Sailors' Pensions, over which Sir Montague Barlow presided, are reported at p. 590, and it will be seen that Sir Albert Flynn, formerly of the War Office but now acting secretary of the Ministry of Pensions, gave evidence which seemed to imply serious reflections on the competence of certain medical boards. The evidence given by this official was preliminary, and, perhaps on this account, failed to give a correct impression of what actually happens. We have no doubt that before the inquiry has gone much further evidence will be given on the whole matter of the examination by medical boards of discharged invalided men and the translation of the recommendation of these boards into monetary awards.

Medical boards fall into two main classes—those which examine men for the first award, and re-examining boards. The first medical boards, which examine men on discharge from the service, report upon attributability—that is to say, whether a man is entitled to a pension or gratuity—and assess the degree of disablement. The boards for the purpose of these first awards are the boards at military hospitals composed of military medical officers; boards at naval hospitals composed of naval medical officers; boards at discharge centres composed of a civilian chairman, one civilian member (both under the Ministry of Pensions), and one military member; and dispersal hospital boards, which are military boards with one civilian member representing the Ministry of Pensions. All first awards are made as the result of examination by one or other of these boards, except in the case of men suffering from war neuroses who come before a special medical board of the Ministry of Pensions. Exception is also made in the case of men claiming under the "Z" scheme. The medical re-examining boards are concerned primarily with the periodic reassessment of the degree of disablement and consider questions of attributability only if they arise in connexion with disabilities other than those recorded in the discharge documents as existing on discharge and in respect of which a pension was granted. All the re-examining boards with the exception of those for war neuroses consist of civilians—that is, one civilian whole-time official of the Ministry of Pensions as chairman, and two part-time civilian members selected from a list of medical practitioners, one of whom is frequently a specialist. The findings and recommendations of the boards are intended to apply for as long as the circumstances at the time of examination permit. If a man is at a military hospital and is there discharged from the army by the medical board the whole of the discharge documents are prepared by that board. In such a case the man leaves with coupons for four weeks' full pension and his papers are usually sufficiently complete to enable the award of a temporary pension for the following six or twelve months without examination. To provide for immediate necessities which may arise prior to boarding in the case of claimants to pensions after demobilization or between successive boards, medical referees of the Ministry of Pensions may examine the claimants or pensioners, and furnish certificates which are an authority to local war pensions committees to make monetary advances, or order medical treatment, or take both courses. Another class of case is composed of men who claim a pension at a later stage after discharge, and who come into touch with the pensions machinery by applying to the local war pensions committee, claiming to be suffering from incapacity due to injury or disease contracted in the service.

THE ROYAL ACADEMY.

The Royal Academy exhibition this year, which was opened to the public on Monday, presents the usual medley of good, bad, and indifferent pictures. The good are far between, and there are few, if any, that can be described as works of genius. No artist of repute has added much to his reputation, save perhaps in the main sculpture gallery, where Captain Derwent Wood (whose services to plastic facial surgery during the war are well known) has two noteworthy busts and a large bronze statue of a nude figure conceived and executed in the grand manner. In a corner of the same gallery may be seen a sympathetic head of the mother of two R.A.M.C. officers, modelled by her daughter. There are many khaki portraits and topical war pictures, and most of them are very poor; but British pictorial art as a whole is always better than might be supposed after a visit to the R.A. exhibition, which frankly makes a popular appeal and asks only of the unknown artist that he should conform to the academic convention. In recent years the sky-line picture has been abolished, and with it has gone much of the

¹ *The Control of the Drink Trade in Britain: A Contribution to National Efficiency during the Great War 1915-18.* By Henry Carter. London: Longmans, Green, and Co. 1919. (Demy 8vo, pp. xix + 543; illustrated. 4s. 6d.)

"academy headache." Among the large oil paintings in Gallery V there is a full-dress portrait of Lieut.-General Sir Alfred Keogh, by Arthur Hacker; a memorial picture of the late Dr. David Little, operating for cataract; and a cheap sensation labelled "Cocaine." Elsewhere there is a life-like representation in oils, by A. T. Nowell, of Dr. Edwin Rayner, late treasurer of the British Medical Association, and a portrait of Colonel Atwood Thorne, late officer commanding the 4th London General Hospital. Among the water-colours will be found a portrait of Dr. Theo. B. Hyslop, surmounted by a pleasing study of the interior of an old apothecary's shop by Lucy Pierce, whose talent in showing the still life possibilities of druggists' bottles appears also in a picture called "Empties." The black and white room contains a good engraving, by H. Macbeth-Raeburn, of Fiddes Watt's portrait of Lord Finlay (who is an Edinburgh graduate in medicine), and a drawing of Prospect Hill, Peking, by Major W. Perceval Yetts, who, so far as we know, is the only exhibitor belonging to the medical profession. There are several fine paintings by Sargent, including the great mural decoration "Gassed," which has been lent by the Imperial War Museum. Beyond this, the medical side of war does not form the subject of any important work, except perhaps Lavery's sketch of the ball-room of Londonderry House as a hospital ward.

A NOBLE ITALIAN DOCTOR.

THROUGH the courtesy of Dr. Barber of Sandown we have been allowed to see a touching tribute to a captain in the Italian medical service, written by an ex-private of the British army, who was a wounded prisoner of war at Stendal, in Germany. The writer was ten months in captivity; during the first month he was an inmate of five German hospitals; the rest of the time was spent in the lazarette of Stendal camp. Dr. Giuseppe del Vastor, he says, will be gratefully remembered by thousands of Englishmen, and by as many repatriated prisoners of other allied nationalities. "Thanks to the magnificent example and devoted attention of this doctor, my life was probably spared me; and thanks again to his strong will and personality, which prevailed even over the German doctors who were in charge, our life there was made, to say the least, tolerable by this remarkable man. During my time there I had every opportunity to see, under the fearful conditions, and the want of ordinary materials which were so vitally necessary, what a terrible task this man had to carry on his work; and although he carried through hundreds of operations of every description with his own hands, and in every case without an anaesthetic, the results, if only the men could be collected to speak for themselves, would I know be astounding." The writer, after praising Dr. del Vastor's wonderful skill, patience, and devotion, adds, "He incessantly worked all day, and sometimes very nearly all night." This modest document has the ring of truth, and we gladly comply with the request of our correspondent that the profession in this country may be made aware of the devotion and goodness shown by an Italian *confrère* towards helpless British prisoners.

THE ANNUAL REPRESENTATIVE MEETING.

As already announced in the SUPPLEMENT, the Annual Representative Meeting of the British Medical Association will be held in London this year, beginning on Thursday, July 24th. The Annual Report of the Council for 1918-19 was printed in full in last week's SUPPLEMENT. It is within the discretion of each constituency to decide whether the election of its representative, or representatives, shall be carried out by a general meeting of the constituency, or by postal vote; but the election must take place not later than June 24th. The provisional agenda for the Annual Representative Meeting is published in this

week's SUPPLEMENT; it includes only such items as are known to require the consideration of the Divisions. Notice of motion by Divisions, constituencies, or Branches for the consideration of the Representative Meeting, proposing to make any addition to, any amendment, alteration, or repeal of, any regulation or by-law; or to make any regulation or by-law; or proposing material alteration in the policy of the Association, must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 20th. The Annual Conference of honorary secretaries of Divisions and Branches will be held this year on Wednesday, July 23rd. The Annual General Meeting of the Association will be held at the Connaught Rooms, London, on Friday, July 25th, at 2 p.m.

LIEUT.-COLONEL SIR WALTER BUCHANAN, K.C.I.E., is retiring from the Indian Medical Service and vacating the appointment of Inspector-General of Prisons, Bengal Presidency, which he has occupied for seventeen years. He is succeeded in the office of editor of the *Indian Medical Gazette*, which he has held for twenty years, by Lieut.-Colonel D. McCay, I.M.S., professor of medicine in the Medical College, Calcutta.

THE Oliver-Sharpey lectures before the Royal College of Physicians of London will be given by Professor E. H. Starling, C.M.G., F.R.S., on June 3rd and 5th, his subject being the feeding of nations—a study in applied physiology. The Croonian lectures, on the significance of the cerebral cortex, will be given by Professor G. Elliot-Smith, F.R.S., on June 12th, 17th, 19th, and 24th. The lectures will be given at the College at 5 p.m. on each day.

Medical Notes in Parliament.

Ministry of Health Bill.

SECOND READING DEBATE IN THE HOUSE OF LORDS.

IN the House of Lords, on May 1st, Viscount Sandhurst, on behalf of the Government, moved the second reading of the Ministry of Health Bill. Dealing with the proposal to place the Medical Research Committee under the Privy Council, he said that that Committee would have the widest possible field; the Health Ministry would continue, as the successor of the Local Government Board, to have its own staff for medical research, to do work as necessity demanded or opportunity suggested. Other departments would work in the same way with the Research Committee to advise or assist. The object was that research should not be cramped nor confined within one department. Coming to the proposal for setting up consultative councils, Viscount Sandhurst stated more fully than did Dr. Addison in Standing Committee of the House of Commons what these councils would be. There would, he said, be a medical consultative council of men and women, with a subcommittee, not limited as to personnel to the parent consultative council, for ancillary services, such as nursing and midwifery; there might be a consultative council for local administration, composed of experienced people recommended to the Minister—for example, by county councils or associations of county councils, municipal corporations, or urban and rural associations. There would be a council for insurance, of people experienced in these matters, such as now formed the Insurance Advisory Committee, and a general consultative council, somewhat on the lines of what was known as the Consumers' Council at the Food Ministry. The Minister would be in the closest touch with the consultative councils. Each would have its subcommittees, composed like the medical subcommittee of members not necessarily belonging to the personnel of the parent council. A consultative council would have a right to offer the Ministry advice, and the Minister would be under obligation to receive and consider it. With regard to procedure as to the issue of Orders in Council, he said that one Order would fix the date for the coming into operation of the Act. The consultative council would be established by Order in Council, which would be

laid on the table of both Houses of Parliament for thirty parliamentary days. If an Order in Council was to provide either for an increase or a decrease in the duties or powers of the Minister it would require a resolution of approval by both Houses of Parliament. The Order, however, could be amended by either House.

The Marquis of Crewe, in congratulating the Government upon having produced a most useful and practical measure, expressed the opinion that it had taken the right course in placing medical research under the Privy Council, and not under the Ministry of Health. Medical research must in many instances be closely connected with research in chemistry and physics, and to remove medical research in particular from the general care of the Privy Council, which was the home of the Department of Scientific and Industrial Research, would be a blunder. He thought there was a danger that the consultative council might to some extent detract from the responsibility of the Minister, and asked whether the members of the Council would be at liberty to express in public views divergent from those of the Ministry, or whether, when once a conclusion had been reached, they would be bound to hold their tongues on the subject for ever afterwards. If their scope was the more limited kind, he could quite understand that they would serve a very useful purpose.

The debate was continued by Lord Downham, who, as Mr. Hayes Fisher, was for several years Parliamentary Secretary, and afterwards President, of the Local Government Board. The bill, he said, would bring great disappointment unless it were followed by a new public health policy, by a new and improved Poor Law, and by a very large increase in hospitals, sanatoriums, and clinics, in the number of well-educated and re-educated medical practitioners, and in the number of nurses. Since the establishment of the Local Government Board in 1871 the population of England and Wales had grown from 22 million to 36 million, and the greatly increased population had congregated in urban areas, yet the death-rate, which was 21.4 per 1,000 in 1871, was 13.3 in 1916. In 1871-80 the expectation of life in the case of males was 41.4 years; in 1910-12 it was 51.5 years, so that in the period of forty years ten years had been added to the expectation of life. The figures for females were respectively 44.6 and 55.4. He believed that these figures constituted a higher expectation of life than was to be found in any other country. He regretted that many of the advocates of the Ministry of Health had painted the picture of the health of this country far too black. He regretted very much that the Prime Minister should have said he doubted that there was a first-class country in the world where less had been done to organize the forces that made for the health of the nation. On the contrary, it might be stated truly that in no other country in the world had so much been done as in England. Lord Downham went on to make a few criticisms on the bill. It gave the Minister no new powers. It would not necessarily transfer, for example, such a matter as medical education; the Minister would continue to do what the President of the Local Government Board had done in the past—that is, would keep in touch with any person responsible for medical education. Nothing was more important than to have a far better system of educating doctors and re-educating them. The Minister of Health would not have power to make grants for the improvement of the system of medical education. The bill did not propose that the Ministry of Health should take over the power of the Privy Council to nominate five members of the General Council, which regulated all matters of medical education.

Viscount Haldane said that the training of doctors and the future enlargement of their course was a very great subject, and one which required to be dealt with, but it belonged to an entirely different service than that of health. It belonged to the service which was performed by the universities and the great medical schools. He hoped that by means of consultative councils and by close co-operation between departments the Ministry of Health would keep in relation with all bodies which did medical training. He hoped to see a time when the Army, Navy, and the Air Medical Service would be looked upon rather as groups which had taken place within a common atmosphere than as independent organisms.

Viscount Knutsford approved the proposal that the Medical Research Department should not be under the Minister of Health, but he wanted an assurance that in the transfer it would not be stopped for want of funds. At the present the miserly grant for it was only £50,000 a year, worth to-day between £30,000 and £40,000. The country saved £50,000 in treating what was called D.A.H.

in one year in one command of the army. The country was paying at one time £1,000 a week to poor girls poisoned by T.N.T. The Medical Research Department saved that by finding out the cause and stopping it. Therefore he hoped that when the department was turned over to the Privy Council it would be treated adequately. The work of the Local Government Board in the past was not lost, but only, as the tombstone said, "gone before." It was a good example to be improved. There might be disappointment with this bill, but it might be hoped that the Minister of Health would soon bring forward something better. In regard to the transfer of the duties of the National Insurance Commissioners, Lord Knutsford reminded the House that 20,000 doctors would be placed under the Minister of Health. There would be great disappointment indeed if the Minister continued the very low standard that was obtained from panel doctors; the term "panel doctor" was ridiculed by the country. It was not the fault of the doctors; it was because the power given to them was so very limited. All that a man got, if he went to a panel doctor, was just what a general practitioner could give him and nothing more. When any one needed an operation, or the help of a specialist, or had a serious illness, was it right that he should depend upon charity? The voluntary hospitals had done their best under very difficult conditions, but naturally they had failed to meet the wants of the nation. The Minister of Health would be expected to improve the medical attention that the country was getting and paying for. There was need for a very careful survey of the country area by area, setting out what facilities the people had and the prevalence of illness in each district. In the country the difficulty of getting surgery and medical help for a man who was seriously ill was enormous, and that must be remedied. It was necessary, of course, to improve the preventive side of medicine as well as the curative sides. All that the panel doctor was now concerned with was treating the number of people in his district; the more he treated the more he got paid. No complaint should be made on that score, but not sufficient attention was being given to the normal person and to the early stages of disease. There was no real intelligence department. The preventable infant mortality was something like 1,000 a week. Such matters must not be allowed to drift. He hoped the bill would be passed unanimously so that the Minister might feel that Parliament was behind him in his endeavours to improve the health of the people.

Lord Willoughby de Broke remarked that although many honours lists had been issued, there was no representative of medical science in that House.

Lord Bledisloe, speaking for those who would have to apply in the counties the provisions of various Health Acts, welcomed the measure. He was somewhat alarmed, however, at the subsection which seemed to contemplate the retention of all the officials of all the various departments to be unified by this bill. He feared that the consultative councils might form an undesirable buffer between the Ministry of Health in London and the various local authorities and divest the Minister of Health of full ministerial responsibility. He welcomed the proposal to leave research out of the sphere of the new department, because there were many departments carrying on in watertight compartments work which ought to be aggregated. For instance, a good deal of work being done by the Board of Agriculture in the sphere of veterinary science, comparative physiology, and therapeutics, was in other countries far more closely associated with research work for the benefit of human beings than in this country.

After remarks by Lord Tenterden and the Bishop of Llandaff, Lord Buckmaster thought that one of the most important duties that the Ministry of Health could undertake would be the control of advertisements relating to patent medicines and foods. The feeding of children by patent foods was in the case of many a positive danger to health.

Lord Boston, referring to the clause as to the constitution of a Board of Health in Wales, thought there would be profound dissatisfaction if it were left to the Minister to appoint such officers as he thought fit.

Viscount Sandhurst, in a brief reply, said that in so far as local authorities overlapped, an endeavour would be made to disentangle them. The bill did not touch hospitals. He knew the lamentable waiting lists that existed at the various hospitals, and if it was found that there must be more hospital accommodation, more must be provided. But that belonged to the second phase. If the central body was established the health of the country could be reorganized. The bill was then read a second time, and referred to a committee of the whole House.

THE MEDICAL ADVISORY COUNCIL.

Our lobby correspondent writes that it is expected that the Ministry of Health Bill will be passed through Parliament within a fortnight. As soon as it is on the statute book, Dr. Addison will proceed to the appointment of the various consultative councils. The selection, subject to the acceptance by Parliament of the draft order recently issued, will rest entirely with the Minister. It is understood that representations have been made to Dr. Addison in regard to the nominations for the consultative medical council. It has been suggested to him that he might be disposed to accept nominations by various medical bodies, and that in this way the council could be made of a representative character. According to rumour in the lobby of the House of Commons, Dr. Addison is not inclined to take this view, although he will welcome the submission of names by the different bodies, and is likely to make up the council by the aid of the recommendations thus given. In short, it appears that his inclination is to make the appointment mainly from such lists, but not to take the nominations as directly representing different bodies. He will rather go through the lists for the choice of the names that seem most appropriate to him. The council, it will be remembered, is to consist of not more than twenty members.

The Pensions System and Medical Boards.

EVIDENCE OF THE SECRETARY TO THE PENSIONS
MINISTRY.

The first sitting of the Select Committee on Soldiers' and Sailors' Pensions was held at the House of Commons on April 30th, under the chairmanship of Sir Montague Barlow, and the second on the following day. Both sittings were wholly occupied by hearing the evidence of Sir J. Albert Flynn, Acting Secretary to the Ministry of Pensions.

Sir J. Albert Flynn said that the Ministry inherited the flat-rate pension machinery of the Admiralty and the War Office and the supplementary (war) machinery of the Statutory Committee for advances to meet cases of individual hardship and provide treatment and training. The Ministry had introduced alternative pensions, had made treatment and training a reality, had developed the local machinery to inquire into individual cases, had arranged for advances by local committees in anticipation of the possible award of pension, and had established local officers directly under the Ministry. The problem was how to decentralize and yet co-ordinate the outlying staff. The ideal of the future was to begin with the man and end with the pension. One of the difficulties was that the Ministry in London was housed in forty different buildings. The correspondence amounted to 40,000 letters a week.

The clerical staff referred to the doctors all cases in which the claim was for eyesight, cancer, etc., or where more than one disability was set forth; about 40 per cent. of the cases were referred to the doctors at Chelsea, and in about half the cases Chelsea altered the recommendations. The board at Chelsea did not see the men whose cases were referred to them. Investigation went to show that either the Revising Board was unnecessary and made mistakes, or the ordinary medical boards were not competent. Sir A. Griffith-Boscawen, when he was Parliamentary Secretary to the Pensions Ministry and Chairman of the Advisory Board, held that the ordinary boards as a whole were much too hard on the men. It was hoped that with decentralization difficulties would be overcome. The Ministry had taken over the beds from the National Service Ministry. The Director-General was very keen to improve the boards. If they could be relied upon there would be no need to revise the decisions. Tribunals were to be set up in all parts of the country, so that it should be easy for men to appeal locally. There was evidence that the ordinary boards were often very perfunctory. The reviser was usually a specialist, an earnest man who put himself into his task. The witness repeated that only cases presenting some unusual feature were referred to Chelsea. A man could appeal to the Ministry upon the question of the amount awarded, but it was only as to attributability that he could appeal to an outside tribunal. He agreed that it would be better to refer all cases either to a doctor or to a higher tribunal. It was undesirable to leave the clerical staff to decide whether a medical board was right or wrong.

Sir Albert Flynn, continuing his evidence on May 1st, expressed the opinion that the naval medical boards were more reliable than the army, though perhaps a little harder. He had come across cases which made him think that the medical boards were sometimes very profoundly wrong. He did not think that men were averse from appealing. The remedy for the situation was, in his opinion, properly selected boards of medical men who did nothing else. At first it was agreed to make the decisions of the pensions tribunals final; then it was resolved to make them advisory; the Ministry now held it would be better, after all, to leave the decisions to the tribunal, providing that such decisions were within the terms of reference. That question was now before the Treasury. With regard to delays in dealing with appeals, he said that there were about 10,000 to be disposed of, and they were coming in at the rate of about 400 a week. There had been 20,000 appeals,

and it had taken as much as eight or ten months to get a decision; but there were now eight tribunals, and they might be brought up to thirteen, or even more. It would take eighteen or twenty weeks to wipe out arrears. The Ministry had dealt with 14,000 officers' pensions, but, owing to altered arrangements of the War Office, there were 50,000 to 60,000 cases; if a settlement could not be made to officers within a month, advances were made on account.

Sir Albert Flynn continued his evidence on May 5th. He was of opinion that the awarding of pensions to women and children had been quite satisfactory. So far as he knew there was very little delay in the grant of pensions to widows, and there was really no excuse for delay, as twenty-six weeks' notice was given to them. A few months ago there was a sudden rush for awards for dependants, but special arrangements had been made to meet it, and the congestion it was hoped would be relieved in two or three months. The delay as to widows' pensions was in cases where difficulties arose as to whether the man's death was due to or hastened by service. He would be glad of particulars where there had been delays in awarding pensions to widows. Alternative pensions were based on pre-war earnings, and what men were now capable of earning. The difficulty was to decide a man's present capability of earning. The actual pre-war earnings were reckoned up to 50s., and half between 50s. and 100s. The original idea of the pension was that men and their dependants should not be worse off from the fact that the men had been in the service. The Ministry was well aware that there had been complaints, and the matter was being thoroughly reconsidered. Sir John Butcher, a member of the committee, suggested that in view of the increase in wages it was unfair to assess a man's possible earnings on pre-war figures. Sir Albert said that the matter was under personal consideration of the Minister. The assessment had to be left to the "skilful and kindly consideration" of the department to do the best they could.

Anaesthetics for Operations on Animals.—The second reading of the Animals Anaesthetics Bill, which would make it an offence to perform certain operations on horses and dogs without the use of an anaesthetic, was given in the House of Commons on May 2nd. It is a private member's measure, introduced by Lieut.-Colonel W. Guinness, who said it was designed to correct a remarkable omission in our present law regarding cruelty to animals. In cases in which live animals were cut or vivisected for the purpose of research the application of anaesthetics was compulsory, but in a far larger number of cases in which research was not the object of operations—for they were carried out merely for the convenience or profit of the owner—such care was not enjoined nor was any humane device prescribed to prevent pain. The bill had been modified to meet the views of agriculturists and veterinary surgeons. It would not apply to the castration of pigs and bulls, nor to horses under two years old. Sir Watson Cheyne, Sir Wm. Whitla, Colonel Raw, and Dr. MacDonald, amongst other members who took part in the discussion, expressed the sympathy of the medical profession with the bill. Sir Watson Cheyne said he had been horrified to learn what had been done without the use of anaesthetics. Sir Wm. Whitla thought that the measure ought to be made to apply to the docking of terriers' tails. Colonel Raw was of opinion that for docking local anaesthetics would be more efficacious than general anaesthetics. Dr. MacDonald pointed out that under the Dogs' Bill, if pain continued after an operation, an animal had to be destroyed, but in the present measure there was no provision of the kind.

Medical Service under the Insurance Acts.—Sir Kingsley Wood asked the Secretary to the Local Government Board, as representing the Insurance Commissioners, on May 6th, whether any revision in the terms of insurance practitioners were contemplated; and, particularly, whether any extension of the present medical service was under consideration and could be indicated. Major Astor replied that the original arrangements for the conditions of service of insurance practitioners arrived at in 1912 were to have been subject to revision in 1915, but, owing to war conditions, that revision was postponed. In March of last year, as a result of a deputation to the Chancellor of the Exchequer, certain temporary augmentation of the insurance practitioners' remuneration was agreed to by the Government on war grounds; and, at the doctors' request, preparatory to revision both of the services to be rendered and of the remuneration to be paid, preliminary discussions were entered into on both these aspects of the matter, and also as to the possibility and desirability of some extension or enlargement of the existing services, with a view to arriving at some new arrangements to take effect (it would be hoped) in 1920. The issues involved were complicated and difficult, and needed further consideration and discussion with the Advisory Committee and others concerned. No statement could be made at present.

THE school of phthisiology established by the physicians of the Dispensario Antituberculoso Maria Cristina was recently formally inaugurated in Madrid in the presence of the Queen and a distinguished assembly. On March 28th thirty-eight practitioners of Madrid and the provinces had entered their names. Two courses of three months are to be given in the year, in the spring and in the autumn. It is intended that these shall be as practical as possible. The school has no State grant.

Scotland.

DIRECT REPRESENTATIVE, GENERAL MEDICAL COUNCIL.

AN election for a direct representative of the medical profession in Scotland on the General Medical Council will take place next November. We understand that the sitting representative, Dr. Norman Walker, who has held the position since January, 1907, will stand again, and that Dr. Michael Dewar will also be a candidate. Dr. Norman Walker has been the convener of the Scottish Medical Service Emergency Committee and has in other capacities done a great deal of public work for the profession; his record in this respect is well known. Dr. Dewar comes forward as a general practitioner; he has done much work for the profession in Scotland in connexion with the Insurance Act, as secretary of the Edinburgh Branch, and as a member of the Central Council of the Association.

RESEARCH SCHOLARSHIP IN MENTAL AFFECTIONS.

At the annual meeting of the Scottish Western Asylums Research Institute in Glasgow Dr. Landel R. Oswald stated that he had received from an anonymous donor, in commemoration of the coming peace, a sum of money which would be sufficient to give an income of £250 a year for the endowment of a scholarship for research work in mental affections. The Research Institute was invited to appoint two trustees to co-operate with others in administering the fund. The scholarship will be founded on the lines of the Beit scholarships, and will be open to research students throughout Scotland. The hope was expressed that the institute might soon be in full working order again, and the Executive Committee was instructed to take steps towards securing a new director, and empowered to offer a salary not exceeding £600 a year. Further information regarding the post can be obtained from the Secretary, Dr. James H. MacDonald, Hawkhead Asylum, Crookston, Cardonald, Glasgow.

MEDICAL PRELIMINARY STANDARD.

The Scottish Universities Entrance Board has notified that it proposes to issue for the consideration of all universities a general regulation providing that the standard of preliminary education for admission to a Faculty of Medicine shall be assimilated to that for admission to the Faculties of Arts and Science. Sir Donald MacAlister, speaking on the subject at the Glasgow University Court on April 24th, said that the regulation, which expressed the opinion of the senate and the court, would not come into operation immediately.

TREATMENT OF VENEREAL DISEASES IN EDINBURGH AND THE LOTHIANS.

On March 1st a beginning was made with the putting into operation of the scheme for the treatment of venereal diseases prepared by Dr. Maxwell Williamson (the medical officer of the city of Edinburgh) in association with the Health Committee of the Town Council. The scheme is intended to embrace Leith and the Lothians. Arrangements have not yet been completed whereby the full benefit expected to be derived from the systematization and extension of the treatment and prevention of the venereal diseases in this part of the country will be gained; but, on the return from military service of Colonel L. Harrison, D.S.O. (who has been appointed to take general charge of the work), the scheme in all its details will be seen in action.

In the meantime arrangements have been made with three of the Edinburgh hospitals—the Royal Infirmary, the Royal Maternity, and the Women's Hospital (Bruntsfield)—to supply beds for indoor treatment. At the infirmary and maternity hospitals there are also clinics for outdoor cases. In the former institution male patients will be seen on two mornings and one evening a week, and females on two other mornings and an evening. The work in the infirmary—which, pending the arrival of Colonel Harrison, is under the care of Mr. W. S. Stuart, F.R.C.S. Edin.—includes the intravenous injection of neo-salvarsan and the other modern methods of diagnosis and treatment. There is a ward for male patients and another for females. The medical practitioners of the district have been supplied with printed instructions enabling

them to send their patients with facility and privacy to the places where treatment is given. All the necessary pathological preparations and investigations are carried out within the infirmary itself. In order to maintain secrecy the records of patients are kept under card numbers, and communications regarding them are sent to practitioners under such identification numbers.

At the Royal Maternity Hospital expectant mothers suffering from venereal disease are dealt with. The directors have recently purchased two flats in an adjoining building connected by a bridge with the hospital, for the accommodation of the venereal cases, both those requiring bed treatment and those attending the ante-natal clinic. Since the new premises cannot yet be used, the clinic is being held once a week in the rooms set apart for the ordinary ante-natal clinics held on other days, whilst accommodation for the prematernity venereal patients who require bed treatment is being provided in another house in the immediate neighbourhood of the hospital which is ultimately to be used as a students' residence. The venereal diseases department of the hospital has been placed under the care of Dr. J. W. Ballantyne, who is also in charge of the general ante-natal work. In the meantime the necessary pathological investigations will be carried out at the Royal College of Physicians' Laboratory.

Married women suffering from the venereal diseases will be received at the Women's Hospital, Bruntsfield. No outdoor clinics are being held at this hospital; but cases are seen at three subsidiary centres connected with maternity and child welfare. The work at this hospital and at these centres is under the charge of the staff belonging to it. Medical practitioners who desire to treat their patients at home may, under certain restrictions, obtain consultations with the clinical medical officer. They may also have pathological preparations (blood smears, etc.) examined at the Royal College of Physicians' Laboratory, where they may be sent, or to the office of the Public Health Department. Drugs for the treatment of the various forms of venereal disease will be supplied, free of cost, to medical practitioners, but it should be noted that these include only, in accordance with the instructions of the Local Government Board, salvarsan or its substitutes. The Local Government Board has also laid down certain rules restricting the distribution of such drugs to practitioners having the necessary training or experience in their administration; these rules are detailed in the scheme sent out by the Health Department. Already a very considerable response on the part of the affected public has been made to the various facilities which are afforded them under the scheme.

Similarly in Glasgow steps are being taken in the same direction. The Local Government Board for Scotland has approved a scheme, and a circular explaining its operation has been issued by the medical officer of health, Dr. A. K. Chalmers. The treatment centres comprise the dispensaries of the Royal, Western, and Victoria Infirmaries, the Hospital for Women, Baird Street Reception House, and Bellahouston Dispensary. Certain days and hours have been fixed for the giving of free medical advice and treatment.

Ireland.

THE MINISTRY OF HEALTH BILL.

AS reported in this column on April 19th, a very large and influential meeting of the medical men of the North of Ireland, held in the Medical Institute, Belfast, to discuss the Ministry of Health Bill as applied to Ireland, decided to appoint a deputation to wait on the Chief Secretary for Ireland. Advantage was taken of Mr. Macpherson's visit to Belfast, and the deputation was courteously received by him in the Belfast City Hall on May 1st. Mr. R. J. Johnstone, F.R.C.S. Eng., who had presided at the meeting of medical men, introduced the deputation, which was large and representative, and included the President and Secretary of the Ulster Medical Society and the President and Secretary of the Ulster Branch of the British Medical Association. Sir John Byers and Dr. Gardner Robb explained clearly and fully the views of the profession in the North of Ireland. Dr. Henry of Comber, County Down,

on behalf of the county, confirmed these views. The proceedings were private, but it may be stated that the Chief Secretary explained the whole situation, and spoke sympathetically regarding the views put forward by the deputation. At the conclusion, Mr. John Campbell, F.R.C.S., thanked Mr. Macpherson for granting the interview and for his courteous and sympathetic reception.

India.

THE COMMITTEE ON MEDICAL SERVICES IN INDIA.

THE committee appointed to report on the reorganization of the medical services in India has made such good progress with its inquiry, under the chairmanship of Sir Verney Lovett, K.C.S.I., I.C.S., that its report is probably already in the hands of Government. The other members of the Committee are Major-General G. Cree, C.B., C.M.G., A.M.S., D.D.M.S. Lucknow Division; Major-General P. Hehir, C.B., C.M.G., C.I.E., I.M.S., D.D.M.S. Northern Command; Major-General H. Hendley, K.H.S., I.M.S., D.D.M.S. Quetta Division; Major-General G. G. Giffard, C.S.I., I.M.S., Surgeon-General to the Government of Madras; Mr. S. R. Hignett, C.I.E., Home Department; Lieut.-Colonel A. Sharp, C.M.G., Deputy Secretary Army Department; Lieut.-Colonel G. B. A. Rind, Adjutant-General's Branch Army Head Quarters; Colonel H. E. Banatvala, C.S.I., Inspector-General of Civil Hospitals and Prisons in Assam; Lieut.-Colonel Bhola Nauth, C.I.E., I.M.S.; and Sir T. B. Nariman, a private practitioner of Bombay. The secretary is Major A. A. McNeight, I.M.S., D.A.D.M.S. Army Head Quarters.

MEDICAL SCHOOLS AT ALLAHABAD.

The Chancellor of the University of Allahabad, speaking at the annual convocation, took a hopeful view of the future of higher education in the province. The policy of the Government of India, he said, was to restrict the area over which the affiliating universities had control, by securing a university for each of the leading provinces and creating new local teaching and residential universities in harmony with the best opinions as to the right road to educational efficiency. The new Benares Hindu University was not a principal institution, but it served a large number of people. Funds were being collected for a Muslim university at Aligarh, and new universities at Lucknow and, later on, at Agra, were in contemplation. Colonel Mactaggart, I.M.S., in submitting the medical budget to the U.P. Legislative Council, spoke of the proposal to start a new medical school at Allahabad. An initial expenditure of about fifteen lakhs would be required and recurring expenditure of about one lakh. He had no doubt that Government would finance the scheme, and as a pledge of its intention a sum of 15,000 rupees had been provided in the budget for next year for the acquisition of a site for a new medical school.

THE HEALTH OF MADRAS.

The Madras Presidency Health Association was inaugurated recently at a largely attended meeting held at the Senate House, with the Governor in the chair. The health of Madras is far from what it ought to be, and the new association has been formed to carry on a campaign against disease and dirt. In this movement it is hoped to secure the co-operation of all the educated classes throughout the Presidency, and two influential committees have been elected—a general executive committee with the Governor as president, and a town branch committee with Sir William Beardsell as chairman, Major Elwes, I.M.S., as secretary, and Sir Bernard Hunter as treasurer. The association should be a power for good, and will aim at enlisting the sympathies of educated Indians, without whose support the movement cannot achieve its purpose.

HOUSING IN BOMBAY.

The Government of the Bombay Presidency has decided to grant assistance to co-operative societies for the encouragement of house building on approved sanitary lines. A sum of five lakhs of rupees (£33,000) will be allotted in relation to approved societies; interest at the rate of 6 per cent. will be charged, except in cases where there are strong grounds for accepting a lower rate.

RED CROSS WORK IN INDIA.

The St. John Ambulance Association and Red Cross Society in India have commenced the civil work which is to be a feature of Red Cross work in the future. At a recent meeting of the Punjab Branch the President, who is the Lieutenant-Governor of the Province, referred to the excellent work which had been done by members of the St. John Ambulance Brigade during the influenza epidemic and small-pox outbreak. Two lakhs of rupees (£13,000) were allotted for an extension of the scheme.

Correspondence.

DISAPPOINTMENTS AFTER GASTRO-ENTEROSTOMY.

SIR,—Dr. Robert Hutchison has called attention to a matter of much importance to the clinical physician—namely, the not infrequent discomforts that persist after or follow, the operation of gastro-enterostomy. Within the last few years my own attention has been much called to the subject by the cases I have encountered, and I have come to the conclusion that, apart from pain originating in other organs, pain arising in the stomach and duodenum is due to one of the following three causes:

1. The persistence of an unhealed ulcer. Some surgeons boast of the fact that after a gastro-enterostomy operation a patient can be up and about and on normal diet within a few days. This is bad practice. In order to allow the ulcer, for which the operation is done, to heal properly, a lengthy period of rest in bed, followed by careful dieting for months, should be enjoined. At any rate, if such a course is adopted subsequently, it is generally efficacious, but obviously it can be carried out with less trouble and with less expenditure of the patient's time immediately after operation.

2. The formation of a gastro-jejunal ulcer. This is a more common occurrence than is generally believed. The pain is usually strictly localized and an area of tenderness can be detected. In treatment a rest and dietetic cure is indicated, but is, as Dr. Hutchison points out, rarely successful. In almost all cases a further operation sooner or later becomes necessary, and as a rule results are good. In addition to avoiding unabsorbable sutures, it is possible that performing the operation without clamps may diminish the incidence of these ulcers.

3. In some cases the pain is, I am convinced, produced by the forcible contractions of the stomach directed towards the pylorus. If a stomach is examined at a long interval after operation, the pyloric pouch is almost invariably found dilated and its muscular wall hypertrophied, pointing to the presence of the peristaltic waves to which I allude; x-ray examination will indeed at times enable one to see these waves, and patients will tell one that the pain is severe and of a spasmodic nature when one is actually observing the gastric contractions. The cases in which I have seen them were ones in which for some reason or other the new opening had not been made as close to the pylorus as is customary, and their existence as a cause of pain is an extra reason for the rule that the junction should always be made as close to the pylorus as is possible.—I am, etc.,

T. GILLMAN MOORHEAD, M.D., F.R.C.P.I.

Dublin, May 3rd.

HYPNOTISM, SUGGESTION, AND DISSOCIATION.

SIR,—Dr. Mercier is mistaken in thinking that I made, or even suggested, any imputation on his medical knowledge and practice to the readers of *The Times*. I am not quite so young as that. He had mentioned the name of the illustrious Charcot in connexion with a statement as to the difficulty of bringing patients out of the hypnotic state and as to the therapeutic value of hypnosis. A rapid calculation showed me that the Salpêtrière school had its inception about forty years ago. Hence my reference to this figure. Dr. Mercier is too eminent a scientist, and too well known to the readers of *The Times*, to fear misunderstanding in this matter.

Nor did I state, or even suggest, that he was ignorant of the hypothesis, theory, or fact of mental dissociation. I referred to mental dissociation in order to be able to

explain the rationale of a therapeutic method involving light hypnosis which is new, and may be unknown even to Dr. Mercier. Hypnotism is a mysterious cloaked figure in the imagination even of many readers of *The Times*, and it may be a public benefit to twitch her mantle from her face.

I feel flattered to find that Dr. Mercier credits me with the view that dissociation is both a theory and a fact. For that is just what it is! I prefer to call it a fact because, like all facts, it is very stubborn unless properly treated. But all facts are shot through and through with interpretation, as every logician knows, so if people call them theories it doesn't much matter.

Dr. Mercier will never use that suit of mourning for the obsequies of mental dissociation. If he did attend a funeral it was a mock one, or else the place of the principal performer was taken by an understudy. Dissociation is as long-lived as association, which Hume compared to the law of gravity, and it is remarkable how many burials it survived during the late war. I found it present in a marked degree in hundreds of my patients on the Somme, in the form of loss of memory for what happened to them after the shell had burst. But light hypnosis always restored the memories, so they were not really lost, but only dissociated.—I am, etc.,

WILLIAM BROWN.

Psychological Laboratory,
King's College, May 5th.

A WAR COMRADES' CLUB.

SIR,—Captain K. M. Walker and "Late Surgical Specialist B.E.F." have raised a very important subject, and I am convinced that the majority of those who have served abroad are in sympathy with the project.

How is such an organization to be formed? During the South African war Dr. F. E. Fremantle and myself organized a South African civil surgeons' dinner, and these dinners were held at first annually, and later triennially up to the outbreak of the great war. The small numbers concerned made it comparatively easy for us to communicate with all the civil surgeons, and involved a comparatively small expenditure of time and money.

To organize an Expeditionary Forces Medical Union (or club) which might embrace over 10,000 members would involve a considerable expenditure of time and money. No one man, I imagine, unless a paid official, could undertake the task. Might it not be possible to inaugurate such a society with the help of the Royal Society of Medicine? Might not the new union be affiliated to the Royal Society and its members become *ipso facto* members of the new Naval and Military Section?

The club, whether called the War Comrades' Medical Club or the Expeditionary Forces Medical Club, should in my opinion be open only to those who have served overseas. There should be an annual subscription and an annual meeting followed by a dinner in London. Once established, branches could be formed in various parts of the United Kingdom and overseas. If Captain Kenneth Walker would appoint himself provisional secretary and call a meeting through the medical press (if the Royal Society of Medicine would lend a room), the constitution of the club could be discussed and a provisional committee elected.

I agree with "Surgical Specialist" that Sir Anthony Bowly is the man to preside if he will.—I am, etc.,

London, W., April 30th.

C. GORDON WATSON.

WELSH MEDICAL COMMITTEE.

SIR,—I am glad my letter was the means of eliciting the information that the Council, at their meeting on April 16th, decided to have the Welsh Medical Committee (created before the war) launched at an early date, for no mention of that momentous fact (to us Welshmen) was made in the Council's report, in spite of its exhaustive character, and that special sections were devoted to Scotland, Ireland, and the overseas branches respectively. Let it be hoped that this is the last time for Wales to be thus left in the cold, or merely treated as an integral part of England in Association matters.

Wales having now secured a separate Health Board under the Ministry of Health and a separate Welsh Committee of the British Medical Association, it is

manifest to all that the existing groupings of constituencies for the purpose of electing members on the Council cannot stand, and this matter should be threshed out by the Representative Body before it accepts the invitation of the Council to transfer the power to prescribe groupings to the latter.

In the light of the present universal conviction as to the respect and consideration due to nationalities, however small, how monstrous it seems that while England holds fifteen out of twenty-four seats on the Council (under By-law 46a), and that while Scotland and Ireland have each four seats on the same, Wales is limited to one seat, while she has to find room even on that seat for Shropshire.

Counting of heads must, of course, always remain a consideration in these matters, but national self consciousness should also be adequately respected. Wales should have at least four seats to England's share (at present 15) on the Council, not necessarily by reducing England's total, but perhaps by creating additional seats.

I intend asking my Division to express an opinion on this matter, and perhaps other Welsh Divisions would like to follow suit.—I am, etc.,

Griccieth, May 5th.

E. LLOYD OWEN.

WOUND SHOCK.

SIR,—I should be grateful for permission to correct a misinterpretation of my remarks on wound shock at the Special Clinical Meeting. In your account, published April 26th, p. 525, I am represented to have said that "in civil life, owing to want of muscular relaxation, gas-oxygen anaesthesia failed in abdominal surgery." This is the reverse of my intention. What I did say was that gas-oxygen anaesthesia was of the greatest value in abdominal operations of civil practice, but that the best results could only be obtained if the abdominal wall were infiltrated before incision with a solution of novocain and potassium sulphate, in order to ensure muscular relaxation.—I am, etc.,

London, W., May 5th.

GEOFFREY MARSHALL.

Obituary.

F. J. SMITH, M.D., F.R.C.P.,

Consulting Physician to the London Hospital.

WE greatly regret to record the death, on April 30th, of Dr. F. J. Smith, who was so long on the staff of the London Hospital. He retired from the hospital and from practice last July, when he went to reside at Colyton, Devon, looking forward to many years of tranquillity; unhappily the expectation was not fulfilled, and he died after several months from an illness which afforded no hope of recovery.

Frederick John Smith was the youngest son of the late Mr. John Smith, who practised as a surgeon for upwards of forty years at Castle Donington, Leicestershire. He was born there on August 17th, 1857, and received his early education at Christ's Hospital, where he greatly distinguished himself both in work and games. He won an open mathematical scholarship at Balliol, and went up to Oxford in 1876, taking also an exhibition from his school. He graduated B.A. with honours in the final school of natural science in 1880, and, having won the Letheby scholarship and the first entrance science scholarship, entered the London Hospital Medical School on October 1st, 1881. He had a distinguished career as a student, taking many prizes; he was house-physician to the hospital in 1885, and in that year took the diplomas of M.R.C.S. and L.R.C.P. and graduated M.B. Oxford; in the same year he was elected Radcliffe Travelling Fellow. Two years later he became M.R.C.P. London and F.R.C.S. England; he proceeded M.D. in 1891 and was elected F.R.C.P. in 1895. He was medical registrar of the London Hospital from 1887 to 1891, and in September of that year was elected assistant physician. He became physician in July, 1902. He was at one time lecturer on medicine in the school, but afterwards became lecturer on forensic medicine and medical jurisprudence, subjects to which he had given special attention. He was editor of the fifth, sixth, and seventh editions of Taylor's *Medical Jurisprudence*, and in 1900 published his own *Lectures on*

Forensic Medicine. He contributed also to Knocker's *Workmen's Compensation Act* and to French's *Differential Diagnosis*. He was a referee under the *Workmen's Compensation Act* and examiner in forensic medicine at the Universities of Oxford, Leeds, and Birmingham. Among other appointments he held that of assistant physician to the Hospital for Diseases of the Chest, City Road, and at the time of his death was consulting physician to the City of London Dispensary and to the National Orthopaedic Hospital. He was much interested in the city medical society, the Hunterian Society, was at one time its secretary, delivered the annual oration to it in 1900, and was its president in 1904-6.

Dr. F. J. Smith was for many years an active member of the British Medical Association, and particularly of the Metropolitan Counties Branch; he was one of its secretaries from 1904 till 1907, and its president in 1914-15, when he delivered an address on modern vascular problems, in which he criticized some recent developments and asked some crucial questions about blood pressure. Dr. Smith was secretary of the Section of Medicine at the annual meeting of the Association in 1901 and vice-president of the same section in 1912; he was for some years a member of the Central Council, and was chairman of the Science Committee from 1912 to 1917. He was a member of the Medico-Legal Society, frequently took part in its discussions, and had been its president.

Dr. Smith was a sound, practical physician, careful in diagnosis, and possessed a knowledge of men and the world which disposed him to treat the patient and not to be misled by some terminological label. The constitution of his mind was critical, and in therapeutics he was ever ready to challenge accepted views, as was well illustrated by his persistent teaching with regard to diet in typhoid fever. As early as 1901 he spoke and wrote in favour of free feeding up to satisfaction of the appetite but starvation when the appetite was in abeyance, free supplies of plain water, and free evacuation by saline aperients, especially sodium sulphate. He had an offhand manner and a very colloquial way of expressing himself, which sometimes misled those who did not know him well; but to his friends "F. J.," as he was always called, was known as a man of wide knowledge and shrewd judgement, always disposed to take a charitable view, always ready to give of his best in any difficulty.

The funeral took place at Colyton, Devon, on May 5th. A memorial service was held on the same day at the London Hospital church, when Dr. Robert Hutchison delivered an address in appreciation of Dr. Smith's fine qualities. There was a large congregation, including Viscount Knutsford, chairman of the London Hospital, and a number of members of the medical and surgical staffs, together with sisters, nurses, and students. The Metropolitan Counties Branch was represented by Dr. M. G. Biggs, and Dr. A. D. Macpherson attended on behalf of the Council of the British Medical Association.

DR. JOHN O'KEEFFE died at his residence, Griffiths Town, on April 25th. He came of a well known Waterford family, was a student of the old Irish School of Medicine, Dublin; he obtained the diplomas of L.R.C.S.I., 1881, and L.R.C.P. Edin. 1886. After acting as assistant to the late Dr. Davies of Ebbw Vale, he went to Griffiths Town as an assistant to Dr. R. Edmunds, and on the latter's death took over a considerable portion of the practice. Dr. O'Keeffe was held in high esteem by both colleagues and patients. A man of strong character who knew his own mind, and whose opinion was not in the slightest disguised. He took a great interest in the affairs of the Monmouthshire Division, served on many committees, and was its chairman-elect at the time of his death. Dr. O'Keeffe was a frequent attendant at the annual meetings of the Association; he visited Canada, and was present at the fateful 1914 meeting at Aberdeen. He was a man of strong physique, and his death at the comparatively early age of 62 must be attributed to the very heavy work of an arduous practice combined with onerous duties at a military auxiliary hospital of 300 beds, and also a smaller hospital of forty beds, both of which he attended without any help during the war. He was senior surgeon and trustee of the Pontypool Hospital, where he rendered willing and honourable service. He held many public appointments; he was M.O.H. of Panteg, medical officer

Panteg Union Workhouse, and surgeon to Baldwin's works. His colleagues will greatly miss his hearty laugh and warm handshake. He leaves a wife and two daughters to mourn his loss.

DR. JOHN MARSHALL of Wickford, Essex, died on April 19th, aged 70, after a short illness. He was educated at Guy's Hospital, and took the diplomas of M.R.C.S. and L.S.A. in 1871. He was a district medical officer and public vaccinator of the Chelmsford Union, and a member of the Mid-Essex Division of the British Medical Association. He leaves a widow, two sons, and a daughter.

In the short obituary notice of Colonel ROBERT CALDWELL, A.M.S.(ret.), published on April 26th, reference to his service during the war was inadvertently omitted. He was officer in charge of the Alexandra Hospital, Cosham, and practically throughout the period of the war was responsible for the difficult duties connected with the V.A.D. hospitals affiliated to the Alexandra. His courtesy to those connected with the V.A.D. establishments won the esteem of all with whom he came in contact.

MAJOR MAURICE NASMYTH PERRIN, Royal Air Force, was killed in a flying accident on April 28th, on his 32nd birthday. He was educated at St. Bartholomew's Hospital and at Cambridge, where he graduated B.O. in 1913. He took a temporary commission as lieutenant in the R.A.M.C. on August 16th, 1914, in the first fortnight of the war, was promoted to captain after a year's service, and recently transferred to the Medical Branch of the Royal Air Force with the rank of major.

CAPTAIN PETER STURROCK, R.A.M.C., died at Waterloo, Liverpool, on April 19th. He took the Scottish triple qualification in 1887, and was in practice at Lenzie, near Glasgow, till he took a temporary commission as lieutenant in the R.A.M.C. on September 1st, 1916, being promoted to captain on completion of a year's service.

Private Alexander Forbes Stuart, R.A.M.C., who died last month at Noranside Sanatorium, Forfarshire, aged 21, from disease contracted on active service at Salonica, was the youngest son of the Rev. F. W. Stuart, of Gortly, and was a medical student prior to his enlistment. He was a younger brother of Captain F. W. Stuart, R.A.M.C. (temporary), at present serving in Germany.

A West window light has been dedicated in All Saints Church, Helmsley, Yorks, to the memory of Lieut.-col. Frederick Henry Dowker, 1st Sportsman Battalion, only son of the late F. W. Dowker, surgeon, who was killed in Delville Wood, July 27th, 1916. The window was put in by his mother and sisters.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on May 2nd the following medical degrees were conferred:

M.D.—E. A. Dyson.
M.B., B.Ch.—*R. H. O. B. Robinson, A. H. J. Smart,* J. V. Fidian.
M.B.—H. G. Oliver.

* Admitted by proxy.

QUEEN'S UNIVERSITY, BELFAST.

DR. THOMAS SINCLAIR, C.B., Professor of Surgery at Queen's University, Belfast, has been appointed the representative of the University on the General Medical Council for a period of three years.

The Services.

In the appointments to the Military Division of the Order of the British Empire, announced in our issue of April 12th, p. 469, the names of the following officers should have been given as Officers of the Order (O.B.E.): Surgeon Commander C. K. Bushe, R.N., Honorary Surgeon Lieutenant J. D. Pollock, R.N.V.R., and Surgeon Lieutenant E. D. Scott, R.N.

At a meeting of the Paris Société de Pédiatrie, Méry Genevriev and Henyer stated that young children in the territories occupied by the enemies suffered much from the lack of milk, farinaceous, fatty, and albuminous substances. For older children forced labour in all weathers, combined with inadequate clothing, parasites, and epidemic diseases, made the conditions of life most unfavourable. Growth and intellectual development were retarded by two to three years.

Medical News.

AT a meeting of the East Norfolk Division and of the East Norfolk Local Medical War Committee a resolution congratulating Sir T. Jenner Verrall on the occasion of his receiving the honour of knighthood was adopted.

DR. GEORGE HENDERSON (Kirn, Argyllshire) has been presented by his friends and patients with an address and a wallet containing £417 in commemoration of his return to practice after service in the war since 1914.

LIEUT.-COLONEL NATHAN RAW, M.P., who recently resigned the position of medical superintendent of the Mill Road Infirmary, Liverpool, which he had held for twenty-one years, has been presented by the staff of that institution with a five-light silver candelabrum as a mark of respect and esteem, together with a book containing the subscribers' names.

COLONEL GEORGE R. MURRAY, M.D., having relinquished the appointment of consulting physician to the Italian Expeditionary Force, has returned to Manchester.

COLONEL SIR RONALD ROSS, K.C.B., K.C.M.G., F.R.S., has been elected a Fellow of the Royal Society of Sweden (University of Upsala) in recognition of his researches in malaria.

HEREFORDSHIRE has appointed a rat-catcher for the county at a salary of £5 a week (£260 a year).

THE Paris Academy of Medicine has decided to erect within its precincts a stele in memory of French practitioners who died as victims to professional duty in the course of the war.

The senate of the University of St. Andrews has resolved to confer the honorary degree of LL.D. upon Dr. W. H. R. Rivers, F.R.S., F.R.C.P., Fellow of St. John's College, Cambridge.

THE late Dr. John E. M. Finch, medical superintendent of the Leicester Borough Asylum from 1869 to 1911, has bequeathed £5,000 for the endowment of a university college for Leicester, in remembrance of his long connexion with the asylum.

AT the annual general meeting of the Lebanon Hospital for Mental Diseases, near Beyrout, to be held at Sion College, Victoria Embankment, next Friday, at 3 p.m., the director, Dr. H. Watson Smith, will give an account of the war-time experiences of the hospital.

THE Norwegian Cancer Fund Committee has collected about £30,000 towards the establishment of a national hospital for the treatment of inoperable malignant disease by radiography and other therapeutic measures and for research on the subject. A special propaganda has been organized to raise additional funds.

DR. M. R. DRENNAN, who graduated in medicine at Edinburgh in 1910, and is a Fellow of the Royal College of Surgeons of Edinburgh, has been appointed professor of anatomy in the University of Capetown. He is an Ayrshire man, and served in the South African Medical Corps during the campaigns in South-West and East Africa.

ACCORDING to a recent article in the *Pioneer Mail* there are at present seventy-six asylums for lepers in India. The Mission to Lepers maintains forty-one of these institutions and gives grants in aid to eleven others. The Mission derives most of its money from Britain, but grants are also made by provincial governments. The total number of known lepers in India is said to be over 109,000.

DR. R. F. SHIELDS, of the University of Shantung, has recently finished a translation of Lewis and Strohr's *Histology* into Chinese. An abbreviated edition of Halliburton's *Physiology and Histology* had previously been available to Chinese students, but Dr. Shield's book appears to be the first in their language devoted entirely to microscopic anatomy.

THE Board of Trade has appointed a departmental committee to inquire into the business carried on by industrial assurance companies and collecting societies. The inquiry will not be concerned with life assurance for sums beyond £50, nor with insurance under the National Insurance Act. The chairman is Lord Parmoor, and one of the members is Sir Alfred W. Watson, chief actuary to the National Insurance Joint Committee.

A DISCUSSION on the problem of disablement, with especial reference to the combined treatment and training of injured ex-soldiers, will take place at a meeting of the Hunterian Society to be held at 1, Wimpole Street, W., on Tuesday, May 13th, at 8.30 p.m. Dr. Fortescue Fox will introduce the subject, and Dr. E. H. Humphris will read a short paper on the melted paraffin wax bath. All members of the profession interested are invited.

DR. WILLIAM BROWN, Reader in Psychology in the University of London, began a course of ten public lectures on pathological psychology, illustrated by cases of war neuroses seen in the field and at the base, at King's College on May 6th. Subsequent lectures of the course will be given on Tuesdays at 5.30 p.m.

LIEUT.-COLONEL SIR DAVID PRAIN, F.R.S., I.M.S., has been appointed chairman, and Lieut.-General Sir Alfred Keogh, G.C.B., and Sir Malcolm Morris, K.C.V.O., members, of a committee set up by the President of the Board of Agriculture to inquire into the steps that should be taken to render the work of the Royal Botanic Society of London as useful as possible from the scientific and educational point of view.

THE Committee of Management and the Medical Committee of the Hospital for Sick Children, Great Ormond Street, recently made presentations to Dr. George R. Pirie, of Calgary, Alberta, Canada, who throughout the period of the war has acted as resident medical superintendent, registrar, and casualty medical officer to the hospital. The one gift was a silver casket and the other a dressing case, both suitably inscribed. Dr. Pirie, in acknowledging the gifts, spoke of the great pleasure the work had given him.

THE President and Council of the Medical Society of London were "at home" on Monday evening, May 5th, to members of the Fellowship of Medicine, at the society's house, 11, Chandos Street. Medical members of the Overseas Forces now in London were also invited. After a reception of the guests by the president, Major A. P. Voelcker, R.A.M.C.(T.), Sir StClair Thomson delivered an address on "John Coakley Lettsom and the foundation of the Medical Society of London, 1773." Illustrations of the society's history were exhibited by the help of the epidiascope. At its conclusion an informal conversation brought a successful evening to a close. About 150 guests availed themselves of the invitation.

HER HIGHNESS PRINCESS MARIE LOUISE visited the Summer Congress of the Section of Laryngology at the Royal Society of Medicine on May 3rd. She was received by Brigadier-General Birkett, C.B., C.A.M.C. (Montreal), Honorary President of the Congress; Dr. James Donelan, President of the Section of Laryngology; Sir Humphry Rolleston, K.C.B., President, Dr. W. Pasteur, Honorary Treasurer, and Mr. J. Y. W. MacAlister, Secretary of the Royal Society of Medicine; and by Dr. Irwin Moore, one of the Honorary Secretaries of the Congress. Her Highness was shown the models of plastic surgery for war injuries from the Queen's Hospital, Sidcup, exhibited by Major H. D. Gillies, R.A.M.C., and also a collection of manuscripts and instruments belonging to Sir Morell Mackenzie, presented to the Royal Society of Medicine by Mr. Mayer.

THE North of England Tuberculosis Association recently arranged a post-graduate course lasting four days, at the Lord Mayor Treloar Cripples' Hospital and College, Alton, Hants. Dr. Gauvain, medical superintendent, gave two lectures daily, each of an hour's duration, and demonstrated many procedures in the conservative treatment of surgical tuberculosis, including aspiration of tuberculous abscesses, a method which has yielded excellent results in spinal caries and hip disease; demonstrations were given also in the wards. Altogether those attending were occupied from 11 a.m. until 7.30 p.m. each day. It should be added that the various bodies defrayed the expenses of their officers attending the course. We are glad to see this evidence of their appreciation of the great importance of surgical tuberculosis as a cause of crippling deformities.

QUEEN ALEXANDRA'S HOSPITAL FOR OFFICERS, established by a committee of which Sir Alfred Mond was chairman, was erected on the southern slope of Highgate Hill, and accepted by the Army Council in March, 1915. The number of beds was originally 26, but this was raised to 33; with annexes at Portland Place and Melchet Court, a total of 57 beds was provided. The result of treatment amid the quiet surroundings and pure air of Highgate was that the number of days of hospital treatment was diminished by about 30 per cent. The good condition of patients after the administration of an anaesthetic was particularly noticeable, the rise of temperature was slighter, and there was greater freedom from bronchial irritation. This was especially the case after nitrous oxide gas and oxygen, which for three years was extensively employed by Captain H. E. G. Boyle, one of the honorary anaesthetists. Mr. Herbert J. Paterson, honorary surgeon in charge, informs us that the total number of officers admitted down to March 20th, 1919, was 839, and on that date 37 remained in the hospital. The number of operations was 581 and of x-ray examinations 855. The deaths numbered 8.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

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3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

LETTERS, NOTES, ETC.

GOVERNMENT MOTOR VEHICLE SALES.

IN connexion with the auction sales of motor vehicles no longer required by the Services, motorists are advised by the Automobile Association to avail themselves of expert advice concerning the mechanical condition and value of such vehicles before bidding for them. Communications should be addressed to the Secretary, A.A. and M.U., Fanum House, Whitcomb Street, W.C.2. Members residing in the provinces should communicate with their nearest A.A. branch office.

LITERATURE OF HAEMATOLOGY.

DR. GORDON WARD (The Vine, Sevenoaks) writes: I am endeavouring to make a collection of reprints, etc., on all aspects of haematology. These will be indexed and filed, and may, I hope, be of permanent value. May I ask those interested in this subject to be so good as to let me have any reprints they can spare on the clinical or experimental aspects of disorders of the blood?

THE IDEAL OF THE PROFESSION.

"MAJOR R.A.M.C.(T)," writes: When you were good enough a week or two ago to give me the hospitality of your columns on the above subject (BRITISH MEDICAL JOURNAL, April 5th, p. 429), I omitted a vital point quite accidentally. "Colonel R.A.M.C.(T)," inquired why doctors ask "How shall we be defended from the Government?" I think the said Government's action *re* the bonus to panel doctors is a sufficient answer. The sovereign is worth, according to statistics, 9s. 6d., chauffeur's wages, income tax, rates and taxes, and working expenses are more than doubled, and the Government's idea of justice to doctors is 10 to 12 per cent. on one year's income. No other class of workers would have been put off with such an offer.

SPIRIT DUTY (VOLUNTARY HOSPITALS) GRANT.

THE Local Government Boards for England and Wales and for Scotland are prepared to receive applications from voluntary hospitals for grants in respect of payments of duty involved by the use during the year 1918 in these hospitals of duty-paid spirit or drugs containing duty-paid spirits for medical and surgical purposes. Forms of application will be sent only to those hospitals to which a grant was paid last year. Any other hospital which desires to make application should communicate immediately with the Secretary to the Local Government Board for England and Wales or the Secretary to the Local Government Board for Scotland, as the case may be.

PARALYTIC RABIES IN MAN.

At a meeting of the Académie de Médecine on April 8th Professor Pierre Marie and Dr. Chatelin reported a case of the primarily paralytic form of rabies. The patient, a boy aged 11 years, was bitten by a dog on the upper lip at the end of October. The wound healed rapidly, and no prophylactic inoculation was given, but about five weeks later the child complained of violent headache in the afternoon, and in the evening had an attack of a few minutes' duration, in which he stretched out his arms with the hands clenched, but without frothing at the mouth or losing consciousness. Similar attacks recurred frequently the following night. During the day they were much less frequent, but the child kept repeating that he was dying, and refused to take any food. A few days later the parents noticed that he had complete loss of power in both legs. On admission to the Salpêtrière, about seven weeks after he had been bitten, the child showed flaccid paralysis of the lower limbs, loss of the knee and ankle jerks, some weakness of the upper limbs, and some difficulty in swallowing. There were no sensory symptoms. The rectal temperature was 103.8° and the pulse 118. Lumbar puncture gave issue to a slightly turbid fluid under high tension, containing an excess of albumin and polymorphonuclear leucocytes but no micro-organisms. The following day not only was the paralysis of the upper

limbs more marked and the radial and triceps reflexes abolished, but the muscles of the abdomen and thorax were also affected. The sphincters remained intact until a few hours before death, which took place the next day from respiratory paralysis. Histological examination of the nervous system showed a diffuse infiltrative polioencephalo-myelitis affecting the spinal cord, medulla, pons, cerebellum, and certain regions of the cerebral cortex. Negri bodies were found in the cord and cornu ammonis.

EARLY STAGES OF RABIES IN THE DOG.

J. D. W. sends an account of an experience of his at Easter, 1894, while temporary assistant at a branch surgery in a small colliery town in Lancashire. One morning he went out with the caretaker, who was accompanied by a fox terrier; after nosing about in the ordinary way, the dog suddenly lifted its nose in the air and set up a run of short, sharp, high-pitched yelps, very like the cephalic cry of an infant, but more persistent. The dog ran about taking no notice of its master, and when it got on to a road made straight for home. It went to J. D. W.'s bedroom, where it jumped aimlessly up and down in a recess between the fireplace and the window. Both J. D. W. and the caretaker concluded that the dog was mad, and the latter made an ineffectual attempt to kill it with a hammer. The dog found its way to the kitchen, where its master held it while J. D. W. gave it something out of a bottle labelled "dilute hydrocyanic acid." The only result was that the dog wagged his tail and seemed considerably refreshed. This necessitated another visit to the surgery, when "liq strych." was found and proved effective. "A point to be noted," he writes, "is that the animal never attempted to bite us. Our victim was buried at the back of the house, but the police, getting wind of it, dug it up and, with the aid of Somerset House, decided that it was a case of rabies. I heard afterwards that the animal had been bitten by another which had gone mad a fortnight before."

THE REVENGE OF THE OLD G.P.S.

[It has been suggested that consultants and specialists should undertake service under the Insurance Acts. It has also been proposed to appoint medical referees, possibly with some sort of supervisory duties.]

In the not far distant future, when the Ministry of Health Has added to the Country a vast potential wealth:
When the Clinic and Health Centre are dotted o'er the land,
And the Midwife and the Specialist are walking hand in hand
When the young romantic couples ere deciding on a splice
Explore their family histories under medical advice:
When the new-begotten fetus is not suffered to exist
Till the antenatal expert shall have got him on his list:
When the shy expectant mother runs to study pelvimetrics
And discuss the situation with the expert in obstetrics:
When at last th' Eugenic Infant is permitted to be born
(With the help of a consultant if the perineum's torn):
When the Birth is duly notified—the Health Visitor has called,
And all the latest fashions are properly installed:
When the Baby-Welfare doctor has weighed him with precision,
And strongly recommended prophylactic circumcision:
When every British school-child from its head unto its toes
Has every ailment treated by the special School M.O.s:
When all the sexual functions have been taught him by the
Parson,
And he's been to V.D. lectures and appreciates salvarsan:
When he's got a Panel Doctor, for he's now become insured,
And been taught when'er his finker aches to run and get it cured:
When a Specialist's appointed for eyes and ears and noses,
And we mustn't treat Venereal, still less Tuberculosis:
When there's nothing left for us to do but just to "pass him on,"
And there's nothing we're supposed to know—our occupation's
gone.
Then: shall we be downhearted? No, we loudly answer, NO.
There's a brand new speciality and into it we'll go,
We're practitioners of standing—wide experienced G.P.s,
And we'll get ourselves appointed as Medical Referees.
These Consultants must be disciplined—we'll steel our hearts to
put,
And we'll haul them up before the Medical Service Subcommittee:
We'll be "tactful supervisors," and "oh, but 'twill be sweet!"
We'll specialize on Specialists, and comb out Harley Street!

J. W. F.

THE appointment of certifying factory surgeon for Uxbridge (Middlesex) is vacant.

THE appointment of medical referees under the Workmen's Compensation Act, 1906, for the Burnley and Colne and Nelson County Courts, in Circuit No. 11, is vacant. Applications to the Private Secretary, Home Office, by May 28th.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

THE MEDICAL TRADITION.

BEING THE ANNUAL ORATION DELIVERED BEFORE THE
MEDICAL SOCIETY OF LONDON ON MAY 12TH.

BY

SIR JOHN TWEEDY, LL.D., F.R.C.S.,

PAST-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND,
AND EMERITUS PROFESSOR OF OPHTHALMIC MEDICINE AND
SURGERY IN UNIVERSITY COLLEGE, LONDON.

MANY important and controversial matters are now being pressed upon the thoughts and attention of the members of the profession. The air is thick with projects of reconstruction and change. Some of these propose a recasting of the whole system of medical education; some seem to think that the one thing needed is a regimentation of medical practice; others look for the millennium through the advent of a Ministry of Health; and others hope for salvation in trade unionism, with its bargainings, its strikes, and its picketings. Without questioning the competency and good faith of the promoters of these various projects, or venturing to deny that some of the suggested changes would remove some defects and introduce some improvements, I am doubtful whether any of the proposed changes would effect all the good expected of them, and feel sure that some of them would do no good at all.

Experience has too often proved that even when some good has been effected by reforms, unexpected evils have not unfrequently followed in the train. Tares have been sown with the wheat. Reformers are always sanguine, and too apt to think that change, and especially their change, necessarily implies betterment, and that movement is always progress. Of the past we know a little; of the present, perhaps, somewhat more; but of the future we can and do know little, if anything. At any rate, I believe that any change, whether effected from within or imposed from without, that restrains the liberty or lessens the responsibility of a medical man, or hampers the free play of his intellectual activities, will be detrimental to the authority and usefulness of medicine, and prejudicial to the interests of public health and national welfare.

How important is the part that medicine plays in national welfare has been strikingly shown in the recent war. Whatever may be the verdict of history on the diplomatic, political, naval, military, and economic phases of the war, there will be no hesitation about the brilliant triumphs of curative and preventive medicine. These triumphs have been partly the result of the labours of our predecessors, partly the outcome of the researches and investigations of contemporary workers, not only in the science and art of medicine but also in the allied sciences of chemistry and physics and biology; but the victory was eventually ensured by the thousands of trained workers who knew how to make full use of all the resources which these sciences had placed at their disposal. Medical men of different nationalities, sometimes of different races, reared under different educational and social systems, were able to co-operate in the common endeavour, because they had all alike inherited the same traditions of rational medicine.

Great as has been the part played by medicine in war, it is probably destined to play a greater part in peace. Even now medicine has within itself the promise, if not the actual potency, of preventing all preventable diseases and curing all curable ones. Whether medicine ever becomes, in the popular jargon of the day, nationalized, or whether it continues to preserve its autonomy, its influence and authority will be determined by the intellectual ability, the personal character, and the moral endowments of individual practitioners. It is to the personal qualities of the medical man rather than to schemes of professional reorganization that I venture to invite your attention this evening. The subject may seem trite and commonplace, but it is not negligible on that account. Besides, it is well at times to go back to first principles.

What, then, is medicine when reduced to its simplest terms, as an intellectual discipline and a practical art—what are its methods, aims, objects, ethics, and traditions?

Notwithstanding the lapse of more than two thousand

years, notwithstanding the continuous growth of medical knowledge from century to century, we may, I believe, find all that is essential for our purpose in the writings of the ancient Greek physicians, and especially in those of Hippocrates. I use the term Hippocrates in a generic sense, and not as exclusively applied to one particular individual. It is rather an eponymous title, given to the assumed author of the Hippocratic Collection. Of the individual Hippocrates we know little, but of the personality which the famous Aristotle called the "Great Hippocrates," a celebrated medico-philosophical cycle has been formed which is known to us as Hippocrates.

Although it is impossible to determine with precision and certainty the philosophical and medical ideas of Hippocrates in an historic sense, it is easy to determine them in a traditional sense. Critics have for many centuries discussed the works which make up the Corpus Hippocraticum, and have differed as to which of these writings are the work of Hippocrates himself and which belong to different members of his family or school. But there is little difference of opinion as to which of the writings bear and which do not bear the Hippocratic mark.

We have other names and other forms of disease than the ancients; other means of healing, other ideas, other ways of explaining them, but medicine is always the same. Nature does not change, and to become a great physician the same qualities are necessary to-day as formerly. Medicine is concerned about the conservation of health, the cure of disease, and the relief of pain and suffering. It comprises not only the remedial and curative medicine, but also preventive medicine. In Hippocrates's day preventive medicine had not the range and complexity and precision that it has in ours, but the underlying principles are the same and so also with therapeutical medicine.

In Hippocrates's time there were unfriendly and even unscrupulous critics of medicine, and the race is not yet extinct. In the beginning of the treatise of "The Art," Hippocrates remarks that there are some persons who make it an art to vilify the arts, not that they really expect to destroy them, but rather because they desire to show off their own cleverness. In "The Ancient Medicine" he observes that medicine has for a long time been in possession of a principle and a method. Guided by these, many useful discoveries have been made and further discoveries will inevitably be made if capable men, instructed by former discoveries, take them as a starting-point for their own researches; or, in the words of more recent philosophy, seek from the known to discover the unknown.

The principle and the method of medicine are Observation and Reasoning. Medicine, it is true, is primarily based on observation, on facts, on reality; but observation is not enough. It must be supplemented by reasoning on these observed facts. In "The Precepts" it is pointed out that observation establishes the facts which fall under the senses, leaving in thought a clear representation of them. Reasoning is a kind of synthetic memory of that which is known through the senses, and, with the help of memory, it brings the facts together, compares them, and sums them up into a generalization. If reasoning is not preceded by observation, it is likely to lose its way; while observation which is not followed by reasoning is not enough. The intelligence should supplement the senses, and reason should supplement observation.

Pre-Hippocratic medicine was mostly observational and experiential, but with Hippocrates it became ratiocinative. In commenting on the Cnidian sentences, he remarks that the writers have well described the symptoms of each particular malady and its termination; but any one could do the same without being a physician by asking the patient what he suffered. It is those things which the patient cannot tell that the physician ought to know in order to find out the true nature of the disease and its suitable remedy. The manifestations of diseases are of two kinds: those which are apparent and those which are not. External diseases may easily be made out by sight and touch and the other senses; hidden diseases are more difficult to discover. But, although they are hidden, they do not completely baffle the physician. The possibility of mastering them depends partly on the condition of the patient for examination and partly on the talent of the investigator. More pains and more time are needed

make out hidden diseases than those which can be seen and handled. The physician, unable to discover the disease by direct vision or by what is told to him by the patient, searches for it by reasoning. The mind's eye perceives what is invisible to the bodily eye.

The critics with whom Hippocrates deals denied the reality of the Art of Medicine, alleging that whilst some of those who were treated by physicians got well, others did not, and that those who did recover owed their deliverance to fortune rather than to Art. The number of patients who died in the hands of physicians, they said, proved the impotency and vanity of medicine as a practical art; and that medicine stands self-condemned when physicians undertake the treatment of cases which would get well of themselves, but refuse to take in hand desperate cases. If medicine were a valid art it would, they maintained, cure all alike, or at least attempt to do so. Hippocrates's reply to these criticisms is well reasoned and complete. There are bad physicians, he says, but there are also good ones. If medicine were not a valid art, there would be no difference between them; they would all be equally ignorant, and chance alone would determine the fate of all sick persons. Medicine rightly refuses to undertake the treatment of incurable cases, because although medicine is an art, it is not infallible and not omnipotent; it cannot go beyond nature. It cannot repair the irreparable; it cannot perform miracles. Medicine is a contest between the power of the disease and the efficacy of the therapeutical resources at the disposal of the physician. If the disease is stronger than the means at the disposal of the physician he is necessarily disarmed and helpless. It is the nature of things, and not medicine, which is to blame. But the advice not to undertake hopeless cases was perhaps, after all, prudential rather than absolute. Over and over again Hippocrates remarks that it is the duty of the physician to do good to the sick person, and at least not to do harm; and in one place at least the practitioner is advised that if he does undertake the treatment of a desperate case, he should always take care to commit no fault. Four hundred years later Celsus wrote:

Now the principal object to be attended to by a physician is to know what cases are incurable, what are difficult, and what more easy, for it is the duty of a prudent man not to undertake a case which he cannot cure, nor to subject himself to the imputation of having destroyed a patient who was destined to die of his disease.

Nearly two centuries later Galen gave similar counsel. Avicenna, the famous Mohammedan physician of the eleventh century, struck a note which is more in harmony with modern sentiment:

We should bear in mind the infinite resources of nature, and we should never seem to abandon a patient, although we cannot really do anything efficaciously. Up to the last moment we should endeavour to soothe, but we must not gamble with a life by powerful remedies or big operations where there is no well grounded hope, otherwise we render ourselves voluntary homicides.

Modern medicine is on a surer and more positive foundation than it was in the days of Hippocrates, but the classification which he gives of the causation of disease and of the nature and significance of symptoms still holds good. The causes of disease, he says, are twofold—those which come from without and those which originate within; and the manifestations of disease are also twofold—namely, the *indisposition* and the *reaction* of the organism in the struggle of the natural forces to overcome, destroy, neutralize, or expel the morbid agent. The natural powers, says Hippocrates, are the healers of disease and the physician is the servant or minister of nature. Nature is all-sufficient in and for everything. Without instruction and without conscious guide, it always does what is fitting. The physician should observe closely the operations of Nature and follow their indications. When Nature is sufficient, the physician should be content to be an observer of what is taking place without attempting to modify the action of the natural powers. When Nature is feeble or insufficient, he should arouse it, fortify it, and sustain it. When it is too active or disorderly, or tumultuous, he should moderate its direction and endeavour to control and regulate its operation. Abandon a treatment, he says, which does not succeed for one which does. If a disease gets worse, adopt another method. But, on the other

hand, do not cut off anything which tends to improve; relax nothing, and still more add nothing. At all times the practitioner should keep in view a double purpose: to be useful to the sick person and avoid doing harm. Hippocrates compares ignorant physicians to unskilled pilots. In calm weather the false manoeuvres of the unskilled pilot are not apparent, but when a storm arises and the winds rage his boat is lost, and then every one recognizes that disaster is due to the pilot's want of skill. And so it is with unskilled physicians, who constitute, he parenthetically remarks, the greater number. So long as they treat diseases of little gravity, where their faults do not produce any serious mishap, their blunders are not obvious to ordinary folk; but when they encounter a serious and grave disease, their faults are soon apparent, their want of skill soon manifest.

There is not and cannot be absolute certitude in medicine. Like the arts of agriculture and of politics, the military art and the art of navigation, the certitude is only approximate and amounts only to a greater or less degree of probability. The most experienced farmer cannot be sure that he will gather the harvest of what he has sown; the wisest politician can never be certain that his plans may not miscarry; the ablest general can never be certain of victory; and the most experienced sailor can never be sure that his ship will reach the harbour in safety. And in like manner, the most skilful physician can never be sure of curing his patient, but he can be sure of employing all his knowledge and all his skill according to established rules of his art.

Hippocrates names six conditions necessary to become a skilled physician: natural talent, instruction by a competent master, a place favourable to study, education begun in youth, love of work, and long application. The first of these conditions is the most important, for where there is not a natural disposition it is useless to attempt to force nature. Theory should be combined with practice. Want of experience begets either timidity or rashness. Timidity discloses impotence and rashness ignorance. The training of the medical student in the fifth century B.C. was varied and, according to the measure of the time, complete. It comprised the study of medical writings, listening to set lectures, or to the personal instruction of the master, and practical experience in the consulting room and at the bedside. Practical experience is of very great importance, but literary study must be cultivated. The skill to form a just judgement upon what has been written is, says Hippocrates, an important part of the medical art. Whosoever has knowledge of medical writings and knows how to use it will not in practice be guilty of any grave omission or fault.

The personal character and habits of the physician are only second in importance to intellectual ability and professional training. The physician should be well mannered, discreet, and of good repute; wise in judgement, temperate, and self-controlled. Honourable in all his dealings, he should unite firmness with gentleness and should avoid luxury and display, frivolity and levity. He should not be greedy of gain, but should accommodate his fees to the circumstances of his patient, and, if necessary, render his services gratuitously. He should think more of his honour than of profit, and rather run the risk of incurring the ingratitude of a patient he has treated than add to the distress of a sick person by bargaining about fees during illness. In the case of a poor stranger particularly, he remarks, it is especially becoming to give gratuitous help, for where there is love of mankind there is love of art. Galen has some similar remarks on professional remuneration:

He who esteems riches more than distinction and who learns his art in order to amass wealth will never attain the end which medicine proposes to itself. It is impossible to covet riches and at the same time to cultivate worthily the noble art of medicine. If one is pursued with ardour, the other is neglected.

Hippocrates also inculcates friendly and confidential relations between members of the profession. There is no disgrace, he says, if a physician in doubt about a case calls in the help of other practitioners with whom he may consult on the case, and who are willing to associate with him in order to afford mutual help. The physicians in consultation should of course never quarrel or abuse each other, for the reasoning of one physician ought never to envy that of another.

Medical ethics were settled once for all by Hippocrates. According to the well known Oath, youths were initiated into the profession by a solemn ceremony in which they swore to help the sick according to the best of their power and judgement, to abstain from every evil, never to administer poison or to give it to a third person, and never to give an abortive pessary; to be pure and chaste in their relations with patients and with the members of the patient's household, and always to observe the strictest silence respecting the secrets learned in the exercise of their calling and even outside it.

There are two kinds of secrets referred to in the Hippocratic writings: one which may be called "trade secrets," the other "secrets of trust," acquired in the professional intercourse with patients. These "trade secrets" were regarded as sacred, never to be revealed except to those who had been initiated into the mysteries of the science. Xenophon, in the *Oeconomicus*, points out the difference between the candour of agriculture and the mystery of some other callings. The other artisans, he says, make some secret of the important parts of the art which each plies, while the farmer is delighted if anyone watches him. Whatever piece of good work you ask the agriculturist about, he will not hide from you how he does any single thing. Trade secrets were insisted on by members of the craft guilds in the Middle Ages and down to the end of the eighteenth century. They constituted much of what was called the "mystery" of the craft. Nowadays they have practically ceased to exist in medicine. There is nothing in the mode of conducting modern practice that any layman may not know. Professional secrets, "secrets of trust," which are more particularly referred to in the Oath, stand in a different category. They are and should be inviolable except under the compulsion of a court of law. Even the courts of law have recognized a distinction between the ethical and legal aspects of these secrets. In the year 1776 Lord Mansfield, in the House of Lords, in the case of the Duchess of Kingston, laid down that

if a surgeon was voluntarily to reveal those secrets, to be sure he would be guilty of a breach of honour and of a grave indiscretion, but to give that information in a court of justice which by the law of the land he is bound to do, would never be imputed to him as any indiscretion whatever.

Of late years there has been a tendency on the part of the Legislature and administrative authorities to encroach upon the principle of professional secrecy. The notification of disease, for instance, is in a sense such an encroachment. No harm is done in the case of many diseases, but much harm may be done, and great personal and domestic misery may be caused, if the notification be extended to diseases of a strictly personal and private character, especially if any stigma or immoral imputation be rightly or wrongly implied.

There is one other matter mentioned in the Oath to which I would refer very briefly—namely, the vow never to give anything to produce abortion. On this question Hippocrates was ethically far in advance of the prevailing opinion of his day. Both Plato and Aristotle sanctioned the practice of abortion in certain circumstances. Aristotle divided the period of married life into two epochs—the child-bearing period and that in which no children were to be brought into the world. He definitely states that after seventeen years of married life, when the husband would be about 54 years of age and the wife 35 years, the married couple should cease to become parents, and he also insists that a limit should be set to the begetting of children even during that period of seventeen years. He hints that infractions of this rule will occur, and that it may be thought that the only possible remedy will be exposure of surplus children. But he regards exposure of living children as "unholy," and suggests in preference abortion at the early stage of pregnancy, before sense and life have begun. Both Plato and Aristotle were influenced mainly by social, political, and economic considerations. The aim was to preserve the household as the nursery of a healthy race, vigorous in mind and body, and to prevent over-population and pauperism. The City-State, it was held, should be wholly independent of others, wholly self-sufficing. It must be able to maintain its character as a state by itself, without aid or stimulus from without. In the diminutive city, men tended constantly to increase faster than food. It was, says Zimmern, in his interesting work on the Greek Common-

wealth, more than a difficulty: it was a terror, looming closer every year. With their primitive economy, there was little margin to draw on. There was a natural limit to the numbers of a self-contained City-State. Patch after patch of bare hillside was drawn into the area of cultivation, terraced and ploughed and picked over in order that it might yield its wretched pittance. But the time came when the pressure of population upon subsistence became too strong to be withstood, and Greek statesmen were forced to seek an outlet for the people elsewhere. It was to avoid this necessity that both Plato and Aristotle sanctioned and even recommended abortion. Hippocrates took a higher view, based on an ethic of universal validity.

And we too should never forget that medical philosophy is essentially and apart from other studies an ethical study, and is intimately concerned about the ways by which it seeks to attain its moral aims; and that he who in the right spirit devotes himself to the practice of medicine seeketh not his own, but engages in the service of humanity.

A COMMUNICATION ON A "FILTER-PASSING" VIRUS IN CERTAIN DISEASES,

WITH ESPECIAL REFERENCE TO POLYNEURITIS, ENCEPHALITIS, TRENCH FEVER, INFLUENZA, AND NEPHRITIS.*

BY

MAJOR-GENERAL SIR JOHN ROSE BRADFORD,

K.C.M.G., C.B., F.R.S., A.M.S.

I do not propose to detain the Section very long, because, of course, the members will be much more interested in the actual detailed observations and effects on which this work is based, and which will be brought forward by Captain Wilson and Captain Bashford. But I think it necessary that some introductory statement should be made with reference to the way in which this work has originated and the various stages of its progress. This work—which, if it be soundly based, is capable of wide development and of many applications—had its origin in the investigation of a rare and unimportant malady, polyneuritis; the investigation was taken up purely from the point of view of the clinical interest of the malady in question. That work was completed last August, and I do not propose to say anything about polyneuritis, because we have already published a full statement of it in the *Quarterly Journal of Medicine*, but I do want to emphasize the fact that the whole of the subsequent development of the work had its origin simply and solely in the study of this rare, obscure, and unimportant disease, and that the investigation primarily did not start with a gross, material, practical object in view. As regards polyneuritis, after we had proved that it was an infection capable of transmission by the same methods that had been successful in rabies, Captain Wilson succeeded in growing an organism of a somewhat similar character to that found in poliomyelitis, and the disease was reproduced with the pure culture of the organism, and the organism was recovered. In the light of this work, and in view of the fact that this organism was of the nature of a "filter-passer," it was natural to think that possibly the same method might be successful in other diseases, either of unknown etiology or known to be due to "filter-passers." Trench fever and rabies were those that were first investigated, and—to pass on rapidly—organisms were grown from either the blood of patients or, in the case of rabies, from the brains of rabid animals, in these two maladies and also in influenza, nephritis, and lethargic encephalitis—this last from material obtained from England, because at that time we had no lethargic encephalitis in the army in France. In these five diseases organisms were grown from the blood as long ago as last October. No publication was made with reference to these facts, for the extremely simple reason that I did not think any man brought up in scientific method and having worked in laboratories would be inclined to publish that he or those associated with him had found organisms

*In the Section of Preventive Medicine and Pathology at the Clinical and Scientific Meeting of the British Medical Association, April 11th, 1919.

which might be looked upon as the cause of a disease, simply and solely as the result of having recovered such organisms by bacteriological methods from the tissues of patients or of animals. That is not the way in which scientific medicine is advanced, and we did not consider that any publication was justifiable until some definite evidence had been obtained that these bodies which had been grown from the blood were capable of causing the disease.

The organisms in these five diseases were grown from the blood, as I have stated, last October. It is obvious that experimental work capable of proving or disproving that these organisms were able to cause the lesions of the disease is a matter of some time. It took from three to four months, and not until January of this year did we feel that we had obtained results of sufficient value to justify the statement that in trench fever, influenza, nephritis, and encephalitis we had not only grown the organisms from the blood or tissues, but that we had reproduced in animals the diseases from which these organisms had been procured, and, further, that the organisms had been recovered from the tissues of the patients or from the animals as the case may be—in other words, that what are ordinarily spoken of as the four Koch's postulates had been fulfilled.

At the present time there are six maladies in which we claim that this has been done. These six maladies are polynuritis, lethargic encephalitis (or encephalitis more broadly), trench fever, influenza, nephritis, and rabies. We propose to say nothing about polynuritis because the work on that has already been published. Nor do I propose to say anything about rabies, except that any gentleman interested in rabies will have an opportunity this afternoon at the Lister Institute of seeing the organism that we look upon as the cause of rabies. The work on rabies will be published elsewhere, and will probably be published in France, inasmuch as the work was done in France, with the assistance of my friend, Dr. Roux of the Pasteur Institute; therefore I thought it would be more suitable to publish it—and he agreed—under his auspices. Those are the reasons for saying nothing more about polynuritis and rabies. I do not propose, furthermore, to say anything very much about trench fever, although trench fever is one of the diseases which we have more or less completed. My reason for so doing is that there are no lesions in trench fever which we can demonstrate, and I think it better to limit the statement to the maladies which are capable of gross and obvious demonstration, with the material which will be seen at the Lister Institute this afternoon. Therefore the main lines on which the two officers who follow me will speak will be on influenza, encephalitis, and nephritis, because these are the most capable of suitable demonstration.

To pass on again rapidly, we wish to say that at the present time, as regards the diseases which have been investigated, they fall into two groups. There are the six maladies I have mentioned in which the four Koch's postulates have been, as we claim, completely fulfilled; and then there is a considerably larger group in which at the present time we have only got the bacteriological evidence of the obtaining by culture of a virus. These maladies are: mumps, measles, rose measles, typhus, scarlet fever, haemorrhagic chicken pox, and vaccinia. In all these seven exanthemata the same methods have been successful in growing organisms—different, of course—in each case, but up to the present time it has not been possible to do any experimental work, and as far as these maladies are concerned, therefore, we are in the same position now (in April) as we were, in regard to the others I have alluded to, last October. I merely mention them, and make no claim whatever with regard to them.

To take the three maladies which we deal with more particularly to-day—namely, influenza, nephritis, and encephalitis—the first of these is the one which has loomed so large recently, and therefore it would be well to say a few words about that. Captain Wilson will give in full detail the facts about the virus, and Captain Bashford will take the details of the lesions. All I propose to say in this general statement is that the pure culture of the virus of influenza obtained from the blood or cerebro-spinal fluid or other fluids produces lesions in the lungs, kidneys, heart, liver, and muscles which we regard as identical with the characteristic lesions of influenza, especially as regards

the lesions in the lung and the heart. In the case of nephritis we have been successful in producing this condition in very varying grades of severity, according to differences in the method employed, the details of which will be put before you a little later. From a culture of the virus a mild nephritis is produced; with the fluids drawn from the inoculated animal a more severe nephritis is produced, and, going on from this to a third animal, we can produce a yet more severe nephritis. In this way we can produce a nephritis which will be fatal in forty-eight hours. Nephritis is one of the diseases which has been most completely worked out, and in which the most striking lesions have been produced. The lesions correspond to the lesions which we see in the kidneys of patients dying from nephritis, and are very different from the lesions—with which, at any rate, I am familiar—obtained by other methods of producing experimental nephritis. They are lesions involving all the elements of the kidney; we get the glomerular, the tubal lesions, the interstitial lesions—all the lesions with which one is familiar in the human subject. Certainly it would seem that this is a method for the experimental production of nephritis which is likely to prove of undoubted value in the future study of the disease. The same thing applies to the results in encephalitis, and a further point of interest with reference to all these diseases is that, by improved methods of staining and technique, it is not only possible to grow organisms from the patients suffering from these diseases, but possible also to see the organism in certain exudates and fluids of the body, and the use of the method as a means of diagnosis in lethargic encephalitis is thus possible.

It may at first sight seem a large claim to make with regard to six diseases at once. It might be thought that one disease had been investigated, and then that another had been taken, and after that another, and that the investigator had waited until he had a number in order that he might on publication produce a greater effect. The fact is, however, that all these diseases have been investigated since last August, and the work has been done on them concurrently. I think the fact of the work being done concurrently is of paramount importance in interpreting the value of the results, because the results obtained with the one have served as a control upon the others. We have heard how it is possible to grow or to think that one grows a virus from the blood or other part of the body in any disease by this method that one cares to investigate. Such a criticism as that, so far as these results are concerned, will not stand in the face of the experimental work which has been done, and I cannot emphasize too strongly the great practical importance of the concurrent examination of these several diseases in that way, each one acting as a control on the others. It is found that the virus of influenza produces lung lesions and kidney lesions, and that the virus of nephritis produces kidney lesions and lung lesions, and it might perhaps be said at first that the two have very much in common, but when it is found that the one has its main incidence in the lung and that the kidney lesion is very slight, while the other has its main incidence in the kidney and the lung lesion is slight, that one produces profound changes in the liver and the other does not, then we have got a very beautiful control showing that the organism under investigation is specific. Therefore the accidental fact that these diseases could be and were investigated together has materially assisted in the obtaining of the results. Another point to be mentioned is that the successes or the claimed successes largely turn on the close association of the bacteriological work with the experimental work—that is to say, one observer has been doing bacteriological work, and another has been using the material supplied by him in his own experimental inquiry.

This work was carried on, as might be imagined, under considerable difficulties, some of them of a very unexpected and surprising character, and it would never have been carried to its present pitch were it not for two things, one the very sympathetic interest which the present Director-General Medical Services, France, Sir Charles Burtchell, took in the matter—we are very greatly indebted to him for his sympathetic appreciation and assistance—and the other the unstinted help in many directions of the British Red Cross Society, to which also we are very deeply indebted.

THE EXPERIMENTAL REPRODUCTION OF INFLUENZA, NEPHRITIS, AND ENCEPHALITIS,

BY INOCULATING SUBCULTURES OF THE ISOLATED VIRUS.

BY

CAPTAIN E. F. BASHFORD, R.A.M.C.(T.)

INFLUENZA.

This investigation is described in detail in papers appearing in the *Quarterly Journal of Medicine* for April. It was an inquiry into the etiological significance of an organism isolated by Captain J. A. Wilson from the blood, pleural effusion, and, in cases complicated by nephritis, from the urine of patients suffering from influenza, and already described in the *BRITISH MEDICAL JOURNAL* and the *Lancet* of February 1st, 1919.

Cultures.

An essential factor in the experimental reproduction of influenza and other diseases has been the interposition of an actual pure culture of the organisms concerned in the transference of the respective diseases from man to animals. Thereafter passage by the inoculation of blood, bile, or urine, as the case may be, has been easy from one animal to another.

In the case of influenza six subcultures were tested, five of the second and one of the third generation, there being no noticeable difference in the effects produced; in particular there was no loss of virulence in subcultures. On the other hand, the days of growth of the individual culture were of great importance, so that four days' growths produced more marked effects than ten days'. Altogether forty-one inoculations were made on monkeys, guinea-pigs, and rabbits between November 12th, 1918, and February 9th, 1919. On two occasions only filtrate of sputum was inoculated, namely, on June 27th, 1918, and November 30th, 1918, the latter being done as a control to the subculture derived from it. The results were trivial as compared with those obtained by the growths.

Methods.

The methods of inoculation were subcutaneous, intravenous, and subdural. The first yielded little or no evidence of a positive result beyond a slight disturbance of the normal temperature curve. The second yielded definite evidence of respiratory trouble during life in monkeys and guinea-pigs, and in the case of one monkey also of the later onset of the clinical symptoms of nephritis. The effects of intravenous injection seemed to stand in direct relation to the size of the dose injected. The most marked and constant results followed subdural inoculation, the incubation period being commonly only twenty-four hours.

Experimental Results.

Of six monkeys two were inoculated with the filtrate of sputum and four with cultures. Of the latter, two died four months later and one was killed when it had developed the clinical signs of acute nephritis. The respiratory symptoms appeared within twenty-four hours and those referable to the kidney on the fifth day. Of the guinea-pigs, one was allowed to die, and eight, being more or less moribund, were killed. So that, out of a total of twenty-one experiments, 50 per cent. of the monkeys and not more than 60 per cent. of the guinea-pigs may have been expected to die. Viewed in conjunction with the mild form of the disease in those surviving, the conclusion is arrived at that the disease was reproduced in an attenuated form.

In passage experiments an enhanced degree of virulence was evident, so that, for example, the mortality in subdural inoculations rose from a probable 4 in 6 in the primary inoculations to a real mortality of 3 in 3.

Reinoculation may aggravate the symptoms or modify them favourably according to the method employed in the first inoculation. Preceding subcutaneous inoculation, while producing little evident effect, modifies the effect of a subdural inoculation, so that the weight of the illness is taken off the lungs, but not off the kidney and liver.

The lesions found in the lungs, liver, kidney, heart, brain, and voluntary muscles are striking reproductions of those found in man when dead of uncomplicated influenza, and are illustrated by a series of coloured and black and white drawings.

The organism has been recovered by Captain Wilson from the blood, bile, and tissues of all the animals so treated, including animals in which the disease had been transferred by passage.

Koch's Law.—On the basis of the evidence Sir John Rose Bradford, Captain Wilson, and myself claim that the filter-passing virus with which we have worked satisfies the requirements necessary before its etiological importance can be regarded as established.

The uniformly severe symptoms following subdural inoculation may support the view that the disease finds entrance via the nasopharynx but does not exclude other modes of entrance. The only possible explanation of the course of the experimental disease after subdural inoculation is that it is primarily a blood infection. The pathogenic action is exerted on the capillaries and small arteries and veins. The lungs, in company with other organs, are attacked from within, so that the whole finely co-ordinated mechanism of respiration ensuring a uniform distribution both of blood and air is disorganized, it may be, within twenty-four hours. Masses of dead and disorganized tissues and blood clot provide foci for secondary infections to develop in, which, in their turn, come to invade the system, producing septicaemias on their own account by a reversal of the process in an individual already weakened by the primary disease.

The detailed study of the pathological process shows that it is primarily an affection of the capillaries and smaller arteries and veins. The vascular endothelium is proliferated, the structure lost, and haemorrhage and thrombosis common; a series of other changes naturally ensues. In the lung they are associated with the pouring out of much fluid of an oedematous nature which may be partly a pressure oedema and partly due to the fluid squeezed out of the numerous thrombi contained in vessels the permeability of whose walls has been altered. In addition there is an active inflammatory exudate. Whether the maximum incidence falls on the lungs because of a selective action on the capillaries there, or is due wholly or in part to the mechanical factor of the constant movement of the damaged organs, remains a matter for further investigation.

NEPHRITIS.

Altogether five subcultures were inoculated from November 9th, 1918, to February 9th, 1919, the source of three being the urine and of two the blood stream. For urine there were two second and one third generation cultures or subcultures. For the blood there was one second and one third generation culture or subculture. With these a total of thirteen primary inoculations were made subcutaneously, intravenously, and subdurally in three *Macacus rhesus*, nine guinea-pigs, and one rabbit. All three monkeys developed mild and apparently transient nephritis clinically, and were killed when this seemed to be passing off. Of the nine guinea-pigs, five died, two were killed, and two were reinoculated. The figures are small, the outstanding result appearing to be the greater virulence of cultures derived from the blood as brought out more particularly by subcutaneous injection in guinea-pigs. Whereas a culture derived from the urine appeared to have an incubation period of two or more months, for blood culture the incubation period was from two to five days. For second generation subculture fourteen days' growth was less virulent both for blood and urine than six or seven days' growth. Third generation subcultures appeared more virulent than second. Thus while the virulence appeared to diminish with prolongation of the days of growth of the individual subculture it was, on the contrary, improved by subculturing. Intravenous injection yielded very constant and marked results; but an estimation of the relative effects of the three methods of inoculation is impracticable on the basis of the present figures. Since clinical results for the urine were obtained in the monkeys comparable with symptoms seen in man, but not for the guinea-pig, owing to the absence of facilities for collecting the urine in the latter, the pathogenic effects in monkeys may be considered separately.

ENCEPHALITIS.

On November 9th, 1918, two monkeys were inoculated subdurally, one with a drop of emulsion of brain in saline, and the other with a fourteen days' growth of a subculture prepared from the brain. Eleven days later the monkey which received the emulsion was weak and climbed with difficulty. Thirteen days later the monkey that received the subculture was similarly affected; it showed lack of agility, crept about, and did not spring or jump. The condition persisted in the first monkey for five days, when it was killed. The second monkey still showed marked muscular weakness at that time, but seven days after the onset of symptoms appeared to be better. On December 2nd, however, it had relapsed into a weak condition, climbed slowly, did not fetch food, showed no inclination to move, moped in a corner, and looked ill. On January 9th, 1919, it was killed. There were no evident naked-eye lesions in the first monkey. In the second the brain looked milky and was much congested. The arachnoid was distended with fluid. There were numerous discoloured areas in the white matter suggestive of old haemorrhage. The spinal cord was firm, and theca distended with fluid up to mid-dorsal region. The dura was adherent anteriorly with haemorrhagic discoloration. The posterior root ganglia in the cervical region appeared unduly large. A third monkey was inoculated with brain emulsion from the first, and developed symptoms and post-mortem lesions as described. From the brain of all three monkeys Captain Wilson recovered the organism.

Microscopically there was a slight patchy leptomeningitis. The veins showed irregular and eccentric accumulations of round cells in the media. The smaller arteries, both in the brain and cord, were thickened and hyaline-looking. The capillaries appeared normal, but were accompanied by a

moderate number of round cells. There was extensive degeneration of the nerve cells throughout the several layers of the cortex, most marked in the large antler cells, of which groups were completely degenerated, and a similar state of affairs in the cerebellum and cord.

The cervical root ganglia showed a striking picture. While most cells appeared normal, a number scattered throughout the ganglion stood out deeply stained, the nucleus being with difficulty recognizable from the cell body. In others there was marked eccentricity or vacuolation of the nucleus and cytoplasm. There was no accumulation of round cells such as seen in poliomyelitis. No lesions were observed in other organs with the exception of the kidney, which showed glomerular and tubular nephritis, together with hyaline thickening of the arteries.

GENERAL CONCLUSION.

The several diseases were reproduced in an attenuated form in the first place. While not all, certainly many of the lesions described can be referred to the consequences of ischaemia, others appear to be toxic in origin.

In the case of polyneuritis a curious homogeneous or hyaline change was noted in the vessels of the cord, particularly the arteries in a monkey which lived for thirty weeks after inoculation. A similar or closely related change has been noted in polioencephalitis. In influenza and nephritis vascular lesions are the predominating features, and by reinoculation after complete recovery acute and chronic vascular lesions can be produced side by side—for example, in the kidney and lungs. The diseases of vessels are most imperfectly understood, and little is known of the stages which may precede or determine the changes observed clinically or after death by the microscope. In the case of experimental nephritis it appears that the vascular changes are concomitant with the onset of the disease and are not a late development.

It may be that new insight is about to be obtained into the pathology of the blood vessels, the production of oedema, and other phenomena associated with alterations in vessel walls, such as the rashes of the exanthemata, but, until further work has been done in some other diseases and the material already accumulated more fully worked out, it seems inadvisable to enter into a detailed discussion of phenomena which are at present not a little confused and whose relations to one another are not at all clear.

THE BACTERIOLOGY OF CERTAIN FILTER-PASSING ORGANISMS.

BY

CAPTAIN J. A. WILSON, R.A.M.C.(T.).

THE filter-passing organisms here discussed have been under investigation during the past ten months. The cultivation of such an organism is no new thing, yet it is possessed of a certain novelty. In 1913 Flexner and Noguchi¹ cultivated a filter-passing organism from the nervous tissues of fatal cases of acute anterior poliomyelitis. Their method was that introduced by Noguchi² in 1911 for the cultivation of the spirochaete of syphilis. The original technique has been modified, but the underlying principle remains the same, and constitutes one of the greatest additions to bacteriological technique within recent years.

It is the "Noguchi technique" which has been employed in the present investigation, but before discussing its details it is necessary to refer to one or two points in the preliminary treatment of the infected material.

Preparation of Materials for Culture.

Blood.—The withdrawal of blood is accomplished in the usual way, 10 to 15 c.cm. being withdrawn from a vein in the arm and added to an equal volume of sterile 2 per cent. sodium citrate in normal saline. For cultural purposes the whole blood, the plasma, or the washed red corpuscles may be used. When it is not convenient to put up the cultures on the day on which the blood is withdrawn there are two possible procedures—namely, the separated plasma and red corpuscles may be mixed with equal parts of sterile 50 per cent. glycerin in citrated saline, or the whole blood on withdrawal may be added to an equal volume of the glycerin solution.

Pleural Fluid and Cerebro-spinal Fluid.—In the case of these two fluids a portion is centrifugalized and the sediment microscopically examined to determine the presence or otherwise of

an added infection. If there is no evidence of other infection the fluids may be used in their natural state, or they may be centrifugalized and the sediment taken for the culture, but it has to be remembered that the latter method increases the risk of contamination. Where other organisms are present in the specimen it may be filtered, or the sediment (obtained by centrifugalization) may be emulsified in three volumes of the 50 per cent. glycerin solution and allowed to stand at room temperature, and in the dark, for a period of three or four days, when the culture may be put up.

Sputum.—The sputum is collected in sterile vessels. The most satisfactory method of excluding the many other organisms present is to filter the specimen, either in its natural state or, if it be too glutinous, after emulsification in normal saline, through Berkefeld N or V filters, these forms having been found most suitable. Where a large number of sputa are under observation the strain on the filters is a heavy one, and it becomes necessary to resort to the glycerin method, one part of sputum being emulsified in three parts of the 50 per cent. glycerin solution. The sputum, however, sometimes contains glycerin-resistant organisms, more especially in cases of bronchopneumonia, and this process entirely fails.

Urine.—The sediment obtained by centrifugalization of a catheter specimen is invariably used. It may be filtered, but emulsification in glycerin is usually an adequate method.

Post-mortem Specimens.—Such specimens being, as a rule, grossly contaminated, require prolonged treatment in the glycerin solution. The method is eminently suitable for nervous tissues from fatal cases of polyneuritis, encephalitis, and rabies, in which diseases the specific organism is resistant over long periods. In nephritis and influenza the glycerin method is not, as a rule, available; it is necessary to emulsify the tissues in normal saline and to filter, as in the case of sputa.

Louse Excreta.—The only other material to be considered is the louse excreta, for which the glycerin method gives excellent results, about one milligram of excreta being emulsified in each cubic centimetre of the glycerin solution. The period required to kill off the other organisms present varies from four to eighteen days.

Technique of Culture.

Into each of a series of sterile test tubes (6 by 8) a fragment, about the size of a pea, of sterile rabbit kidney is placed, and alongside it a piece of the nervous tissue, or a drop or two of the filtrate, whichever is under examination. Serum agar, in the proportion of one part of inactivated serum to ten parts of melted agar, at a temperature between 50° C. and 56° C., is added to each tube in an amount just sufficient to cover the tissue. After solidification of the serum agar has taken place there are added to each tube about 15 c.cm. of serum bouillon, also one part in ten, and at a similar temperature. Complete anaërobiosis is obtained by running on to the surface of the medium sterile liquid vaseline at a temperature of about 60° C. and to a depth of half an inch. The completed medium, therefore, consists of a thin layer of serum agar containing a fragment of sterile kidney tissue and the infective material, with a superimposed column of serum bouillon, the whole being sealed with a layer of vaseline.

In the case of blood, pleural fluid, and cerebro-spinal fluid, the cultures are put up in conical Erlenmeyer flasks of a capacity of 50 c.cm. It is sufficient to add 10 c.cm. of the blood or other fluid, the amount of agar being about 15 c.cm. In the case of blood and pleural fluid ordinary agar and bouillon are used; for cerebro-spinal fluid the serum constituent must be added.

It is essential to put up a series of controls involving all the constituents of the medium.

It may be matter of surprise that such an apparently simple method has not been universally employed in the investigation of diseases of unknown etiology, yet in practice it is one of the most difficult and disheartening things in bacteriology.

One of the chief sources of trouble is the *sterile kidney tissue*, which is not always sterile. Quite apart from the risk of contamination in removal of these organs, it sometimes happens that they are infected with *B. pseudotuberculosis*, or with a bacillus of the Gaertner group, even though they appear perfectly healthy. The most careful examination of the abdominal viscera must be made before using the kidneys. Any hyperaemia of the intestinal canal or enlargement of the mesenteric glands should be sufficient to condemn the organs for cultural purposes.

Another danger is to be found in the fact that in the making of the complete culture the tube has to be opened five times; the risk of contamination is obviously not a light one.

The serum factor in the medium is important; in all cases it should be inactivated and sterilized, by heating for two hours at 56° C. on three successive days. Fresh serum has an inhibitory effect on the growth of filter-passing organisms, hence the necessity of bleeding the animal whose kidneys are to be employed as thoroughly as possible.

In the case of the organisms of *polyneuritis*, *encephalitis*, and *nephritis*, any serum will do, but it is not so in the case of the organisms of influenza, trench fever, and rabies, the best results being obtained with human and horse serum in the first, with human and rabbit in the second, and, in the case of rabies, with rabbit and dog serum.

The bouillon in the medium is made from beef or mutton. It and the agar have a reaction of + 10 on the Eyrre scale.

Characters of the Growth.

It is not necessary to describe the features of the cultures of each organism, inasmuch as the six organisms fall into two groups, the first containing the organisms of *polyneuritis* and *encephalitis*, the latter those of influenza, trench fever, *nephritis*, and rabies.

Taking a culture containing a fragment of tissue from a case of *polyneuritis* first: No obvious change takes place in the medium until the fourth or fifth day, when a faint granular opacity is to be seen in the vicinity of the tissue. The haze deepens, and, extending throughout the serum agar, reaches the surface on the sixth or seventh day, where it appears as minute yellowish semi-translucent colonies. These minute colonies rapidly increase in size, become confluent, and form a yellow-brown continuous layer showing slight elevations on its surface. By this time, that is, about the twelfth day, the serum agar has become definitely opaque and dirty-brown in colour, from the autolysis of the kidney tissue. The lower levels of the serum broth now show slight opacity, but unless the surface growth has been disturbed it is not a marked feature. The subsequent changes occur in the serum bouillon and consist of an increasing turbidity.

The same features are developed in subcultures, but the growth becomes scantier with each succeeding generation. No turbidity of the bouillon is produced in third generation cultures.

The second type of growth may be represented by influenza, and it is conveniently observed in a plasma culture. The growth makes its appearance as early as the third day in the form of a fine granular haze in the vicinity of the rabbit tissue. The haze becomes intensified, spreads throughout the agar, and reaches the surface on the fourth or fifth day. The appearance on the surface is dramatic, and it is confluent almost from the outset. The surface growth has a fine granular appearance, is yellow-white in colour, and is moderately adherent. The growth does not extend into the broth.

In subcultures the growth appears as minute greyish-white colonies in the substance of the serum agar after forty-eight hours' incubation. The colonies unite and convert the medium into a greyish-white opaque mass. By the fifth day the surface growth is established. The organism usually dies out in the fourth generation.

Conditions of Growth.

It will be observed that the conditions of growth are of a specialized character, and they remain so. The ordinary methods of culture familiar to laboratory workers have failed to give any growth. In subculture, however, growth may be obtained in a medium in which the serum element is replaced by glycerin in the proportion of 5 per cent. This modification is specially useful in *polyneuritis*, *encephalitis*, trench fever, and in rabies.

As regards temperature, growth takes place only in the vicinity of 37° C.

The organisms are strict anaerobes both in primary culture and in subcultures.

Microscopic Characters and Distribution in the Body.

Polyneuritis.—The organism presents the appearance of a minute rounded or oval body having a darkly stained rounded spot, surrounded by a narrow faintly stained area. In size it varies between 0.2 μ and 0.5 μ . The organisms are grouped in irregular colonies, and it is sometimes difficult to determine the limits of the individual elements. More usually the individual elements can be made out, when it is found that they are arranged in pairs and in small groups of three to five. By the overlapping of elements bacillary forms may be produced. This organism has been recovered from the blood during the febrile stage, but not from the cerebro-spinal fluid. *Post mortem* it has been recovered from the brain, the spinal cord—in both of which its distribution is very wide—from the sciatic nerve, from the lymphatic glands, but not from the liver or spleen.

Encephalitis.—The organism is about the same size as that of *polyneuritis*, but it is less definitely "globoid" in character. It is more frequently found in pairs, and there is not the same tendency to overlapping. In its growth it is more luxuriant, and makes its appearance at an earlier date, usually on the third day. It is present in the blood during the febrile stage, and in some cases in the cerebro-spinal fluid; in the latter it has been observed microscopically. *Post mortem* it has been obtained from the brain, spinal cord, nerves, and lymphatic glands.

Influenza.—The organism is a minute rounded or oval coccus-like body of very definite outline and of uniform appearance. In size it varies from 0.15 μ to 0.5 μ , the former predominating in young cultures, the latter in old ones. They show a tendency

to occur in pairs, and sometimes in short chains of four elements. Involution takes place very rapidly after the seventh day. This organism is present in the blood at the onset of the disease and in the sputum. In the sputum during the early stages of the disease it is present in large numbers, and there is no difficulty in picking it up microscopically. In pleurisy it is to be seen in the mononuclear leucocytes and in the endothelial cells, as well as in the free state. In arrangement it is essentially diplococcal. In fatal cases its distribution is very wide. It has been seen microscopically, and cultivated from the lungs and related glands, from the heart, liver, spleen, kidney, and in one case from the brain and spinal cord.

Trench Fever.—The virus is a minute oval coccus-like body, occurring in pairs with the opposing surfaces flattened. In size it varies between 0.3 μ and 0.5 μ . In cultures it is arranged in colonies, each pair being surrounded by a halo suggestive of a capsule. The organisms, even in very young cultures, show a considerable variation in the degree with which they take up the stain. The organism has been recovered from the blood as early as two hours after the onset of the illness, and is present throughout the febrile stage. It can be recovered also from the blood during the afebrile stage—that is, in the interval between the relapses—in about 30 per cent. of cases. It can be seen in suitably stained films free in the plasma, in the red corpuscles, and in the mononuclear leucocytes. In louse excreta it is present about twenty-four hours after an infective feed. The earliest period at which an infective feed may take place is about forty hours after onset, but the optimum time is somewhat later, between the third and fourth day of the illness.

Nephritis.—This organism has the appearance of an oval coccus-like body arranged in twos and fours, the long axes being approximated. In size it varies between 0.3 μ and 0.6 μ in diameter. In cultures there is a suggestion of capsulation, but it is not confirmed by staining methods, nor by dark-ground illumination. There is not the same rapid involuntary changes seen in the organism of trench fever. The organism has not, so far, been seen in the blood, though it can be cultivated therefrom during the febrile period, and in some cases during afebrile relapses. In the urine it is present in considerable numbers, especially during the acute exacerbations, arranged in small colonies, lying free, and also in the epithelial cells and mononuclear leucocytes. No fatal cases have been examined.

Rabies.—This is the smallest that has so far been seen. It appears as a minute rounded and undifferentiated body of 0.1 μ to 0.3 μ in diameter. It, too, shows a colonial arrangement, but there is not the suggestion of pairing that is seen in the others. The individual elements do not stain with the same intensity, a fact most probably due to the early involution change which is a feature of the organism. This organism has been obtained only from animals inoculated with infected tissues, and those inoculated with cultures, no other material being available. It has been recovered from the nervous tissues, from the salivary and lymphatic glands, and in some cases from the stomach.

Certain Common Features.

The whole group of filter-passing organisms has certain features in common. It will be convenient to discuss the question of staining first.

Staining Reactions.—The ordinary dilute solutions have but little effect on them, even when applied for long periods. The most suitable and the easiest method of producing satisfactory films is to stain with 1 per cent. methylene blue, or, better, Kühne's methylene blue, after washing the fixed film in ether for two minutes. Giemsa's stain, when applied for some hours, stains the organisms a purplish-blue, but it has the disadvantage of staining the background. In young cultures and in the tissues the organism retains the stain in Gram's method; old cultures show large numbers of Gram-negative elements. They are not acid-fast.

Filtrability.—The salient feature of the organisms is that they pass through bacteriological filters. The filters generally used in this investigation were the Berkefeld N and V and the Masson porcelain filters, and they served their purpose excellently. The preparation of the filters before use is a matter of supreme importance. They are first of all scrubbed with soft soap and water, then immersed in distilled water made slightly alkaline with caustic soda. The water is changed every day for a week, when hot distilled water is run through under pressure. Finally they are boiled in pure distilled water for a period of three hours. In the process of filtration advantage is taken of the negative pressure produced in an autoclave which has been heated up to a temperature of 125° C. and then allowed to cool. By a series of Y tubes connected to the exhaust nozzle by stout rubber tubing several filtration experiments may be carried out at the same time. The degree of permeability of the filter is next determined; this is accomplished by centrifugizing the filtrate and determining in the usual way the size of the organisms which have passed through. The six organisms under review pass through the Berkefeld N and V filters and through most Masson filters. The time required in the case of the Berkefelds is from half an hour to an hour; in the case of the Massons from three to four hours. They can, of course, be cultivated from such filtrates.

Resistance to Heat.—A third feature which is common to the group is the fact that they present a certain degree of resistance to heat. In the tissues and in culture they resist the application of a temperature of 56° C. for thirty minutes. In filtrates, on the other hand, the resistance is not of so marked a character; the longest period the organisms will resist is about twenty

minutes at this temperature. The thermal death-point is between 65° and 70° C.

Resistance to Glycerine.—An important feature, and one which can be put to practical use, as already noted, is the resistance of the organisms to the action of 50 per cent. glycerin. It is not of the same degree in all instances. In the case of polyneuritis, encephalitis, and rabies the organisms remain viable in glycerin for some months. The virus of trench fever resists its action for about three months. On the other hand, the organisms of influenza and nephritis show a feeble resistance, at the most three or four weeks being the viable period.

CONCLUSION.

Such, then, is a brief account of certain filter-passing organisms. In three of the diseases—influenza, trench fever, trench nephritis, and possibly in encephalitis—microscopical examination is sufficient for the purposes of clinical diagnosis. In polyneuritis, and in most cases of encephalitis, blood during the febrile stage is the only means of diagnosis.

As far as can be determined these organisms are definite entities—that is, they are not stages in the life-history of a more complex organism. No evidence could be obtained that they were mere products of the breaking down of larger cocci, as suggested by Rosenow.

In rabies no naturally acquired cases have come under review, nor has there been time to go into the microscopic distribution of the virus in the tissues.

REFERENCES.

¹ Flexner and Noguchi, *Journ. Exp. Med.*, 1913. ² Noguchi, *ibid.*, 1911.

ULCERO-MEMBRANOUS LARYNGITIS OF STREPTOCOCCIC ORIGIN.

BY

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During October and November, 1918, a series of cases of laryngitis was admitted to No. 3 Canadian General Hospital, Boulogne, both from the front and base areas, presenting unique features both in their laryngeal pictures and in the almost complete absence of general symptoms. No attempt will be made in this brief report to trace their connexion with any of the influenzal or other streptococcic infections prevalent at that time.

Similar conditions of the larynx were not seen in patients suffering from influenza in hospital at that time, nor has the condition been noted in any reports of necropsies following death from influenzal infection that I have seen.

Colonel Haven Emerson, M.R.C.U.S.A.¹, has classified eleven diseases as respiratory infections among members of the American Expeditionary Force, but, while mentioning acute pharyngitis and tonsillitis, he does not include laryngitis, yet of the cases observed 30 per cent. were seen in American troops. Fifty cases were observed in this hospital.

Symptoms and Course.

Onset.—There is usually a feeling of malaise or vague chilly sensations, headache, and pains in limbs. The temperature reached its maximum in from forty-eight to sixty-two hours, and in ten cases rose to 102°. Twenty-five cases had no elevation of temperature, and in fifteen the temperature varied from 99° to 101°, subsiding within forty-eight hours. Nearly all cases were admitted as walking cases, and complained only of the laryngeal discomfort.

Laryngeal Symptoms.—Cough, hoarseness, or aphonia appeared in from one to five days. Aphonia at some stage of the disease was present in forty cases, ten being hoarse only. Cough was uniformly present and was spasmodic and unproductive. Recovery was complete in from eight to twenty-five days, the average being seventeen days. Functional aphonia followed in eight cases.

Objective Signs.—The fauces might present no changes, but were usually somewhat red and engorged; the epiglottis was not involved. The vocal cords showed ulcero-membranous changes, usually the middle third of the cords was involved, and in this respect the picture resembled that of traumatic laryngitis from gas. The greyish translucent membrane lay symmetrically on both cords, and might involve as much as two-thirds of the upper surface and free edges of the cords. This membrane may be removed with difficulty by grasping with forceps or briskly rubbing with cotton tightly rolled on an appli-

cator. Its removal leaves a raw bleeding surface, which is quickly covered by the re-forming membrane. After the third or fourth day the edges of the membrane are seen to be curling up, or may have been removed, and a shallow ulcerated surface is exposed. The free edges of the cord were invariably involved, and very early showed thickening, and later a "mouse nibbled" appearance.

Oedema of the glottis, supra-glottic or infra-glottic tissues was not observed, and the arytenoids and ventricular bands were not involved in any way. Aphonia, at first due to mechanical disturbance, thickening or ulceration of the cords, may continue as a functional condition.

Treatment.

Treatment consisted of three factors, which we have arranged in the order of their importance: (1) Voice rest; (2) no smoking; (3) inhalations of medicated steam.

Inhalations may relieve the cough, but probably have no influence on the course of the ulcero-membranous process. Abstinence from smoking, especially army cigarettes, probably relieves irritant symptoms. Voice rest is most important and should be complete. It is evident that the greatest possible quietude of the vocal cords is essential, and even whispering was prohibited. Not only is recovery hastened by voice rest, but the patient is not likely to adopt a whispering voice after the cords have healed, which frequently leads to a condition of functional aphonia, as has often been seen after enforced or permitted whispering during the course of laryngeal disease.

The cases of functional aphonia generally yielded quickly, at the first treatment, to *persuasive* suggestion as used in pure functional aphonia cases seen among soldiers, and as opposed to the "*peremptory*" suggestion treatment.

After the disappearance of the membrane the cords were red, injected, and somewhat thickened or roughened on the edges. In a few cases recovery was hastened by the daily application of some astringent to the cords. Partial rest of the voice was enjoined for a convalescent period of a week or ten days. Those patients who might have to use the voice in giving or transmitting commands to troops were detailed to duties not entailing the use of a loud voice for such time as would permit the cords to resume their normal appearance. Too early use of the voice appeared likely to lead to a subacute or chronic laryngitis with permanent damage to the cords.

Bacteriology.

Cultures were taken from the cords by three methods. An attempt was made to adapt an applicator moving in a curved glass tube, as in taking smears from the nasopharynx; this was not successful. Some of the smears were made by indirect laryngoscopy, care being taken to reach the larynx without contaminating the sterile cotton on the applicator. Other smears were made by direct laryngoscopy through a short laryngoscopic tube.

Out of 50 cultures, 35 showed streptococci in almost pure growth; 10 showed the same as the prevailing organism, and the remainder were indefinite. Of the 35 streptococcic growths, 25 were classified as *Streptococcus haemolyticus* and 10 were *Streptococcus viridans*. Further subdivision of these groups was not attempted owing to difficulty in securing carbohydrate media.

REFERENCE.

¹ U.S. Army Medical Bulletin, December, 1918.

SHELL WOUND OF LEFT SIDE OF NECK: INJURY OF GREAT VESSELS AND DIVISION OF VAGUS NERVE:

RECOVERY AND RETURN TO FIRING LINE.

BY

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THE following case appears to be worthy of record on account of the nature and severity of the injury, and as an example of recovery after complete division of the vagus. Owing to the additional injuries to the great vessels, necessitating ligation of the left common, external and internal carotid arteries as well as of the internal jugular vein, the fact that the man recovered sufficiently

to return to his battalion is remarkable without reckoning his recovery from an attack of trench fever, and from a gunshot fracture of the thigh.

Private C. (Australian infantry), aged 20, was wounded in the neck by a fragment of shell on April 28th, 1917, and was admitted to the 3rd Australian Casualty Clearing Station on the same day. He remembered nothing after being wounded with the exception that he had a slight recollection of being in a motor ambulance until he became conscious after operation.

The wound of entry was on the left side, over the horizontal ramus of the lower jaw, which was splintered, but without solution of continuity. The track then extended inferiorly and posteriorly to a large clot surrounding a wound of the left internal jugular vein, which was almost completely severed immediately below the level of the superior border of the thyroid cartilage. The left common carotid artery, immediately below the bifurcation, was slightly lacerated and contused, but the intima was not severed. The artery was thrombosed at this level, and the thrombus extended into the proximal portions of the external and internal carotid arteries. The proximal and distal ends of the divided internal jugular vein were ligatured. I ligatured the left common, external and internal carotid arteries immediately beyond the limits of the injury and thrombus, and the intervening thrombosed portions of these vessels were removed. The left vagus nerve was found completely severed. The track was then followed to the fissured transverse process of a cervical vertebra (sixth), and from this position the shell fragment was removed.

The vagus nerve was sutured with catgut and the wound sutured, free drainage anterior and posterior to the sternomastoid being provided. The patient was in the casualty clearing station for six days; he could only whisper; there was no hemiplegia; the pulse rate was 140.

The remainder of the history I obtained for the most part from the patient. He was admitted to No. 5 General Hospital on May 5th, 1917. The pulse was still 140, and this rate was maintained for about two weeks after the date of being wounded. The sutures were removed on May 12th, 1917. The wound had healed on May 16th, and he arrived in England on May 17th, 1917. There was weakness of the left arm (inability to abduct) for six weeks after being wounded. By the end of June, 1917, he could walk at a slow pace. He noticed that the left armpit and left side of the chest perspired very freely from about May 16th to June 16th, 1917. Improvement of voice was noticed by the end of June, 1917; the pulse rate was then about 100. A note made on the medical history sheet previous to August 5th, 1917, states "slight paresis deltoid and biceps." He was admitted to the command dépôt on that day. Any sudden severe exertion made him feel giddy, and he was unable to do physical drill on account of coughing and severe vomiting. No discomfort was caused by marching at the ordinary rate.

Between August 5th and November 10th, 1917, he was classified four times, and on each occasion the medical officer remarked on his rapid pulse. He rejoined his battalion on November 10th, 1917, and was evacuated, suffering from trench fever, on February 2nd, 1918. The temperature remained high for one week; the pulse reached 120, and remained rapid till the beginning of April, 1918. He again rejoined his battalion in June, 1918. On September 2nd, 1918, he was evacuated for shell wound of the right thigh (compound fracture of femur), which became septic. The highest temperature recorded in his notes was 103°, and the highest pulse rate 120. He last vomited in November, 1918.

On January 16th, 1919, he was admitted to the 1st Australian General Hospital. The femur was firmly united in good position. On February 28th, 1919, he could wheel himself about in a wheel chair. There was slight hoarseness, but no dysphagia, and the appetite was good. The average pulse rate since admission while resting has varied between 80 and 90. After wheeling himself at a rapid rate for 200 yards in a wheel chair, the pulse rate rose to 144; after five minutes it fell to 108, and in fifteen minutes to 96. Physical examination revealed no abnormality. X-ray examination after a bismuth meal showed that the stomach was normal in shape, position, and time of emptying. X-ray examination showed no abnormality of the transverse processes of the cervical vertebrae of the left side. The right vocal cord was natural, and moved freely; the left was perfectly white, but only moved very slightly. Speech was accomplished by compensation, the right vocal cord coming across to the left. No pulsation could be detected in the left superficial temporal artery.

THE Belgian Royal Academy of Medicine, at a meeting on February 22nd, passed a resolution calling on the Government to enforce the laws against alcoholism and on the legislature to institute additional measures.

DR. ALICE HAMILTON has been appointed assistant professor of industrial medicine in Harvard Medical School. She is said to be the first woman to hold a teaching appointment in that university. She was for three years professor of pathology in the Women's Medical College of North-Western University and was bacteriologist to the Memorial Institute for Infections in Chicago for eight years. Since 1910 she has been engaged in investigating industrial poisons for the Federal Department of Labour.

Lettsomian Lectures

ON

JAUNDICE: WITH SPECIAL REFERENCE TO TYPES OCCURRING DURING THE WAR.*

By WILLIAM HENRY WILLCOX, C.B., C.M.G.,

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LECTURE II.—PART I.

TOXIC JAUNDICE PRODUCED BY THE ACTION OF CHEMICAL POISONS.

BEFORE the war our knowledge of this form of jaundice was largely dependent on animal experiments. Cases occasionally occurred in man, and these were usually accidental or industrial in nature and often of medico-legal interest. Thus we were familiar with the jaundice occurring in poisoning by phosphorus, also that occasionally following the administration of arseno-benzol derivatives for therapeutic purposes, and of chloroform as an anaesthetic in those rare and tragic cases of delayed chloroform poisoning. Apart from these instances, the subject of toxic jaundice was of academic rather than of practical interest.

Since the war experiments on the largest scale have unavoidably been carried out on munition workers and those engaged in work involving the use of dangerous poisons. We have become intimately acquainted with the many forms of toxic jaundice, and its dangers have been closely brought home to us, and in consequence the utmost precautions have been taken to prevent its occurrence in those exposed to risks of poisoning.

TETRACHLORIDE OF ETHANE POISONING.

This substance is a colourless liquid smelling like chloroform and having a specific gravity of 1.614 and a boiling point of 147° F. It is of interest because the first cases of toxic jaundice observed¹ in this country after the outbreak of war were due to the inhalation of the vapour of tetrachloride of ethane.

This substance, sometimes known as acetylene tetrachloride, was used in the preparation of cellulose varnish ("dope"), which was extensively employed in the manufacture of aeroplanes in order to give a firm airtight and waterproof coating to the calico stretched on the framework of the aeroplane wings. Several coats of dope had to be applied.

The dope was made by dissolving acetate of cellulose in a mixture of benzene, acetone, methylated spirit, and tetrachloroethane. It was a viscid colourless liquid smelling like chloroform, and on evaporation it gave off a mixed vapour of the volatile liquids which was 1.91 times as heavy as air.

In September and October, 1914, the occurrence of several cases of illness associated with jaundice was noticed² at the Hendon aeroplane factory. Cases of a similar nature were later observed at other aeroplane and seaplane factories. The outbreak of war naturally caused greatly increased activity in these factories, and the workers were employed overtime, so that any toxic influences to which they might be exposed in their work would be greatly increased.

My first acquaintance with the subject was on November 5th, 1914, at my out-patient department at St. Mary's Hospital. The case was as follows:

CASE I.

G. M., a man aged 36, had been employed at the Hendon aeroplane factory since August 8th. On October 24th he felt ill; he had nausea and retching in the morning, some slight pain in the upper abdomen, and jaundice. He gave up work. The symptoms increased in severity, and at my examination there was marked jaundice, and the patient appeared seriously ill. Pulse 96, temperature 99.5° F. The liver was felt about one inch below the right subcostal border in the right nipple line on inspiration. No abdominal tenderness was present; no anaemia. He said that the stools were pale and the urine high-coloured. There was no history or evidence of syphilis or alcoholism. The tongue was furred and dry. He thought his illness was due to some condition associated with his work, because ten other workers were affected similarly. On inquiry he stated that aeroplane "dope" was used in the factory, and he thought this was composed of "collodion, chloroform, ether, and acetone." He said that men who did not use the dope also

* Delivered before the Medical Society of London, April-May, 1919.

suffered from the illness, but several of those who were using the dope had been taken ill. A diagnosis of toxic jaundice was made, and it was thought probable that some constituent of the dope was the cause of the patient's illness. I did not see the patient again, but I heard that on November 14th he was admitted to the Middlesex Hospital, and died there on the 26th.

The case was referred to Mr. Luxmore Drew, H.M. coroner, and he, after careful consideration, decided that a *post-mortem* examination should be held. This was made by Dr. Spilsbury, who found a shrunken liver markedly bile-stained. Dr. T. M. Legge, Medical Inspector of Factories, Home Office, also investigated the case, and it was thought that the condition of the liver might be connected with the action of some poison to which the deceased was exposed during life.

A number of animal experiments were conducted by me relating to the possible toxic action of the constituents of the dope used at the aeroplane factory, and it was clearly demonstrated that one of the constituents—namely, tetrachlorethane—was a powerful liver and kidney poison causing fatty degeneration of the cells of these organs.

Careful investigations were made by Dr. Legge and myself into the health of other employees at the factory and into the conditions of work there.

All the facts were carefully placed before the learned coroner, Mr. Luxmore Drew, who made a most careful and painstaking inquiry into the case, and as a result the jury found that death was due to degeneration of the liver caused by tetrachlorethane present in the cellulose varnish or dope used by deceased and to the vapours of which he was exposed during life.

A number of other cases were examined by me, of which the following are examples:

CASE II.

C. L., male, aged 48, began work on August 10th, 1914, and left work on October 19th. He complained of constipation, sick headache, jaundice, nausea, and weakness, and some soreness of the eyes. The urine was high-coloured, and the stools were pale. The patient returned to work on November 9th, but gave up work again on November 23rd. On examination on December 10th definite enlargement of liver was noticed; it was not tender. Slight but definite jaundice was present. The patient made a good recovery on being kept away from his work.

CASE III.

H. G., male, aged 53, commenced work on August 31st, 1914, and gave up work on October 27th. He was weak and ill, with loss of appetite. He had dryness of the throat. He was sick daily for fourteen days, and was light-headed at night. He had definite jaundice, the urine being high-coloured and the stools pale. There was no abdominal pain. The liver was slightly enlarged. Slight but definite icterus was present; no anaemia. Patient made a good recovery.

CASE IV.

J. R. P. H., male, aged 58, began to work at Hendon on June 3rd, 1914. He was working close to where the dope was used. He left work on September 21st. He was weak, felt drowsy, had no appetite, no energy, and the bowels were constipated. He had nausea, and on one occasion vomiting. Jaundice developed on September 14th; he became deeply jaundiced, with pale stools and high-coloured urine. He went to hospital on October 2nd, and was in there seven weeks. He developed ascites while in hospital, and this increased. Oedema of the legs also developed. The urine on examination by Dr. J. M. Bernstein showed a deposit of leucin. On January 1st, 1915, paracentesis was performed by me, and 22 pints of clear ascitic fluid were drawn off. The fluid gradually reaccumulated, and about three weeks later paracentesis was again performed by Dr. W. H. Ogle-Skan, who removed 21 pints of ascitic fluid. There was no history or evidence of alcoholism or syphilis in this case. I afterwards saw this patient in consultation with Dr. Ogle-Skan, under whose care he was, and he made a good recovery.

In none of the above cases was there a history of alcoholic excess or of syphilis. In several of the cases the Wassermann test for syphilis was applied, but in every case the result was negative.

On December 4th, 1914, Dr. T. M. Legge and I visited the Hendon aeroplane works. The smell of tetrachlorethane was very much in evidence, and at that time the ventilating arrangements by the plenum system were such that the heavy vapour of the dope was blown about the large room of the factory instead of being extracted. A reference to a plan on which were marked the places where affected persons worked showed that several cases of jaundice occurred at quite considerable distances—for example, thirty or forty yards—from where the dope vanishing was done. The more severe cases occurred in persons who were actually using the dope or were near where it was used. On questioning some of those working in the factory at the time of our visit, it was found that several workers complained of nausea, biliousness, drowsiness, constipation, loss of appetite, nasty taste at the back of the throat, headache, and general malaise, these symptoms being no doubt due to the dope vapour.

Cases of illness similar to those at Hendon have occurred in other factories where tetrachlorethane has been used. At the aeroplane factory at Crayford two severe cases occurred, namely:

CASE V.

E. H., female, aged 19, commenced work in August, 1914. About November 15th she complained of the smell of the dope, of discomfort in throat, and drowsiness. On December 27th she became acutely ill with jaundice; there was vomiting and some abdominal pain. She became worse, and on January 2nd, 1915, vomited blood, was stuporose, and had convulsive twitchings. The stupor deepened into coma which lasted two days, when death supervened.

Necropsy.—The liver was hard and firm; it was very yellow, and showed marked congestion; it weighed 34½ oz. The kidneys showed marked yellow staining of the cortex, the pyramids being intensely congested. The medulla was yellow and congested. The kidneys weighed each 5 oz. The heart weighed 7½ oz. The muscle showed yellow staining; some pink staining of endocardium. Numerous petechiae were present over the surface of the left ventricle. The small intestine showed intense petechial haemorrhage over the surface. There was marked congestion of the small intestine. The spleen weighed 8 oz.; it was hard and firm. Microscopical examination of the liver showed extensive necrosis, and in the kidney fatty degeneration was present.

CASE VI.

M. W., female, aged 17, was working in the aeroplane factory for four months. On January 4th, 1915, she felt ill; complained of discomfort in throat and general weakness. On January 28th she gave up work. She complained of nausea, sickness, and constipation. Jaundice occurred at this date. She was examined on February 25th. There were intense jaundice, stupor, and delirium. Neither the liver nor the spleen could be felt. There was some dullness in the flanks, which became resonant when the patient rolled on to the side. The urine contained much bile and a trace of albumin; many epithelial and granular casts were present. Patient became worse, passing into coma, and death occurred on February 28th.

Symptoms.

The following is a general summary of the symptoms of tetrachlorethane poisoning as it occurred from inhalation of the vapour in factories.

For some days the patients complained of general malaise, drowsiness while at work, loss of appetite, nausea, retching in the morning, unpleasant taste in the throat, constipation usually, and headache. Abdominal discomfort was present in some cases. After indefinite symptoms of this kind, lasting several days or even weeks, definite jaundice developed, and this was associated with pale stools and bilious urine. In severe cases, during the jaundice stage, icterus gravis might develop. The patient would vomit and become mentally confused, stuporose, or delirious. Purpura, haemorrhages, or convulsions might occur and coma supervene and death result. In the terminal stage of the disease, which usually only lasted two or three days, suppression of urine occurred towards the end.

If the patient were removed from the influence of the poison in the early stages of the illness the symptoms cleared up, but it was some weeks before the jaundice became completely free, even if it were only slightly marked. In cases with deep jaundice the prognosis was bad and recovery was unlikely. In one very interesting case, described above, the patient recovered from the acute symptoms of a rather severe attack, but afterwards signs of contraction of the liver with portal obstruction developed, marked ascites resulting. It is interesting to record that after two operations of paracentesis the patient made a good recovery.

In the early stages of the illness the liver appeared to be slightly enlarged, no abdominal tenderness being present. Later the liver diminished in size. The urine contained in the late stages of a severe case much bile, a small amount of albumin, and numerous casts, epithelial and granular casts predominating. Leucin and tyrosin crystals were found in the unconcentrated urine in only one case.

Interesting clinical features of the action of tetrachlorethane on the liver in the case of the aeroplane workers in this country were: (1) The insidious onset of the symptoms. (2) The comparatively long duration of the acute stage when marked jaundice had supervened, thus distinguishing the cases from idiopathic acute yellow atrophy of the liver. (3) The absence of marked pyrexia, thus distinguishing the cases from infective jaundice. (4) The absence of anaemia, thus distinguishing the cases

from poisoning by poisons which cause marked blood destruction—for example, arseniuretted hydrogen, etc. (5) The marked depth of the jaundice, which was much deeper than is usually seen in cases of delayed chloroform poisoning and many other liver poisons.

There seemed to be a marked variation in the susceptibility to the poison, and this corresponds to the varying susceptibility of patients to other liver poisons—for example, chloroform as described³ by Dr. L. G. Guthrie.

The jaundice appeared to be of the toxicæmic or hæmoleptogenous kind, and the exact type of the symptoms was distinguishable from those of previously described liver poisons. There was no doubt that the question of dosage played a very important part in the type of symptoms and in the incidence-rate of the illness. Thus the body was able to deal with very small amounts of the poison. When the quantity of poison absorbed became greater than the amount which could be dealt with, then symptoms resulted, and these would be progressive unless the patient was removed from the influence of the poison. The effect of increased dosage was well shown by the effects of overtime and the increase in the quantity of dope varnish used in causing illness, whereas under previous conditions no harm resulted to the health of the workers.

Treatment.

Prevention of poisoning by the vapour of tetrachlorethane was of much greater importance than the treatment of patients suffering from this intoxication. Effective measures were instituted in all factories where tetrachlorethane was used whereby the heavy vapour was removed by powerful extraction fans, which removed the vapour at a low level and rapidly withdrew it from the workers. The Home Office took prompt action in the issuing of warning instructions, and in ensuring the provision of satisfactory measures for removal as far as possible of any danger to workers from the vapour of the dope used.

The treatment of patients suffering from toxic jaundice due to "dope vapour"⁴ consisted, first, in their removal from all influence of the poison. Rest, light diet containing ample carbohydrate, including dextrose or honey, and a much reduced amount of fat and protein, saline aperients and general hygienic measures were all that were necessary in mild cases.

In cases with marked jaundice alkalis should be given by the mouth in full doses—for example, sodium citrate and sodium carbonate, $\frac{1}{2}$ -drachm doses of each in solution every two or three hours; also, by rectum, 3 drachms of sodium bicarbonate and 4 drachms of glucose dissolved in 10 oz. of water every eight hours. Where symptoms of icterus gravis threaten, intravenous or subcutaneous injections of normal saline containing 2 drachms of sodium bicarbonate to the pint should be given twice daily until the toxic symptoms improve.

This line of treatment should be adopted in cases of toxic jaundice due to other chemical poisons—for example, trinitrotoluene, delayed chloroform poisoning, etc.

Experimental Observations.

Experiments were instituted to test each of the constituents of the dope and the dope itself as regards the toxic action of their vapour on the liver.

For each experiment a large glass chamber (desiccator) was used. In the bottom of this were placed daily 10 c.cm. of the liquid to be tested. A perforated zinc platform was stretched across the middle of the chamber—that is, half-way up. On this were placed the animals to be experimented upon. The top of the chamber was covered with a perforated zinc roof. Rats were selected as the most suitable animals. The animals were kept in the glass chamber for eight hours a day for a week.

The liquids tested were dope, tetrachlorethane, acetone, benzene, and methylated spirit respectively. Two rats were placed in each chamber, five experiments being carried out together.

The rats thus exposed to dope vapour and tetrachlorethane vapour became very drowsy and slept all day. After removal from the chamber they remained drowsy for some little time, and on some occasions they were quite ataxic in gait, falling over on to their sides. After an hour or more usually they fed and became active. These animals did not gain in weight during the week's treatment.

In the experiments with acetone, benzene, and methylated spirit the animals were drowsy while exposed to the respective vapours, but on removal from it they immediately became lively and fed well. No ataxic symptoms were observed. All these animals gained markedly in weight during the week.

After seven days' treatment the animals were killed, and *post-mortem* examinations were made on them by Dr. Spilsbury and myself. The tetrachlorethane rats showed marked changes in the liver to the naked eye, there being fatty degeneration and bile staining present. The "dope" rats showed similar changes but less marked. The rats exposed to the vapour of benzene, acetone, and methylated spirit showed no changes in the liver to the naked eye.

Careful microscopic examination of the organs showed marked fatty deposition and cloudy swelling in the liver and kidneys of rats exposed to dope vapour and tetrachlorethane vapour, but no abnormal change in the animals exposed to the other vapours. Rats were also exposed to the action of dope vapour and tetrachlorethane vapour for five weeks. Marked diminution in size in the liver occurred in each case. The liver and kidneys were pale on section. They showed cloudy swelling and fatty degeneration.

The above experiments showed conclusively that tetrachlorethane was a powerful liver poison, and also they showed that dope vapour was a liver poison, and that the poisonous property of dope vapour was due to tetrachlorethane being present in it.

In 1909 I made several experiments with tetrachlorethane on cats and rats in order to determine the anaesthetic effect of the drug. The vapour was found to be a powerful anaesthetic, but after removal from the vapour it was a long time before the animal recovered from the effects, sometimes twenty-four hours or more being required. It was obvious that tetrachlorethane was much more poisonous than chloroform. About this time experiments were carried out by Dr. Veley, F.R.S.,⁵ in the Physiological Laboratory of the University of London, and these showed that, weight for weight, tetrachlorethane was 2.8 times as powerful a tissue poison as chloroform.

Dr. B. H. Spilsbury has made very careful pathological investigations in several fatal cases of poisoning by tetrachloride of ethane. He found in the cases of relatively short duration marked degenerative changes in the liver, kidney and heart, and that fat was deposited in the cells of the liver and kidney and often in those of the heart muscle. Where the patient had lived for some time before the fatal termination, fat was present to a much less extent or might be absent. In these cases there was marked destruction of areas of the liver cells and their place was taken by newly-formed fibrous tissue—"replacement cirrhosis."

Owing to the great danger to which workers were exposed, the use of tetrachlorethane as a constituent of "dope" was given up, a good substitute having been discovered. Tetrachlorethane poisoning has been described at some length because it is a typical example of a poison causing toxic jaundice.

In consequence of the importance of "toxic jaundice" from an industrial point of view, it was added in 1915 to the list of diseases to be notified to the Chief Inspector of Factories at the Home Office, London.

TRINITROTOLUENE.

Cases of toxic jaundice due to trinitrotoluene absorption were first observed in 1915, and numerous deaths from toxic jaundice caused by it were reported in 1916 and since. The general symptoms and pathological changes produced by trinitrotoluene resemble closely in many respects those caused by tetrachlorethane. A point of difference is that the former is associated with blood destruction and some cases show a severe anaemia, while in the latter this characteristic is little if at all marked.

Trinitrotoluene is a yellow powder which is often crystalline; sometimes it is in the form of fused yellowish brown lumps. It is used by munition workers for filling shells. The main channel of absorption of the poison appears to be through the skin, and the danger is increased by the presence of grease or oil. The skin and hair become stained yellow. In a few cases dermatitis has occurred on the hands, wrists, face, and neck, associated with itching and desquamation. More rarely a raised

erythema may occur on the trunk, and affecting also the arms, thighs, and legs. Usually dermatitis is absent.

The poison may be inhaled in the form of dust or vapour, and a certain amount of dust may be swallowed. Dr. Benjamin Moore,⁶ after a good deal of experimental work on the subject, considers that the skin is the main entrance, and this is undoubtedly correct. The symptoms commence after a varying interval of a few days to several months of exposure—listlessness, pallor of the face, with sometimes cyanosis, and a pinched appearance occur. Nausea, distaste for food, and a bitter taste are early symptoms. Inhalation of the dust causes a burning in the throat and nose with excessive secretion, accompanied by cough and tightness of the chest. Constipation, depression, giddiness, and often faintness are early symptoms, and morning vomiting often occurs. After a duration of these preliminary symptoms for a varying period, sometimes quite short, jaundice commences, and often becomes deep, with pale stools and bilious urine. At this stage the liver is somewhat enlarged, and can be felt on palpation. These symptoms indicate grave changes in the liver associated with catarrh of the finer bile ducts, and resulting biliary obstruction.

Should the function of the liver cells become seriously impaired, symptoms of icterus gravis may appear, owing to autointoxication. The patient becomes irritable, restless, and delirious, vomiting occurs, and a condition of stupor follows. Convulsions, or subsultus tendinum, may occur, and Cheyne Stokes breathing is commonly present. Coma ensues, with often an extensor plantar reflex, and sometimes exaggerated knee-jerks and ankle clonus.

Haemorrhage in the form of haematemesis, melaena, or epistaxis is common at this stage, and death commonly results within three days of the onset of these symptoms.

The blood changes in trinitrotoluene jaundice have been carefully studied⁷ by Captain M. J. Stewart, R.A.M.C. Out of fourteen cases examined, in three there was severe anaemia of the "pernicious" type, the colour index being greater than 1. A neutrophile leucopenia was present in nine of the cases; in only one case did a neutrophile leucocytosis occur. A lymphocytosis occurred in nine of the cases. He was of opinion that a progressive failure of the leucoblastic function of the bone marrow occurred.

The macroscopic and microscopic changes in the organs have been carefully studied⁸ by Spilsbury, Turnbull, Stewart, and others. In the liver cell degeneration, often associated with fat deposition, occurs early. This is accompanied by microscopic signs of catarrh of the bile ducts in the portal areas and round cell infiltration there. As the cell degeneration advances necrosis occurs and the liver tissue becomes replaced by fibrous tissue.

To the naked eye, in the early stages the liver would be enlarged and on section have a uniform yellowish appearance due to the uniform degenerative changes often of a fatty nature. Later the liver is shrunken and areas of dark reddish colour appear intermingled with the yellowish bile stained areas. The former represent the newly formed replacement fibrous tissue, and this is often most marked in the anterior marginal region. The kidney and heart muscle usually show marked degenerative changes of a fatty type.

Treatment.

The treatment of trinitrotoluene jaundice should be on the lines laid down for the similar condition in tetrachlorethane poisoning, which has been fully described by me.⁴ Remarkable recoveries of three grave cases energetically treated on these lines have been published by Dr. Barbara Crawford.⁹ In these cases definite signs of icterus gravis had developed, but following the administration of 3ij of sodium bicarbonate daily and 6 oz. of a saturated solution of the same salt by the rectum, recovery occurred.

Dr. R. Murray Leslie⁹ has described a very interesting case of severe type which recovered after the administration of sodium bicarbonate 30 grains every two hours. Dr. W. Bower¹⁰ has also described a case showing symptoms of atrophy of the liver, which recovered after treatment on the above lines.

In December, 1916,¹¹ an official pamphlet on trinitrotoluene poisoning was published by the Ministry of Munitions. In this a clinical test of the urine for the poison or its products, discovered by Mr. J. Webster, F.I.C., was described. Since then a modification of

Webster's test has been published¹² by F. Tutin, whereby fallacies due to the taking of drugs such as rhubarb, senna, cascara, etc., containing anthraquinone derivatives, can be excluded.

Webster's test has enabled a more accurate knowledge of the mechanism of T.N.T. industrial poisoning to be gained. Thus it was found that when the skin of workers was impregnated with the poison, the urine gave Webster's reaction for many days after exposure. On the other hand, poison taken into the alimentary tract could not be detected after twenty-four hours from its administration. This prolonged skin absorption will explain some of the cases where the onset of symptoms of poisoning takes place after removal from the work.

DINITROBENZENE.

This substance, which has been used for many years in the manufacture of explosives, is a yellowish crystalline powder, the channels of absorption of which are similar to those for trinitrotoluene.

The poison has a very marked action on the red blood corpuscles, causing severe anaemia, dyspnoea and cyanosis, the latter being due to the formation of methaemoglobin.

The effects on the blood are by far the most prominent and earliest feature, but after prolonged exposure to the poison degenerative changes may occur in the liver, and an obstructive catarrh of the fine bile ducts develop. In such cases toxic jaundice will occur, and fatal symptoms of icterus gravis are liable to supervene.

PICRIC ACID.

Picric acid (trinitrophenol) has been used largely as an explosive. It often causes an irritative dermatitis in workers exposed to the dust. Absorption of the poison into the system causes symptoms similar to those of dinitrobenzene, and in very severe cases toxic jaundice and icterus gravis may result.

DINITROPHENOL.

This substance, which is sometimes used in munition factories, causes symptoms similar to picric acid, except that dermatitis is less marked. Two fatal cases of toxic jaundice from it have been published.¹³

CHLOROFORM.

After the administration of this as an anaesthetic toxic jaundice occasionally develops. The symptoms, known as delayed chloroform poisoning, often commence two days or so after the immediate effects of the anaesthetic have passed away. Vomiting, jaundice which is often only of slight degree, and nervous symptoms developing into those of "icterus gravis," is the common course of such cases, which commonly terminate fatally within a very few days.

CASE VII.

The following is a typical case. In February, 1916, a boy aged 12 was operated on for appendicitis at St. Mary's Hospital. He stood the operation well, and recovered from the immediate effects of the anaesthetic. Three days after the operation he became drowsy, and vomiting occurred on several occasions; definite but not deep jaundice was now observed. The drowsiness rapidly passed into stupor, followed by coma, and death occurred five days after the operation, the duration of the symptoms of icterus gravis being about forty-eight hours. Dr. Spilsbury carried out pathological investigations in this case, and found intense degeneration of the liver cells, with excessive deposition of fat in them.

A considerable number of these cases have been carefully investigated during recent years. An invariable *post-mortem* condition is intense degeneration of the liver cells with great deposition of fat in them; degenerative fatty changes are also found in the kidney and heart. At some period of the illness signs of acid intoxication (acetone and diacetic acid in the urine) usually occur.

The incidence of delayed chloroform poisoning is greater in children, and a predisposition to the condition is undoubtedly a pre-existing acid intoxication. In a discussion on this subject¹⁴ at the Royal Society of Medicine, in February, 1912, it was pointed out that the excessive restriction of food before an anaesthetic was likely to act as a predisposing cause to an acid intoxication which would greatly increase the risk of delayed chloroform poisoning. The free administration of sugar and carbohydrate foods before an anaesthetic was recommended as a prophylactic.

I am strongly of opinion that careful examination of the urine for acetone and diacetic acid should always be made before an anaesthetic is administered, and if these are present it is well for the operation to be postponed if possible, and certainly chloroform should not be used.

The late Dr. Leonard Guthrie, whose early demise we all greatly deplore, was very interested in the not infrequent occurrence of these cases in children. On February 1st, 1907, he read an able paper on delayed poisoning by anaesthetics, and expressed the opinion that a predisposing cause was a pre-existing fatty condition of the liver.³ Recent research has tended to confirm the correctness of his view.

ARSENIURETTED HYDROGEN.

This is an intensely powerful gaseous poison. Accidental cases have occurred from inhalation of the impure hydrogen evolved when acids act on metals, such as iron, which contain arsenic, for example, in balloon filling, etc. The gas causes very intense destruction of the red blood corpuscles, and also is a powerful poison to the liver cells.

The symptoms occur within a few hours of exposure, and are characterized by extreme anaemia, vomiting, weakness, rigors, haematemesis, haematuria, and melaena. Jaundice occurs as a result of the excessive production of bile pigments, and the obstruction caused by the viscid bile and the catarrh of the fine bile ducts. This symptom is not a prominent one, and in some cases does not develop. The terminal symptoms are those of toxæmia due to auto-intoxication—namely, those of icterus gravis.

PHOSPHORETTED HYDROGEN.

This is an extremely poisonous gas, having an action very similar to that of arseniuretted hydrogen.

In 1908 several deaths occurred on ships from symptoms similar to the above as a result of exposure to the gases evolved from ferro-silicon, which was part of the cargo. This is a solid substance made in France, and used for hardening steel. It commonly contains as impurities calcium phosphide and calcium arsenide.

Dr. Wilson Hake in 1910¹⁵ investigated the gases evolved from ferro-silicon by the action of moisture, and found them to consist of a mixture of phosphoretted hydrogen and arseniuretted hydrogen in the proportion of 8 to 1. Dr. Copeman, for the Local Government Board, conducted a careful investigation into the dangers associated with the transport of ferro-silicon, and as a result effective preventive measures were instituted by the Board of Trade.

ARSENOBENZOL DERIVATIVES.

These have been very extensively used since the discovery by Ehrlich of salvarsan in 1910 and neo-salvarsan in 1912. Since the war compounds of the same composition as the above—namely, "kharsivan" and "neo-kharsivan"—have been manufactured in England, and other arsenobenzol derivatives are extensively used therapeutically. These substances have a powerful toxic action on the liver cells, and an intense degeneration with much fat deposition is found in the liver and kidney in fatal cases.

After the administration of salvarsan there are generally produced some slight symptoms due to the direct toxic action of the drug—namely, slight vomiting, looseness of the bowels, and a temperature rising a degree or so. These symptoms only last for about twenty-four hours, and usually no others occur. Very occasionally, however, after a quiescent period of one or two days, within four days from the administration usually, symptoms of profound toxæmia occur, and the prognosis in such cases is extremely grave. These symptoms are undoubtedly due to an auto-intoxication, and are such as occur in acute yellow atrophy of the liver. Thus an abnormal mental condition—for example, irritability and delirium, often associated with slight jaundice—develops, the patient becomes stuporose, convulsions may occur, and the breathing may be Cheyne-Stokes in character. Coma supervenes, and death results usually after two or three days from the onset of these grave symptoms. It was thought that these grave nervous symptoms were the result of the action of the arsenic compound on the central nervous system, but this theory was disproved by investigations made by Mr. J. Webster, F.I.C., and myself,¹⁶ in which it was shown that arsenic was absent from the central nervous system in these fatal cases. There is no doubt that these toxæmic symptoms are due to auto-intoxication

following the loss of hepatic function consequent on the destructive effect of the arsenobenzol compound on the liver cells.

The symptoms above described must be carefully distinguished from those of acute arsenical poisoning, such as vomiting, diarrhoea, rashes, etc. When these occur after arsenobenzol compounds, they are probably due to impurities or decomposition of the preparation.

In consequence of the danger of occurrence of grave toxæmia from arsenobenzol compounds the dose has been wisely reduced from the original 0.6 gram of salvarsan or 0.9 gram neo-salvarsan recommended by Ehrlich. Thus it is much safer to give repeated doses of 0.3 gram kharsivan or 0.45 neo-kharsivan at intervals. It was shown in our paper, already referred to, that after an intravenous injection of 0.5 gram of salvarsan, arsenic could be detected in the urine and faeces for three weeks. Hence, in order to avoid possible dangers of liver degeneration and resulting auto-intoxication, it is wise that, even with the smaller doses of 0.3 gram, an interval of two or three weeks should elapse between each dose.

A very interesting case was recorded¹⁷ by Lieut.-Colonel R. A. Veale and Captain B. H. Wedd, R.A.M.C., in which death resulted from symptoms of icterus gravis after two days' illness. In this case there was an interval of five weeks from the last of a course of eight injections of 0.6 gram of novarsenobenzol.

TOLUYLENE-DIAMINE.

The action of this drug in the production of toxic jaundice in dogs has been described when discussing the pathology of jaundice. Toluylene-diamine in dogs has a specific effect on the intrahepatic bile capillaries, causing an obstructive inflammatory catarrh with consequent deep jaundice.

PHOSPHORUS POISONING.

The symptoms of acute phosphorus poisoning have been known for many years, and in the light of our recent knowledge of toxic jaundice the description of these cases is most interesting, and affords an excellent example of toxic jaundice.

Thus the primary stage is one of gastro-intestinal symptoms due to the irritant action of the poison. After a varying interval of a few days this is followed by jaundice and the typical symptoms of "icterus gravis," or acute yellow atrophy of the liver, which are generally fatal within two or three days. Pathological examinations have proved that phosphorus has a most powerful action on the liver, causing an intense degeneration, associated with fatty engorgement of the cells, with resulting loss of function and auto-intoxication.

MUSHROOM POISONING.

Poisonous fungi eaten in mistake for edible mushrooms produce intense degeneration of the liver cells with symptoms of auto-intoxication often associated with jaundice. A recent fatal case of mushroom poisoning has been investigated by Dr. Spilsbury, to whom I am indebted for this account.

CASE VIII.

A man, aged 24, while visiting Epping Forest collected a number of fungi, some black, some dark, and some yellow, which he took home and ate for his supper, thinking they were edible mushrooms. A few hours after the meal vomiting and diarrhoea set in, and these symptoms passed into stupor and coma, death occurring about sixty hours after the meal.

Post mortem intense degeneration with great deposition of fat was found in the liver cells, and advanced degenerative changes with deposition of fat were present in the cells of the kidney and heart muscle. No signs of gastro-intestinal irritation were found. The cause of death was undoubtedly an auto-intoxication resulting from impaired hepatic function.

A companion who also partook of the mushrooms suffered shortly afterwards from vomiting and diarrhoea lasting for twenty-four hours, but no grave symptoms followed.

SNAKE BITE.

The venom of snakes of the viper order has a specific action on the blood, causing alteration of its coagulability and commonly extensive extravasation in the part affected. Local and sometimes general jaundice may occur after the bites of such snakes. The primary effect in the causation of jaundice is due to the great blood destruction produced.

CONCLUSIONS.

A review of the above examples of toxic jaundice shows that there is a common pathological explanation of all.

Degeneration of the liver cells, blood destruction, and production of a catarrh of the intrahepatic bile ducts are in varying respective degree the causation of the effects produced. Jaundice is a symptom which may occur early or late, or may, indeed, be absent, according to which causal factor predominates.

Dosage in relation to quantity and mode of administration of the poison, idiosyncrasy, age, state of health, and the type of poison determine the exact nature of the symptoms produced. Thus, after chloroform administration, arsenobenzol compounds, or gaseous poison such as arseniuretted hydrogen, where a relatively massive dose is rapidly administered and absorbed, the autointoxication consequent on sudden loss of liver function may result in rapidly fatal symptoms in which jaundice is not prominent. With other poisons where the absorption is slow, such as tetrachlorethane and trinitrotoluene, the changes in the liver are gradual and often considerable replacement fibrosis may take place in areas previously occupied by cells which have undergone degeneration and necrosis. Obstructive changes, due to catarrh of the finer bile ducts, occur, and jaundice is consequently a marked feature. Should the patient recover from the threatened symptoms of autointoxication, he may be faced with symptoms of portal obstruction (ascites, etc.) owing to the cirrhotic changes in the damaged liver.

When toxic jaundice occurs it is an indication that some poison has produced a certain pathological change in the liver resulting in an obstructive catarrh. This structural change and its resulting effect—namely, jaundice—remain long after all the causal poison has been excreted from the body. Hence toxicological tests for the causal poison in cases of toxic jaundice may be entirely negative. One finds the serpent's trail by the effects it has produced, but the poison itself has passed from the body.

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paramount importance. Keeping this principle in view, it is evident that the patient who is paralysed in his lower extremities, even if he retains some power in his leg muscles, is handicapped in locomotion by having to carry the weight of his body. If he is placed in a bath this burden is in great part removed, and he can exercise his limbs freely without running the risk of giving them too much to do. This is not the only advantage. The exercise obtained by swimming, or attempts at swimming, exerts a favourable influence on the body metabolism, and, what is quite as important, the realization that he is not so inactive or so disabled as he appeared to be when making his feeble and irksome attempts to walk is a mental stimulus to the patient of the utmost value. Finally, the pleasure obtained from the bath is an inducement to the patient to persevere, and compares very favourably with the tedious routine involved in performing daily exercises against resistance while lying on the flat of his back in bed.

A few months ago a small swimming bath was constructed at the Tooting Special Surgical Military Hospital under the direction of Lieut.-Colonel D. K. McDowell, C.M.G., and has been in continuous use for treating patients suffering from paraplegia, hemiplegia, and other disabilities. The bath is 18 ft. long by 9 ft. broad, and the depth of water approximately 3½ ft. The water is kept at a temperature of 92° to 94° F., and is changed every day. In the case of spinal injuries with paraplegia, the degree of paralysis is no bar to the employment of this treatment, as it is possible for a man, although completely paralysed in his lower extremities, to learn to swim with his arms alone. In the process of learning assistance can be given by an orderly, or still better by the use of "water-wings," which give the patient all necessary support.

It is well known that many paraplegic patients are prevented from making use of the voluntary power they possess by the presence of spasticity, and it is generally agreed that re-education of voluntary power is the best method of overcoming the involuntary spasm. It is not surprising, therefore, to find that practice in swimming in water kept at a comfortable temperature has been of great value in reducing spasticity in several cases.

Speaking generally, the results obtained at the Tooting Military Hospital by this method have been so favourable as to encourage the idea that a swimming bath must become in the future an essential part of the equipment of any hospital which undertakes the treatment of paralysed patients.

As almost every muscle and every joint is exercised in the art of swimming, the treatment can be applied to a number of different conditions in addition to those already mentioned. It would not be too much to expect favourable results from its use in the treatment of stiff joints, and of the many forms of disability which follow wounds and sepsis of the trunk and extremities.

Any therapeutic method which can be carried out by the patient himself, and which removes from his mind the idea that only the efforts of others are necessary for his cure, is deserving of a warm welcome in these days.

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Consulting Physician to the London District

A LARGE HERNIA IN A MALE CHILD.

A SMALL black boy aged about 7 years was brought to the hospital for treatment for a swelling in the scrotum which was said to have existed "for a long time." On the right side of the scrotum was a swelling about 12 inches in circumference extending half-way down the thigh. The swelling was resonant on percussion, and was obviously a hernia; it was irreducible.

It appeared doubtful whether the abdominal cavity would be large enough to contain the contents of such a large hernia, but I resolved to operate. The sac was found to contain, so far as I could ascertain, the whole of the large intestine, from the ileo-caecal valve to the sigmoid flexure, including the appendix and great omentum. With difficulty this mass was reduced into the abdominal cavity, and the opening at the neck of the sac obliterated.

The patient made an uninterrupted recovery, and was discharged with a sound scar which showed no sign of bulging.

NOEL E. WATERFIELD, M.B., B.S.Lond.,
F.R.C.S. Eng.

Port Sudan.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SWIMMING IN THE TREATMENT OF PARALYSIS.

It is sometimes forgotten and at other times never realized that in the treatment of all forms of paralysis the most important factor in success is the co-operation of the patient. He must be taught that no return of voluntary movement is possible unless he exercises his will, and he must be encouraged by every possible means to attempt every day the voluntary movements he has lost. When paralysis is due to disease or injury of the lower motor neurones massage and electrical treatment are necessary to maintain the nutrition of the inactive muscles. In the case of disease or injury of the upper motor neurones, on the other hand, massage and electricity have not the same value, and the voluntary efforts of the patient are of

A SIMPLER METHOD OF MAKING DAKIN'S SOLUTION.

THE following method of making Dakin's solution was worked out by Sergeant Farrar, R.A.M.C., who is in charge of the manufacture of this solution at the Royal Victoria Hospital, Netley. It is a simplified form of that adopted by Dr. Daufresne of the Carrel Institute. I can vouch for the great accuracy of the method, and think it should be widely known amongst those who use the Carrel-Dakin treatment of wounds. I should add that Dr. H. D. Dakin has expressed his approval of this modification.

The quantities required to make about 10 litres of solution are:

Chlorinated lime, between 140 and 180 grams (say 155 grams).

Sodium carbonate (anhydrous), half the above quantity.

Sodium bicarbonate, five-twelfths of the above quantity.

(N.B.—The actual quantities are more or less immaterial, provided they be used in the proportion 12:6:5. The only difference is the quantity, but not the quality, of the fluid produced.)

The chlorinated lime is dissolved in 5 litres of water, stirred frequently, and allowed to stand for six to twelve hours; 10 c.cm. of this solution are then taken, 20 c.cm. of 10 per cent. potassium iodide solution, and 2 c.cm. of strong CH_3COOH added, and the whole titrated against a decinormal solution of $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$. If this burette reading is r c.cm. the remaining two ingredients are dissolved in $\frac{7r-90}{18}$ litres of water,

then mixed with the initial solution, and allowed to stand for one hour. The supernatant liquid is siphoned off and filtered; the filtered product being Dakin's fluid of required strength, and showing no trace of free alkali.

The method has the following advantages:

1. The time of preparation is reduced by one-half.
2. Except where the preparation of the standard solutions for testing is also undertaken, no sensitive chemical balance is necessary.
3. Instead of preparing a separate sample of $\text{CaO}(\text{Cl})\text{Cl}$ for the purpose of ascertaining the percentage of active chlorine, the liquid in bulk is itself tested. Taking the actual liquid in place of a small separately prepared sample is not only quicker, but eliminates the chance of errors.
4. The unhealthy and unpleasant practice of having to powder the chlorinated lime before taking representative samples from different portions is rendered unnecessary.

H. L. ATTWATER, M.Ch., F.R.C.S.,
Captain R.A.M.C.

Reports of Societies.

CARCINOMA OF THE APPENDIX.

At a meeting of the Section of Surgery of the Royal Society of Medicine, held on May 7th, the President, Sir JOHN BRAND SUTTON, being in the chair, Mr. J. E. ADAMS read a paper on carcinoma of the appendix, in which he pointed out the rarity of the condition, though American authors had stated that microscopical sections of large numbers of appendices examined as a routine practice had proved its occurrence in between 0.4 and 0.5 per cent. of the cases where operations had been performed for attacks of appendicitis. He could only trace four cases in the last seventeen years at St. Thomas's Hospital, during which period over 7,000 appendicectomies must have been performed. He gave details of the condition, for many of which he was indebted to the comprehensive article in Deaver's book. Spheroidal-celled carcinoma was by far the commonest type encountered in cases of cancer of the appendix occurring in young subjects. Numerous cases were recorded in which the condition occurred before puberty, one case occurring in a child only 7 days old. The vast majority of cases of cancer of the appendix belonged to the spheroidal-celled or basal-celled type. If columnar-celled cancer was found, the average age was about 50, which accorded with the incidence of columnar-celled carcinoma in other parts of the intestinal tract. The disease affected the distal portion of the appendix most frequently, the tip being particularly liable to attack. The type was characterized by slowness of growth, absence of early metastases and rarity of recurrence after removal, cure usually following appendicectomy alone. Mr. Adams then gave an account of the four St. Thomas's cases which had been reported by his colleagues. In the case recorded by Cullingworth and Corner the patient, a woman of 33, was in good health three years after

the operation. This was a spheroidal-celled carcinoma, the tip of the appendix being bulbous, whilst the lumen was obliterated by the growth, which was hard, but appeared caseous on section, arousing a suspicion of tuberculosis. Battle's case was that of a female, aged 14 years, where the appendix was removed after six attacks occurring at short intervals. The tip was bulbous, solid with growth, and with a stricture in the lumen of the bowel in the proximal half. The growth was the spheroidal type, and showed an extreme invasion of the muscular coat. The patient was now married, was in perfect health, and had one child, aged 5. In Sargent's case, reported in 1905, the appendix was enlarged and caseous on section, and a preliminary diagnosis of tuberculosis was made, but microscopical examination revealed the structure of an endothelioma. The child made a perfect recovery, but no information could be obtained as to the present condition. His own case was in all essential points similar to that recorded by Battle. The patient was a girl of 12, rather thin and nervous, with a history of bilious attacks for some years. In November, 1918, he was consulted about the illness from which the child was then suffering, and made a diagnosis of appendicitis owing to the location of pain and tenderness in the right iliac fossa. Abdominal pain on previous occasions had not been referred to this region. At operation the appendix was enlarged and bulbous near its distal portion for three-quarters of an inch. The proximal part was healthy and empty. The condition was taken for tuberculosis, as the lumen was obliterated and the mass was yellowish-white on section. Microscopically the growth was spheroidal-celled carcinoma, with extreme invasion of the muscular coat and no clear evidence that it originated in the mucosa. Appendicectomy alone was performed and no further surgical treatment was advised, and the child was now perfectly well.

Mr. Adams thought that if vermiform appendices were all submitted to microscopical examination after removal, the percentages of these cases of carcinoma would be found to be higher than at present appeared, but would hardly reach the high figure of 0.5 per cent. given by some American authors.

In the course of the discussion Sir HUMPHRY ROLLESTON said that in 1906 Mr. Lawrence Jones and he analysed 42 cases of primary malignant disease of the vermiform appendix, 37 of which (88 per cent.) were described as carcinoma. A distinction should be drawn between (a) the columnar-celled growths which probably were derived from the caecum and were clinically malignant, and (b) the small spheroidal or polyhedral celled growths, which were the characteristic form in the appendix, and though carcinomatous from the microscopical point of view, were not malignant clinically. Both structurally and prognostically this form of appendix carcinoma resembled the group of cases of multiple primary carcinomas of the small intestine described by Bunting, and also the basal-celled tumours of Krompecher, of which multiple growths had been recorded in the scalp. He knew of four examples of primary carcinoma of the vermiform appendix that had been detected microscopically in the routine examination of appendices at St. George's Hospital. In the first, published in 1900, the patient had some little time later abdominal symptoms, suggesting a recurrence, but was quite well in 1905. In answer to a question by Mr. Adams, he said that these four cases recurred out of a total of under 1,000.

At a meeting of the London Association of the Medical Women's Federation, held at 11, Chandos Street, on May 6th, with the president, Lady Barrett, in the chair, Dr. D. A. Stepney gave an interesting account of her two and a half years' experience in Russia during the war. She said that she went out to take charge of a hospital for refugee women and children provided by the National Union of Women's Suffrage Societies. As the war conditions altered the English nurses were sent home, and the municipality of the town (Kazan) took over the hospital, asking Dr. Stepney to continue her work in it with a Russian staff. She then described the changes caused by the revolution, the entry of Trotsky with his army into the town, and the fighting which took place there between the Czecho-Slovaks and Bolsheviks. A general massacre was feared, and 40,000 people left the town in one night. After some time, and with many adventures and great privations, Dr. Stepney reached Finland, and so returned to England in December, 1918.

Reviews.

THE TRIUMPHS OF THE MEDICAL SERVICES.

To appreciate aright Dr. Woods HUTCHINSON's book upon *The Doctor in War*¹ two conditions must be kept in mind—namely, that it was compiled primarily for American consumption, and that the individual chapters were contributed to the daily and weekly press. It is a whole-hearted effort to make plain to those across the Atlantic the noble work accomplished by the Army Medical Services of the Allies in the first place, and, incidentally only, of the United States, by one who in the States occupies a position of peculiar influence. There is there no better known lecturer and writer upon matters medical for the general public than the author, no one with the same rare gift of discussing the outcome of medical research in a manner that is at the same time arresting and authoritative.

We gather from a criticism which appeared in one of our contemporaries that these conditions have not been realized by all readers. Complaint was made that this book is too enthusiastic, too *couleur de rose*, that it does not call attention to those directions in which the medical service is still in need of improvement. This criticism strikes us being a little ungracious. To refer to these aspects would be fitting in a series of articles contributed to a professional journal, or in a work which claimed to review the activities of any particular medical service: this book belongs to neither of these categories. Written as it is for the general public, it fulfils its purpose in laying emphasis upon the marvellous advance in preventive medicine and in the care of the wounded and the sick that has characterized the war. The pity is that to no English writer was given like opportunity to study with equal leisure and thoroughness and access to the official heads and official data the medical activities on the various fronts. The greatest victory of the war has been that accomplished by the army medical services of the Allies; the successive steps of that victory should be known to all as an object lesson in what can be achieved by concerted action, and what may be achieved, not for the army only, but for the community at large, by like co-operation in times of peace. If we have failed in the matter, we should be the more grateful to Dr. Woods Hutchinson that he has not; it is consoling to think that if he is not of us he has intimate affiliations with us, and that, as he states, he strove to enter the R.A.M.C. early in the war.

He pictures the state of affairs so vividly that the temptation is great to quote one striking sentence after another. The book is a storehouse of information not easily obtainable elsewhere. Herein lies our one regret, that rarely are chapter and verse given for the sources of that information. We do not expect such in popular articles contributed to the newspaper press. All the same their absence detracts greatly from the value of the book as a work of reference; we would suggest that in a future edition these be supplied, along with footnotes giving the exact figures upon which the author bases his striking generalizations. The book deserves a wide popularity among medical men and laymen alike.

WORD BLINDNESS.

WE are so accustomed to colour blindness and tone deafness that the extraordinarily freakish nature of these defects scarcely strikes our minds. But there is another and very similar defect known as word blindness. There are people with good eyes; they see, but their brains do not perceive what they see. The condition of word blindness was first recognized as a clinical symptom accompanied by other signs of aphasia in cerebral disease by Sir William Broadbent in 1872; later, Knusmaul found it as an isolated clinical symptom, and gave the name to the phenomenon. The occurrence of the defect as a congenital condition was first noted by Dr. Pringle Morgan in the *BRITISH MEDICAL JOURNAL* in 1896, and since that date its nature has been worked out in detail and very largely by Dr. JAMES

HINSHELWOOD, the author of *Congenital Word Blindness*.² In this book he furnishes a careful comparison of the symptoms found in the acquired and congenital conditions, and an exhaustive inquiry as to the cerebral lesion causing the defect. This inquiry is based upon a very complete knowledge of a case wherein the defect was acquired; the whole history of the patient was most carefully recorded, and on his death the condition of the brain was examined by an expert neurologist. The case was that of an intelligent teacher of languages who found one morning that he could not read the French exercises of his pupils. He had lost all power of reading, even large letters meant nothing to him, yet he could read the smallest figures with ease. The man died ten years later, and the *post-mortem* examination revealed a definite lesion of the occipital lobe of the left side. This anatomical proof of the cerebral basis of the defect is well set out in the book, and it forms the pivot of the understanding of the congenital form of defect. The author gives a most illuminating account of word blindness as found in children and the best means of overcoming the serious educational difficulties which it entails. There is an excellent bibliography of the literature of the subject. The book will be greatly appreciated by eye surgeons and school medical officers.

HYPNOTIC THERAPEUTICS.

THE author of *Hypnotic Suggestion and Psychotherapeutics*³ possesses that optimistic confidence which is the first requisite of a successful hypnotist. Dr. BETTS TAPLIN's description of methods and results is derived from his own wide experience, and is to be valued accordingly, but when he ventures further his confidence fails to carry conviction. A short chapter on complex formation contains much that is new; that a complex should be made up of feelings, ideas, emotions, movements, visceral functions, brain centres, and neurons is a departure in psycho-physiology the novelty of which does not seem to be apparent to the writer. He speaks of "the so-called moods which are apt to occupy the field of consciousness to the exclusion of everything else," and assumes that such moods may be within normal limits, though one can only picture the conditions as being at least temporary insanities. The chapter ends with a bold but unconvincing statement that "A complex, then, whether normal or abnormal, is the result of education, and it therefore follows that what has been done by education can be undone by the same method."

The inclusion of "anger and some other emotional stages" among the phenomena of normal dissociation does not add to the clearness of the chapter on this rather difficult subject, and we are perplexed by a paragraph which reads: "It need hardly be said that the secondary effects of dissociated hysterical stigmata, etc., are but the products of the normal functioning of the mutilated and dissociated fragments of personality." Faint praise is given to psycho-analysis; and a case is quoted, without a reference, in which the patient, suffering from a stammer and anxiety symptoms, was cured by being made to talk about a terrifying war experience and regard it in the proper light. The author thinks this case "might have been cured more rapidly and completely by a simple course of suggestive treatment," yet he repeatedly emphasizes the need to explore the causes of symptoms, and gives as an instance of this need a case of aphonia in which the real cause was a feeling of pain on speaking; to accept such a "cause" shows a limited conception of the genesis of neurotic symptoms.

The author does useful service in pointing out the value of hypnotic treatment in asthma and exophthalmic goitre, though he is over-confident in his assertion that there can be no suspicion of any hidden complex as the cause of the trouble. The therapeutic range of hypnotic suggestion is indicated in this book, but, although considerable use is made of the nomenclature of modern psychology, the exposition of psychological principles is neither lucid nor accurate.

² *Congenital Word Blindness*. By James Hinshelwood, M.A., M.D. London: H. K. Lewis. 1917. (Cr. 8vo, pp. 112, 4s. net.)

³ *Hypnotic Suggestion and Psychotherapeutics*. By A. Betts Taplin, L.R.C.P., and L.M.Edin. Liverpool: Littlebury Bros.; London: Simpkin, Marshall, Hamilton, Kent, and Co. 1918. (Crown 8vo, pp. vi + 166. 10s. 6d. net.)

¹ *The Doctor in War*. By Woods Hutchinson, M.A., M.D. London: Cassell and Co., Ltd. 1919. (Post 8vo, pp. xii + 304; 8 plates. 7s. 6d. net.)

NOTES ON BOOKS.

*Neurological Clinics*⁴ is a collection of clinical case-notes of a variety of nervous and mental diseases, with a description in each case of the manner in which the diagnosis was reached. The preface states that the difficulties of the general practitioner have been chiefly considered in the selection of the types of disease, and that examples have been chosen of cases he is most likely to encounter. In view of this statement, we think that the volume should have included a chapter on such diseases as tabes dorsalis and peripheral neuritis, either in addition to, or in substitution for, those on hydromyelia, hydrocephalus, and paramyoclonus multiplex. We notice a looseness of expression here and there which detracts from the general value of the book. For instance, on page 38 it is said that "lumbar puncture was performed, and the fluid found to be negative." Again, on page 89 we read that "his serology was positive throughout, with 160 cells in the cerebro-spinal fluid." Presumably this means 160 cells per c.mm.; but in the following chapter, which is contributed by the same author, on page 95, the cerebro-spinal fluid (of a different case) is said to have "contained 85 cells to the centimetre." The book is well produced; the descriptions of the cases are clearly written, and should prove of value to those who possess a previous knowledge of elementary neurology.

The experience which Mr. HUTTON has gained in dealing with the thousands of workers in the several Vickers's establishments has enabled him to set out in *Welfare and Housing*⁵ the principles of the proper equipment of the workshops as regards air, light, ventilation, and sanitation. He describes the housing accommodations—temporary as well as permanent—for single individuals, male and female, as well as families. He enters minutely into the subject of catering, and states that canteens have been well managed. He describes the arrangements for dealing with accidents and diseases—trained nurses attending at once to minor complaints, more serious cases being treated by the surgeons who attend the workshops. Rest rooms are provided, and amusements are not forgotten—performances of a superior kind which are periodically provided. The book is clearly written, and should prove very useful to those who are engaged in similar enterprises.

In *Hygiene of the Eye*,⁶ Dr. POSEY of Philadelphia has written a book that contains much that is useful and good. The work is essentially one for popular reading and should not be placed in the hands of a medical student as a textbook of diseases of the eye; it does not aspire to be a textbook; the motif running through the whole is the conservation of sight. Especially to be commended are the chapters on illumination, industrial accidents to the eye, and the education and training of the blind, while that on conjunctival diseases, dealing as it does mainly with the dangers of ophthalmia neonatorum and trachoma, is excellent. The earlier chapters, which treat of the anatomy of the eye and of elementary optics and errors of refraction, are rather too sketchy to be of real service. The illustrations on the whole are very good, though some of them might have been eliminated without loss. The paper, printing, and general get up of the book leave nothing to be desired.

⁴ *Neurological Clinics*. Edited by J. Collins, M.D. New York: Paul B. Hoeber, 1918. (Med. 8vo, pp. 271; 3 plates. 3 dols. net.)

⁵ *Welfare and Housing*. A Practical Record of War Time Management. By J. E. Hutton. London: Longmans, Green and Co. 1918. (Post 8vo, pp. viii + 192; 12 photographs, 2 plans. 5s. net.)

⁶ *Hygiene of the Eye*. By W. Campbell Posey, M.D. Philadelphia and London: J. B. Lippincott Company. 1918. (Med. 8vo, pp. x + 344; 118 figures. 18s. net.)

MEDICAL AND SURGICAL APPLIANCES.

A Simple Airway.

DR. CHARLES CORFIELD (Clifton, Bristol) writes: I have for two years or more used in anaesthetic work an airway made of a large sized drainage tube. The piece chosen should have a slight curve, and should be about five inches long. One end is cut aslant, so that when introduced into the pharynx the lower opening is horizontal. Through the other or mouth end I insert a large safety pin. This fulfils two purposes: it prevents the tube slipping into the mouth, and, secondly, if it is inserted at right angles to the obliquely cut opening of the lower end it will also indicate the proper angle to keep it at. The advantage of this airway over Hewitt's is that it can be introduced more easily, it can be improvised almost on any occasion, it is more ductile, and it is also longer. The last point is of considerable importance. It can, too, be sterilized indefinitely. The advantage of Hewitt's, of course, is that it has a metal mouth-piece, which is useful in holding the teeth apart in spasm, whereas a soft tube would be occluded. However, this condition is often the result of a vicious circle, and I have generally found that by passing this tube with the aid of a gag or a wedge the spasm soon subsides, and so a metal mouth-end is not really essential.

THE DOGS' PROTECTION BILL.

DEPUTATION TO THE HOME OFFICE.

A DEPUTATION of Fellows of the Royal Society of Medicine, headed by Sir Humphry Rolleston, the President, attended at the Home Office on May 9th, and lodged a protest with Sir Hamar Greenwood, Parliamentary Secretary to the Home Office, against the Dogs' Protection Bill. With Sir Hamar Greenwood were Major Waddorf Astor (Parliamentary Secretary to the Local Government Board, and Chairman of the Medical Research Committee), Sir M. Delevingne and Sir G. Thane (Home Office), and Sir Robert Morant (Insurance Commission). The members of the deputation were introduced by Sir WATSON CHEYNE, Bt., M.P.

Sir WILLIAM WHITLA, M.P., said that for a number of experiments and researches the dog was indispensable. He instanced the elucidation of problems connected with digestion, many complicated heart problems, and the problem of tuberculosis. Some years ago it was discovered that the blood of the dog was highly antagonistic to the tuberculous virus or microbe, and that the serum of dog's blood had a curative value. A vast amount of experiment preceded all medical discoveries; for instance, the term "606," betokened the number of experiments which had been necessary to arrive at the substance. The present restrictions were so great as to be most discouraging to young men, and every concession the Government made to agitation prejudiced the position of scientific experimenters yet more.

Sir GEORGE MAKINS, after referring to the resolution which the Council of the Royal College of Surgeons had passed on the subject (see page 628), said that during the years in which he had been teaching and practising surgery there had been a very general change in the trend of thought with regard to surgical science; practice was being founded less and less upon any form of empiricism, and more upon rational data which in large part had been forthcoming as a result of experiments on animals. There were very strong reasons why the dog should be used. In the first place, there was an ample supply of dogs. A large number of dogs were now being destroyed in order to get them out of the way in a manner no more humane than that of the laboratory. The dog was suitable with regard to its size and the character of its tissues. Experiments did not entail suffering. They had to be performed with a particular technique, and if wounds were permitted to become infected the experiment was spoiled; in the absence of infection the wounds were not painful. Vascular surgery was founded entirely upon experiments on dogs. The technique of such an experiment as transfusion of blood had been perfected as a result of experiments on dogs. Experiments on dogs had furnished the knowledge that in place of destroying or obliterating an artery when wounded it was possible to repair it. They had shown also that an organ might be removed from an animal and an organ from another animal put in its place. All these were things from which it was possible to predict future fruit. It seemed extraordinary that at a time when the whole nation had suddenly awakened to the fact that success in war or in industry was bound up with experimental research a few people who were unable to appreciate the importance of experiments on vital processes should be so far successful in their attempts to hinder the advance of science in matters of life and death to the human race. He regarded the dog as doubly protected, for, in the first place, operations had to be performed in the most careful manner or they were useless, and, in the second, any abuses were already prevented by legislation. In reply to Sir Hamar Greenwood, he added that, taking it all round, he did not find fault with the restrictions already imposed in the case of dogs.

Sir WILLIAM OSLER said that this bill was a test case—not for the dog, nor for the medical profession, but for the intelligence of the House of Commons. If there was one thing more certain than another in the history of the science of medicine, it was that experiment had brought it to its present position, and if the experimental work which had been done from Harvey onwards were examined it would be found that four-fifths of it had been done on the dog. When a student in Berlin in 1873 he saw in a small laboratory a most interesting series of fundamental experiments on the localization of brain function. These experiments were made upon dogs; it was not until later

that monkeys were procured and worked upon by Horsley and others. In 1889 he saw in America a man who had had for five or six years recurring convulsions of a very serious character, and as a direct result of that early work on the dog King removed a tumour from that man's brain, and the man lived for thirty years. There were now hundreds of people alive and well and comfortable from whom brain tumours and spinal cord tumours had been satisfactorily removed simply because of early canine experiment. No young surgeon could grow to his full measure unless he was an experimental surgeon and in his own career had opportunities of doing experimental work.

Professor E. H. STARLING, F.R.S., confined himself to the question why dogs rather than other animals should be used in certain classes of experiment. The researches had to be made in big towns, in laboratories attached to medical schools, where the animals used must be animals which could be kept within the precincts. Farm animals, therefore, were excluded. Small animals, such as the mouse, rat, and guinea-pig, were used for inoculations where it was merely a case of survival or death. Rabbits were used for this purpose also, and to a slight extent for higher experiments. Monkeys were only obtainable in small numbers, and their use was confined to cases in which a higher development of the nervous system than possessed by the dog was necessary. There only remained the dog and the cat, and, in spite of any popular prejudice against the use of dogs, it was essential for the progress of medicine and surgery that these animals should be used. The dog was more appropriate than the cat in respect to size and the general character of the tissues. A number of experiments could not usefully be performed on the cat, and required an animal of the size and solid build of the dog. For the whole of our knowledge of dropsy and its production, we were dependent upon experiments on the main lymphatic duct of the dog. As to the heart, the knowledge of what was going on in each cavity at each instant could not be investigated upon any animal smaller than the dog. Yet further, it was important to remember that the dog was no longer a purely carnivorous animal. The result was that the dog could be used for experiment on the processes of digestion, the chemistry of the body, and the abnormalities which might lead to the production of such a disease as diabetes. Professor Starling concluded by saying that medical research would be practically killed in this country if the dog was eliminated from experiment.

Major ASTOR, who had to leave the meeting at this point, said that he was entirely in agreement with the views put forward. The Government took a wise step some years ago when it definitely allocated money for scientific research, and he need not describe the excellent work carried out by the Medical Research Committee. He believed it would be a real national loss if the bill as now drafted were to go through. It must involve an unnecessary continuation of pain, disease, and death among men, women, and children.

Miss ALDRICH-BLAKE, Dean of the London School of Medical Women, said that none of them desired cruelty, which in her definition was the infliction of pain for no reasonable end. Many intestinal operations, and all operations on the vascular system, had first been carried out on dogs, and without such experiments the lives of many human beings would have been sacrificed.

Mr. E. B. TURNER, speaking as a medical practitioner who had never taken part in or seen an animal experiment, said that it was his business to translate into general practice the results of animal research. If he were to put forward the cases in which his diagnosis had been facilitated and made accurate, and the advice he had given as to treatment and the results of that treatment made certain by experiments on dogs, he believed that that alone would cause the House of Commons to throw out the measure. It was these experiments which took medicine out of the realm of empiricism, and made it scientific. The amount of accurate work done by physicians and surgeons would be most materially reduced had it not been possible to make use of the dog, and he spoke as a lifelong dog-lover.

Sir BERTRAND DAWSON added a few words by way of emphasis. If the bill were passed, he said, it would mean that research was killed and consequently the intellectual standard of the medical profession would suffer.

Sir HAMAR GREENWOOD, in reply, said that any one who supported the Dogs' Bill of Sir Frederick Banbury or the

wider bill abolishing vivisection which was now on the order paper of the House of Commons, assumed an attitude towards humanity that he could not understand. The Home Office and the Government opposed the bill and would do their utmost to prevent the coming into force of a measure which would stop research. The bill was a "hardy annual," but Sir Frederick, on a quiet Friday afternoon, got it through its second reading without discussion. It was now back in the House of Commons on the report stage. On behalf of the Home Office and the Government, he had put down an amendment for May 23rd which eliminated certain words, and added others to the effect that whenever an applicant wished to experiment on a dog he must state on his application that the object of his experiment would be frustrated unless it were performed on a dog, and that no other animal was available for the purpose. This would really put dogs in the same position as horses now occupied under the law. In the House of Commons there were several medical men who had been of great assistance to the Home Office, in showing that the passage of this bill would militate against research, and he hoped Sir Watson Cheyne and his colleagues would all be there on May 23rd. He hoped also that they would see that members of Parliament who had no personal knowledge of what this measure would entail were informed by the practitioners in their constituencies. He wished he possessed the eloquence and knowledge of many of the speakers who had lifted the veil upon the romance of surgery.

Sir WILLIAM OSLER said that he would prefer to meet the bill with a straight negative. The effect of the amendment was to impose an additional and unnecessary restriction. Sir HAMAR GREENWOOD said that the amendment was intended to make for further supervision rather than further restriction, and Sir WATSON CHEYNE said that as a matter of policy it would be well to accept the amendment.

Sir HUMPHRY ROLLESTON expressed the thanks of those present to Sir Hamar Greenwood, and the deputation withdrew.

LEAGUE OF RED CROSS SOCIETIES.

The Committee of Red Cross Societies issued on May 6th, through Reuter, the following announcement:

There was organized in Paris to-day a League of Red Cross Societies founded by the Red Cross Societies of the United States, Great Britain, France, Italy, and Japan, who will invite other Red Cross Societies into membership. It is expected that the League of Red Cross Societies will establish intimate relations with the League of Nations and with the various Governments of the world, but it is important that it should be understood that the League is a purely voluntary organization, is non-political, non-governmental, and non-sectarian, and therefore has no statutory connexions with the League of Nations or with any Government.

The objects of the League of Red Cross Societies, as formally set forth in its Articles of Association, are:

1. To encourage and promote in every country in the world a voluntary national Red Cross organization for the improvement of health, prevention of disease, and mitigation of suffering throughout the world.

2. To promote the welfare of mankind by furnishing a medium for bringing within the reach of all peoples the benefits to be derived from present known facts and new contributions to science and medical knowledge and their application.

3. To furnish a medium for co-ordinating relief work in case of great national or international disaster.

The Board of Governors, which held its first meeting to-day, consists of Mr. Henry P. Davidson, of the American Red Cross; Sir Arthur Stanley, of the British Red Cross; the Comte de Kergorlay, of the French Red Cross; Count Frascara, of the Italian Red Cross; and Professor Ninagawa, of the Japanese Red Cross. This Board will appoint additional members, and all will hold office until the General Council is convened.

THE United States Army Medical Museum at Washington is making a collection of mosquitos representing all the species found at camps and posts where troops are stationed. Collections are to be made at each station at least twice a week at three periods during the twenty-four hours in order to determine the time when the insects are most prevalent in each locality.

British Medical Journal.

SATURDAY, MAY 17TH, 1919.

THE RED CROSS IN PEACE.

THE result of the varied proceedings of the conference of Red Cross societies last month in Cannes has been the formation of a League of Red Cross Societies by the national societies of the United States, Great Britain, France, Italy, and Japan. Its affairs will be managed by a council and a board of governors, which will have authority to invite Red Cross societies of other nations to join. The official announcement, reproduced at p. 614, lays emphasis on the statement that the League is a purely voluntary organization; its organization by Red Cross societies really implied as much, since these societies are voluntary organizations for giving aid to the sick and wounded in war, which under the Geneva Convention enjoy a certain degree of international recognition. Hitherto Red Cross societies have come into action only on the outbreak of war, though the several national societies have maintained a skeleton organization in peace, and have used their resources to experiment with new plans and devices for succouring the sick and wounded in war, and for the training and organization of volunteer workers with a view to their use in war.

The Red Cross movement owes its origin to Henri Dunant, a Swiss, who was distressed by what he saw on the battlefield of Solferino in 1859. He entered upon a mission, which took him to many countries, and owing to his eloquent and persistent effort which had the official support of Napoleon III, a conference, attended by representatives of most of the European states, was held in Geneva in the autumn of 1863. International Red Cross congresses have been held at irregular intervals since, the last in Vienna very shortly before the war. It has, however, been the International Red Cross Committee in Switzerland which, by its permanence, has given continuity to the international relations of Red Cross societies. On the outbreak of war in 1914, when the nations of Europe gasped astonished at the hugeness of the catastrophe, the International Red Cross Committee kept its head, realized the limitations which the gigantic scale of the war imposed on it, and, quickly grasping the dire possibilities of the situation, gave direction to the generous impulses of the Swiss people. It accomplished marvels in diminishing the misery and sufferings of prisoners, and the hardships of the inhabitants deported from Belgium and France. It will, we hope, continue its work for the international Red Cross societies.

The League now formed in Paris has a different object; it is a distinct body concerned not with military but with civil work. The brief summary of the proceedings at Cannes, which alone has been available, rather gave the impression that an attempt might be made to dictate in matters which can only be dealt with by national legislatures acting under medical inspiration, but the official statement of the objects of the League is wisely expressed in general terms. It proposes to promote in all countries voluntary Red Cross organization for the improvement of health and the prevention of disease, and to disseminate information as to the progress of science and

medical knowledge in their application to these purposes. This desire to disseminate knowledge appears to us to be all to the good; in no department of government is it more important to keep public opinion abreast, or a little ahead, of administration than in matters of health, which so quickly come home to men's business and bosoms; and here certainly the masculine includes the feminine gender. The best of Ministries of Health will always be the better for the stimulus of public opinion; it will sometimes welcome, and on occasion, in order to persuade the legislature or overawe the Treasury, will even invite its vigorous expression. It is not too much to say that Parliament has never legislated in health matters except in response to an urgent extra-parliamentary demand. The demand has invariably been created by the persistent efforts of reformers, of whom the majority have been members of the medical profession, and practically all the facts and arguments have been supplied by the advances of medical science.

The Red Cross societies in war serve as the willing assistants of the official military organization, and afford the public an opportunity of giving help in money and service. In a similar way we expect the League of Red Cross Societies will desire to help as a stimulator of official action. But there are two directions, which seem to be indicated in the official statement of its objects, in regard to which it may at once with advantage get to work. In the first clause reference is made to the mitigation of suffering. The phrase calls to mind the suffering experienced and the lives sacrificed at the present time by the want in most rural districts of any organization for transporting injured and sick persons to hospital for treatment. We have already announced that the Joint War Committee of the British Red Cross Society and Order of St. John is putting into force a scheme for utilizing in the rural districts of Great Britain and Ireland the ambulance cars which the Committee has had in use for transporting the sick and wounded in France. A circular letter has been issued to the director of each county, asking him to state whether such ambulances could be used in the county, and to indicate the places where they should be stationed. The replies already received from many counties show that the scheme meets with much approval. The Joint War Committee will supply the cars in running order and will arrange to keep a stock of spare parts, but the counties will undertake to bear the running expenses, including the provision of drivers. Communications we have received from medical men in rural districts leave no doubt that the scheme, which is to be tested at first for one year, will be welcomed by them, will relieve some of their anxieties, and be of great benefit to their patients. The other part of the League's scheme is more ambitious in its scope, but if the conditions to be imposed are carefully observed it ought to render valuable services. It is proposed that the League should co-ordinate relief work in cases of great national or international disaster. At present there is in this country no organization for bringing voluntary aid to a stricken district if a disaster occurs with which it is altogether beyond the powers of local resources to cope. We do not pretend to say how the measures to meet this need should be organized, but we have no doubt the need exists, and are confident that a study of the subject will make it possible to work out a plan to meet it.

THE DOGS' PROTECTION BILL.

On another page will be found a report of the proceedings at the deputation of Fellows of the Royal Society of Medicine which, on May 9th, put before Sir Hamar Greenwood, M.P., the Parliamentary Secretary to the Home Office, the views of the medical profession on the evil results which must follow the enactment of the "Dogs' Protection Bill." It is satisfactory to note that Major Waldorf Astor and Sir Robert Morant were present with Sir Hamar Greenwood to receive the deputation; their presence indicates that the vital interest of the future Ministry of Health, in legislation which would obstruct medical research, is fully realized. The fact that the spokesmen of the deputation were drawn from a wide range of medical practice and activity must have carried conviction, if conviction were necessary, that the profession is united in opposition to the bill and in realization of the disaster to medicine and surgery in this country which its passage would entail. There was no uncertainty about the statements; from the point of view of the physician, the surgeon, the physiologist, and the general practitioner, it was made clear that a prohibition of experiments on dogs would kill research, stop progress, and lower the standard of medical and surgical practice in this country.

Major Astor, who was able to speak from his experience as chairman of the Medical Research Committee, expressed in no uncertain terms his unqualified agreement with the views put forward by the deputation. The reply of Sir Hamar Greenwood showed that he had given close attention to the matter and realized the convincing force of the facts and arguments that have been placed before him. On behalf of the Government, he said that it was intended to press the passage of the amendment he introduced when the bill was last before the House. With this amendment the effect of the bill would be to impose another piece of apparatus in the machinery of control where experiments on dogs are concerned. It may still be frankly regretted that the Government did not intervene at an earlier stage with direct and official opposition to a bill which is admittedly unnecessary in any form and purely mischievous. As things are, it seems to be the opinion of the medical members of Parliament, as expressed by Sir Watson Cheyne, that the Home Office amendment should be accepted. If it were reasonably interpreted in working it would, indeed, do no more than add one more to the inconveniences to which, under the present Act, the experimental worker has become accustomed. As a concession to ignorant agitation it is objectionable, and in the hands of unsympathetic or ignorant administration it might conceivably be made a dangerous weapon of obstruction. We would gladly see the bill rejected even if the amendment is passed, but the main thing is to ensure that the bill has no chance of passing unamended.

We would again lay emphasis on the duty of every medical practitioner to enlighten the member of Parliament for his constituency, who probably has no personal knowledge of what this measure would entail, and is receiving from the various societies which exist to obstruct the advance of medicine the usual distorted statements these organizations are in the habit of circulating. The debate on report is to be resumed in the House of Commons on Friday next, May 23rd, when it will have the first place, so that the fate of the bill will then be decided.

CONDITIONS OF SERVICE AND EXTENSIONS OF SERVICE.

THE Insurance Acts Committee is about to issue to all medical practitioners of Great Britain its third report on the revision of the conditions of service and possible extensions of service, which, like its predecessors, arises out of discussions between a special subcommittee and the Insurance Commissioners preparatory to revision of the arrangements under the Insurance Acts. The first report dealt with the method of calculating the central pool and its distribution among areas, and the second with the constitution and distribution of a mileage fund for rural practitioners; the third (M.25) takes up questions of a wider nature; but, although the suggestions it contains arise from free interchange of ideas between those who took part in the discussions and are published with their consent, neither the profession nor the Government is committed to acceptance of the suggestions. The third report is long, its various parts are closely interrelated, and a brief outline of the topics discussed will indicate the need for careful study of the whole. It is pointed out that both the central pool and the local medical fund for each area must be so constituted as to yield the sum necessary at the agreed rate to pay the doctors of each area in full in respect of all their liabilities, and that any fees for additional services must likewise be adequate. But what constitutes adequate payment, or what should be the agreed rate, can, it is thought, most usefully be discussed when the nature and conditions of the services to be rendered have been settled, and the Government has made up its mind how far it will go in providing them. The principles, methods, and conditions under which the distribution of the central pool should, it is considered, be made within the various areas, are, in brief, the encouragement of an efficient service, simplicity and promptitude, equality between doctor and doctor, and local flexibility. It is the Committee's view that while the conditions of service should not preclude the adoption of any one of the three main systems—"capitation," "attendance," and "case"—in a particular area, attention should be mainly fixed on the capitation system, under which payment is measured by the number of persons for whose care the doctor has agreed to be responsible. Consideration is then given to distribution of the pool, as it is and as it might be carried out under this system; and the problems of temporary residents, limitation of lists, and special services are discussed. The next section deals with the evidence of title to medical benefit on the part of insured persons, with the keeping of lists of those so entitled, and with the provision of emergency treatment in the absence of proof of title. An account is given of changes in the arrangements which might make free choice of doctor more effective than at present, and a complete issue of fresh medical cards when any revised arrangements come into operation is deprecated. The section on the drug fund deals with the possible abolition of the "floating 6d." as such, investigation of cases of extravagant prescribing, emergency drugs and dressings, and the supply of drugs in rural areas. The ordering of proprietary medicines, together with the definition of such preparations, is regarded by the Committee as a matter that should be dealt with by the medical consultative council of the Ministry of Health. A long section is devoted to range of service, both with regard to the existing limitations and to the directions in which improvement should be sought. The difficulties in the way of defining the range are indicated, and suggestions are made for overcoming them. In discussing means for securing an adequate service within the range indicated, it is pointed out that general inadequacy in an area, or part of an area, may be due to insufficient supply, or imperfect use of "doctor power." Where a shortage exists a reasonable opportunity should be given to practitioners already practising in the area to make

arrangements for getting additional help, and so obviate the need for doctors to be imported by the Insurance Committee acting directly; the principle of co-operation by practitioners for grouped practice is favoured by the Committee. In a short section on records, reports, and certificates several suggestions are made. The two following sections deal with the agreement for service, its form and determination, and the procedure in cases of alleged breach of agreement. The alleged one-sided nature of the present agreement is discussed from various points of view. The section on additional services is supplementary to a memorandum accompanying the report, which records five discussions between representatives of the Insurance Acts Committee and the Commissioners, together with a number of physicians and surgeons and of other practitioners representing various types of experience. The method by which, and the conditions under which any extensions of the medical service are brought about are of great importance from the professional point of view, and the Committee records its opinion in the form of eight propositions. The main points for and against the establishment of "general practitioner clinics" are set out in the memorandum, and the report likewise leaves the matter in this way to the consideration of the profession at large. On the subject of medical referees four recommendations are made. The final section gives (1) a summary of the main changes that would take place in the present terms and conditions of service if the suggestions made in the three reports are carried into effect; and (2) a series of six recommendations put forward by the Committee. With a view to eliciting the opinion of the profession throughout the country it is suggested that the reports and the memorandum be considered in the first instance at a meeting of the Local Medical and Panel Committees of each area, or, preferably, of the whole local profession, at an early date, and the views of the local profession thus obtained, particularly on the recommendations contained in the report, and on any points to which the profession may desire to draw attention. It is further proposed that the Insurance Acts Committee, in conjunction with the Local Medical and Panel Committees, shall arrange for Group Conferences next month in some twelve or fourteen centres throughout the country, corresponding to the groups which return direct representatives to the Insurance Acts Committee. At these, representatives of the Committee and of the Commissioners will attend for the purpose of elucidating the reports and giving explanations. There will be a special conference in London, probably on July 17th, of representatives of all Local Medical and Panel Committees to consider the reports and any motions bearing on them. The attention of the secretaries of Divisions and Branches of the British Medical Association is being called to the great importance of the discussions on these reports, and they are asked to co-operate with the secretaries of Panel Committees in order to secure thoroughly representative meetings of the whole profession in each area.

FORECAST OF BODY TEMPERATURE IN FEVER.

RECENTLY, while Professor Richet was laid up with an influenzal attack, he made observations on his own temperature,¹ and determined the singular fact that he could forecast almost without mistake what his temperature would be two or three hours afterwards. His forecast was founded purely on his subjective sensations of heat or cold. If one, suffering from some febrile attack, experiences a general sensation of cold, if each movement is accompanied by a semi-shiver, it is because the organism has not yet reached the thermic level that is necessary, and consequently the temperature will rise. Even at a temperature of 102° or 103° this sensation of cold may be experienced, and the nervous system, under the influence

of the febrile intoxication, will exact a still higher temperature. The sensation of cold is absolutely independent of the real organic temperature; thus at 100.5° one may feel too warm and at 102° too cold. The nervous system will always react according to the needs; if at 102° the subject feels cold or very cold, at the end of an hour or two the temperature will rise to 103° or 103.5°. On the other hand, if he has a sensation of heat, whatever the temperature may be at that time, it is because the nervous system demands cooling, and the temperature will surely fall. Richet gives an example in illustration: At 2 o'clock, with his temperature at 100°, he had a sensation of cold, and forecasted a rise; at 3 o'clock his temperature was 101° and he had an intense sensation of cold, and therefore forecasted a further rise; at 6.30 the temperature was 102°, there was still a slight feeling of cold, and he knew the temperature would go higher still; at 8.45, with a temperature of 103°, he experienced a sensation of heat and forecasted a slight fall; at 10.30, with a temperature of 102°, he had profuse perspiration and forecasted a considerable fall, and a little over two hours afterwards the temperature was 100.5°. Richet remarks that if the medical man makes careful inquiry into his patient's symptoms with regard to shivering or sweating, he ought always to be able to foretell whether the temperature will rise or fall in the course of a few hours, and he thinks that the stronger the sensation of heat or cold the greater will be the subsequent change of temperature. In health our temperature response to external variations is unaccompanied by subjective sensations, because our thermic regulation is such that the body at any moment has the correct temperature required for that moment, whereas in febrile conditions the temperature may be above or below what the necessities of the condition demand.

PREPARATIONS OF STROPHANTHUS.

THE *British Pharmacopoeia* directs that the *strophanthus* seeds used for making the two official preparations—the extract and the tincture—shall be the seeds of *Strophanthus kombé* (Oliver) freed from the awns. Professor Cushny (*A Textbook of Pharmacology and Therapeutics*, 1918) states that the various species of *strophanthus* contain glucosides which present differences in chemical form and also in toxicity, but resemble each other in their common action on the heart. The species in common use are, he says, *Strophanthus kombé* and *Strophanthus hispidus*. A recent examination of the samples in this country did not show that *S. hispidus* is one of the commonest species found with *S. kombé*. However this may be, Professor Cushny states that the glucosides of the two species resemble each other closely in action and are known as *Kombé-strophanthin* and *Hispidus-strophanthin*. He adds that *strophanthinum* of the *U.S. Pharmacopoeia* is the glucoside of *Strophanthus kombé* and varies in composition and in power. Another plant (*Strophanthus gratus*) contains a crystalline glucoside known as *Ouabain* or *Gratus-strophanthin* (*g-strophanthin* of Thoms). The *strophanthin* of commerce, he adds, is generally derived from a mixture of different species and varies much in composition and toxicity. The activity of preparations of *strophanthin*, as of *digitalis*, may be tested by finding the minimal quantity required to arrest the frog's heart in systole within an hour; for this purpose the *U.S. Pharmacopoeia* lays down standards. By this method the tincture of *strophanthus* appears to be a hundred times as strong as that of *digitalis*, while clinically it is rather the weaker; the explanation, Cushny states, is that *strophanthus* taken by the mouth undergoes destruction in the intestine to a larger extent than *digitalis*. This method of pharmacological assay, therefore, cannot be used to compare the strengths of different drugs, but only to compare preparations containing different proportions of the same active principles. The position, so far as we have been able to ascertain it, is that *Strophanthus kombé* grows only in a comparatively

¹ Richet: *C. R. de la Soc. de Biol.*, April 12th, 1919.

limited area of East Africa, and that at least two other species (probably three) also grow there. All the species are gathered indiscriminately by the natives and sold to the European agents. The cost of obtaining the genuine unmixed drug is considerably increased by this indiscriminate collection of all species, for the natives have to be paid for gathering a variable proportion of the unofficial species, and the sorting involves much labour and trouble. Consequently, parcels consisting of mixed species of *strophanthus* can be obtained commercially at much cheaper rates than genuine *Strophanthus kombé*, and a certain number of buyers unfortunately prefer to buy such parcels rather than pay the necessary price for the pure. Genuine unmixed *Strophanthus kombé* can, however, be obtained in this country without any difficulty, provided the necessary price is paid, and it is actually bought by certain consumers. Parcels consisting of at least 97 per cent. of the pure drug have recently been examined. The position is rendered much more unsatisfactory by the fact that very little appears to be known about the chemical compositions or physiological activities of the species of *strophanthus* other than *kombé*, beyond the fact that some of them contain substances allied to *strophanthin* and *ouabain*. It follows that the effect upon a frog of a preparation made from a mixed sample of *strophanthus* may be far from a satisfactory criterion of the physiological effect of the same preparation on the human subject. It appears, therefore, that physiological standardization can be satisfactory only when *strophanthus* preparations are prepared from pure unmixed *Strophanthus kombé* only, and that it is of comparatively little use when mixed *strophanthus* has been employed. In the present state of knowledge it is practically impossible to obtain any satisfactory chemical proofs of the varieties of the plant which have been used in making a particular preparation. The general conclusion would seem to be that the only way of ensuring the supply of satisfactory preparations of *strophanthus* is to order it according to the *British Pharmacopoeia*, which, as has been stated, directs the seeds of *Strophanthus kombé* to be used. It will be noted, however, that the *United States Pharmacopoeia* allows the use also of *Strophanthus hispidus*.

THE KEY OF THE FIELDS.

IN an interesting paper entitled *Infant Mortality and Housing*, read before the Royal Society of Arts on April 9th, Dr. Leonard Hill, F.R.S., summarized the statistical facts relative to infant mortality, and he pointed out that the share of digestive ailments in this mortality was so great that proper feeding was evidently of paramount importance. He urged that in proper feeding two factors were paramount: (1) The right choice of food; (2) the need for food determined by the expenditure of energy. The second of these factors was the one Dr. Hill specially considered. He remarked that the rate of cooling of the body influenced both digestive and respiratory causes of death; the former because of its relation to the intensity of metabolism, the latter because the cooling and evaporative power of the air acted not only upon the skin but also upon the respiratory mucous membrane. The troubles of the tenement baby were, Dr. Hill thought, largely due to a lack of adequate cooling and evaporative power in the atmosphere to which it was exposed. High buildings and close cramping together of the houses shut out the free movement of the air in big towns; the tenement air was stagnant, humid, warm; the cooling and drying powers exerted on the respiratory tract were low, the infants being often overclothed and not exposed to the cooling and evaporative power of the wind as in the west coast and rural cottages of Britain. Dr. Hill believed that the depression of metabolism due to these conditions was a potent accessory cause of such diseases as scurvy and rickets; if the vitamins were slightly deficient in quantity, defective absorption came into play. Depressed

metabolism might similarly predispose to dental caries. Dr. Hill observed that, according to Dr. Pritchard's results, slum conditions might depress the metabolic needs of the infant from 27 to 15 oz. of breast milk daily. Dr. Hill vigorously emphasized the importance of open-air exercise for children and adolescents. "The physical health, the good temper, and moral behaviour of children are closely related. Cross temper is produced by over-indulgence in food, and removed by a purge or a long walk. Naughtiness, and in particular fidgetiness and inattention in school, can be cured by open-air exercise. To punish such by detention, and by imposing tasks of sedentary brain work, by the very cause of the distemper, is monstrous folly. Whipping, which hardens the skin and the power to endure pain, is far better than such punishment." He also said: "For twenty-five years I taught medical students, and have watched in many the degradation of health, manhood, the enthusiasm for learning, by cramming for examinations, by the absurd overloading of the curriculum, by the total neglect of an ordered discipline of their physical health." We hope that Dr. Hill's appeal will not fall upon deaf ears. It is understood that certain Government offices are to be established in the outer suburbs, and the decentralization of brain workers might be carried a good deal further than it is. Government departments employ many officials in intellectual work of a non-administrative kind, and there is really no reason why these should not do the bulk of their work at home, attending the central office merely to communicate their results and receive fresh instructions. Daily attendance in the neighbourhood of Whitehall means for most people from two to three hours' confinement in crowded railway or tube carriages. If the orthodox belief that no official can be trusted to do any work unless he spends his day in an office were abandoned, and even half the time spent in travelling to and from were devoted to open-air exercise in the country, both the quantity and quality of the work done would be improved, and the pressure upon middle class dwellings in the inner suburbs relaxed.

PORCUS GERMANICUS PERFIDUS.

THE distinguished Danish vegetarian, Dr. M. Hindhede, has published in the journal of the Danish Medical Association a paper¹ purporting to prove that the German system of rationing broke down over the pig and other domestic animals. The German pig, in other words, betrayed the Fatherland, and contributed more to Germany's downfall than the Allies' blockade. At the outbreak of the war the food problem was more serious in Denmark than in Germany. Denmark could provide 3,300 calories (cereals and potatoes) daily per man, Germany 4,000 calories. At this stage Denmark had twice as many domestic animals per man as Germany. But Denmark was blessed by a council of eight (four agricultural experts and four scientists, including Dr. Hindhede), who agreed that if sufficient calories were provided the problem of albumins and fats would be largely solved. Accordingly they recommended the restriction of all bread-yielding cereals, of nearly all the barley and of a large proportion of the potatoes for human consumption. This led to a reduction of the head of cattle more than six years old from 510,946 in July, 1914, to 334,721 in July, 1918, and of pigs over four months from 706,950 to 121,955 in the same period. Germany, on the other hand, was hampered by the old Voit-König-Rubner theories and by the landed interests. Instead of reducing the numbers of her cattle and pigs, Germany forbade the slaughtering of cattle under seven years old, and of pigs less than 60 kilos in weight. But no restrictions were put on feeding them with cereals. Meanwhile, millions of soldiers were devouring meat on König's sumptuous scale. After four months of war, not only had the old stocks of cereals vanished, but also half of the last harvest. Then

¹ *Ugeskrift for Læger*, January 30th, 1919.

the authorities began the wobbling that continued for the rest of the war. First the cereals were controlled, while farmers were urged to keep their live stocks up by feeding them with potatoes. By the spring of 1915 there was scarcely a potato left. Professor Zuntz of Berlin had the courage at this stage to urge the slaughter of pigs, even if their carcasses had to be left on the dung-hill. In 1917 Professor Ballod candidly assured his countrymen that they were themselves doing more to reduce their rations than the English. So Germany starved while Denmark thrived, and her advisers could show that the colossal experiment of testing the Voit-Rubner *versus* the Chittenden-Hindhede teachings had discredited the former. Dr. Hindhede's paper is loaded with tables and statistics, the monotony of which is relieved by a breezy, not to say flamboyant and polemical, style.

SWIMMING FOR CRIPPLED MEN.

Knowledge that a man crippled in the lower limbs by injury, deformity, or paralysis can move easily in the water and learn to swim has been acquired by many so afflicted. Byron claimed that in spite of his club feet, which made him lame on land, he was as good as any man in the water, and proved it. He said of Don Juan, escaping from the shipwreck:

He could, perhaps, have pass'd the Hellespont,
As once (a feat on which ourselves we prided)
Leander, Mr. Ekenhead, and I did.

But the knowledge, though possessed by many, does not seem to have had any application as a principle in therapeutics. Many merits have been claimed for baths, but not, so far as we know, this, until recently. We have had the opportunity of seeing the bath at the special surgical (orthopaedic) military hospital at Tooting, and it was quite obvious that it was having a beneficial effect upon many of the patients who used it. The effect on cases, for instance, of partial paraplegia is produced by a combination of causes—physical, physiological, and mental. The high specific gravity of the water, as compared with air, buoys up the limbs, and the absence of friction with the surface of the bed renders movement easier; when the man swims, or while he is learning, the muscles receive natural physiological stimulus originating in the cortex, and a beneficial mental effect is produced by the man's discovery that he can move his limbs and get about in the water. The building of a swimming bath sounds an elaborate business, but that established at the hospital at Tooting by Lieut.-Colonel D. K. McDowell, C.M.G., R.A.M.C., the officer in charge, with the help of the British Red Cross Society, was quickly put up at no great cost, by the conversion of what had been a lavatory. It is not big, nor is it deep, but appears to answer the purpose very well. In the note by Colonel Farquhar Buzzard, printed at p. 610, the dimensions of the bath are given and the value and mode of action of baths in such cases are discussed. We believe that Colonel McDowell will be found willing to show the bath to any one who may think of instituting such an addition to a hospital.

REGISTRATION OF STILLBIRTHS.

An inquest was held recently by the City coroner, Dr. F. J. Waldo, in regard to the death of an illegitimate child. An attempt had been made to obtain burial as stillborn. Dr. Waldo informs us that there was an unexplained mark round the neck, that Dr. Spilsbury, who made the autopsy, found a condition of patent ductus arteriosus, and that Dr. Spilsbury and Dr. Thompson, divisional surgeon, agreed that the mark round the neck might have been produced either before or after death. Dr. Waldo informs us further that, at his suggestion, the jury passed unanimously the following rider, with a request that it should be forwarded to the Home Secretary and the Registrar-General: "We (the jury) are strongly of opinion that stillbirths which have reached the stage of development of

7 months should be registered upon a certificate of a registered medical practitioner, and that it should not be permitted to bury or otherwise dispose of a stillbirth until an order for burial has been issued by the registrar. With this object in view, we suggest that the Home Secretary should introduce an amendment of the Registration of Births and Deaths Act, 1874, accordingly." In summing up, the coroner said the present system left the door open to crime, and it was well known that in order, also, to save money, the bodies of stillborn children were often made away with or buried or cremated in the same coffin with adults—an indecent and objectionable practice. Dr. Waldo, in forwarding this information, recalls the fact that the British Medical Association has for many years past sought to introduce the reform here suggested. The Association has expressed the opinion "that every case of stillbirth should be registered on the certificate of a registered medical practitioner, and no registrar's certificate for burial should be given except after receipt by the registrar of such medical certificate." In another somewhat similar case heard before the same coroner recently a similar rider was passed by the jury.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

THE number of subscriptions already received for the fund founded to present a portrait of himself to Sir Clifford Allbutt, painted by an eminent artist, is evidence that the proposal has aroused the cordial approval of the profession. It is intended to publish a first list of subscriptions next week. Dr. G. E. Haslip is acting as treasurer of the fund, and subscriptions, which should not exceed one guinea, should be sent to the Treasurer of the British Medical Association, 429, Strand, London, W.C.2. Cheques and postal orders should be made payable to the "Sir Clifford Allbutt Presentation Fund," and crossed London County, Westminster, and Parr's Bank.

THE KING has appointed Dr. Herbert French, Physician to Guy's Hospital, to be Physician to His Majesty's Household, in the place of Sir Robert Burnet, K.C.V.O., resigned.

THE summer session of the General Medical Council will commence on Tuesday, May 27th, when the President, Sir Donald MacAlister, K.C.B., M.D., will take the chair at 2 p.m. and give an address.

DR. E. L. COLLIS, one of the medical inspectors of factories under the Home Office, has been appointed Talbot Professor of Preventive Medicine in University College, Cardiff. The chair was founded by the late Miss Talbot shortly before her death. The foundation yields £1,500 a year.

SURGEON VICE-ADMIRAL SIR WILLIAM HENRY NORMAN, K.C.B., Director-General of the Medical Department of the Royal Navy, is, at his own request, vacating that office, which he has held for the last two years, at the end of this month. He will be succeeded by Surgeon Captain Sir Robert Hill, K.C.M.G., C.B., who was principal medical officer of the Grand Fleet during the war.

THE disappearance of the ice on the Dvina and at Archangel renders it possible to use the river for the transport of wounded. We understand that the Royal Navy will be responsible for the transport of the sick and wounded down the river Dvina, and that the patients will be in charge of naval medical officers during the voyage. There is a large military hospital at Archangel, and we presume that the usual arrangements will be made for hospital ships and hospital carriers to transport the sick and wounded of the expedition to England.

Medical Notes in Parliament.

Ministry of Health Bill.

COMMITTEE STAGE IN THE HOUSE OF LORDS.

THE Ministry of Health Bill was considered in Committee of the House of Lords on May 8th.

Mines, Factories, and Workshops.

On Clause 2, which sets forth the general powers and duties of the Minister in relation to health, Lord Sydenham moved to include amongst the measures to be taken for the health of the people steps for the maintenance of "hygienic conditions of labour in mines, factories, and workshops, and on board mercantile shipping." The valuable knowledge gained by the Munition Workers' Health Committee as to the causes of industrial fatigue ought not to be thrown away, and it ought to be somebody's business to see that it was properly applied. At present the Board of Trade had powers as to the fencing of machinery and as to cubic space; but the preservation of health appertained to the Ministry of Health. Viscount Haldane said that the Home Office inspectors of mines looked not only after health, but administered the Truck Act, and supervised production and the conditions of life generally. The mines were already heavily inspected, and he suggested that some kind of joint organization of the various departments which required such services might be necessary.

Viscount Sandhurst, for the Government, said that the Ministry of Health must, of course, keep itself in close touch with all industrial conditions, but Subsection 2 of Clause 3 set forth that by an Order in Council any other powers and duties not already mentioned, which appear to relate to the health of the people, might be transferred to the Ministry of Health. Lord Sydenham withdrew his amendment.

"Patent" Medicines.

Lord Bledisloe next moved an amendment to include amongst the powers and duties of the Minister the taking of measures for the avoidance of fraud in connexion with the alleged remedies for diseases. He recalled to the House that it was on his initiative that a Select Committee of the House of Commons was set up in 1912 to inquire into the sale of patent and proprietary medicines. That Committee sat for nearly three years and its report was the most damning ever made by any Select Committee of either House. It disclosed a network of fraud and deliberate crime against the physical well-being of the nation unparalleled in any other civilized country. The chief vendors were those whose operations were directed with a view to playing upon the weakness of mankind, particularly the sexual weakness, in this country by advertising preparations claiming to cure incurable diseases, and to procure abortion. Many other nefarious practices were carried on, each advertising alleged remedies of no value at all to cure certain diseases and selling them at very high prices. These he passed over as comparatively unimportant, but what was important was, that there was disclosed a whole network of fraud directed very largely against women, in many cases innocent, without an attempt on the part of any Government department to put a stop to it. It appeared that no fewer than four Government departments were nominally responsible for dealing with these crimes, but no department considered it its duty to prosecute these offenders, and in most cases it was clear that they were impotent to institute any such prosecution. He quoted from the report the finding that, "Proceedings for fraud against proprietors or vendors of proprietary medicine on the ground that they could not cure the diseases they mention were practically unknown." The report made a strong recommendation that the administration of the law concerning the advertising and sale of patent, secret and proprietary medicines should be part of the functions of the Ministry of Health when such department was created and in the meantime should be undertaken by the Local Government Board.

Viscount Sandhurst, in reply, said that this and further amendments which Lord Bledisloe proposed would not extend the provisions of the law now in force. The Select Committee was satisfied that the difficulties of bringing powers into successful operation were so numerous and so great for all practical purposes, except in respect of registered poisons, that the sale of these horrible things went on unrestricted. The Committee drew attention to the fact that the sale of patent medicine came under a variety of different Acts (he believed six) and under a variety of authorities—the Home Office, the Privy Council, the Local Government Board, and the Patents Office. The matter, therefore, was complicated and difficult. Lord Bledisloe's amendment would commit the Minister to saying that he would assume responsibilities that would be inadequate and hardly more than illusory. The President of the Local Government Board authorized him to give an undertaking to consider without delay the whole problem, and that he would as soon as possible make proposals to Parliament for whatever new powers were needed to bring about the necessary action.

Lord Buckmaster said the report of the Select Committee showed that this country was at this moment at the mercy of a gang of people many of whom were quite destitute of honour and who were busily engaged by fraudulent and dishonest means in vending drugs and food that in many cases

were absolutely dangerous to the health of the people. The report was that upwards of two millions a year were spent in advertising these goods. This trade was a mischief to the public and was being carried on under conditions which prevented the public from realizing the danger. He could not see why Lord Sandhurst should suggest it was not right at the inception of the Ministry to burden it with the very powers which the Ministry was created to enforce.

The Marquis of Salisbury urged that the matter should be further considered very carefully before the report stage of the bill, and Lord Crewe said the question at issue was whether it was possible for the new Ministry of Health to take over now all the powers of the medical and hygienic kind which were now entrusted to the Privy Council. Lord Sandhurst, whilst wishing it to be clearly understood that he was not prejudging the case, said that in accordance with the wishes expressed he would consult the President of the Local Government Board and refer to the matter later, probably on report. In these circumstances, Lord Bledisloe said he would withdraw his amendment. Regarding the possible transfer of all the powers relating to health from the Privy Council, he said that the amendment which he had put down for a later stage included the powers which the Privy Council possessed in regard to the qualifications and conduct of dentists, chemists, and veterinary surgeons, and also the scheduling of poisons.

Care of the Blind.

Lord Downham moved to include "the treatment and care of the blind" amongst the matters to be undertaken by the Ministry of Health. There was something like 20,000 blind in our country; it was established beyond doubt that 10 per cent. of these cases were due to ophthalmia neonatorum, a disease which could be enormously diminished, and, he believed, actually suppressed. The amendment was then agreed to.

Voluntary Hospitals.

A very short discussion followed on an amendment submitted by Lord Tenterden to add to the clause the words, "The Minister will not interfere with the treatment prescribed by properly qualified medical men and women." The object of this amendment, the mover said, was to get some clear definition of what was intended under the clause. Viscount Sandhurst, in his reply, assured the House that under the bill the Ministry of Health would have nothing to do with hospitals. The measure conferred no power on the Minister to interfere in any way with voluntary hospitals. The amendment was negatived and the clause as otherwise amended was agreed to.

Transfer of Powers from the Board of Education.

On Clause 3, dealing with the transfers of powers and duties to and from Ministers, Viscount Sandhurst carried a drafting amendment of Subsection (1 d), providing for the transfer of the powers and duties of the Board of Education with respect to the medical inspection and treatment of children and young persons.

Lord Downham then moved the omission of the qualifying provision, which sets forth that the Minister of Health may make arrangements with the Board of Education to submit schemes whereby these duties might be carried out by the Board of Education for the Ministry of Health under arrangement. This provision was inserted in the bill on the report stage in the House of Commons, the proposal for transfer having been carried in Grand Committee somewhat against the wishes of Dr. Addison, who had urged that it would be very inconvenient for the Ministry of Health to take over the powers of the Board of Education at once. Lord Downham objected that by the proviso responsibility was divided between two Ministers; it would be far better that one set of doctors under the same department should treat the children.

Viscount Sandhurst said that the Government inserted the amendment so as to facilitate the work of the local education authorities, who otherwise would have found themselves bound to go to two departments in Whitehall instead of one. It was really a matter of administrative convenience. Medical inspection and treatment could not be entirely divorced from the system of educational grant schemes and grants as a whole. He reminded Lord Downham that the London County Council, of which he was chairman, was quick to draw attention to the inconvenience which would have arisen if the transfer were to be made as was proposed by standing committee without the provision inserted by the Government.

In the discussion Lord Haldane supported the Government, and Earl Selborne and the Marquis of Salisbury spoke in favour of Lord Downham's amendment. The Marquis of Crewe held that the Government could hardly be expected to accept the amendment off-hand. On a division the amendment was rejected by 37 votes to 23.

Poor Law.

Lord Downham next moved to omit Subsection 3, which declares that it shall be lawful for His Majesty from time to time by Order in Council to transfer duties from other departments to the Ministry of Health, and also makes reference to the proposed transfer of the Poor Law provisions from the operations of the Ministry. The Government ought not to have power to transfer enormous blocks of powers merely by Order in Council, even though they were not to become operative unless resolutions in favour were passed in both Houses.

Lord Sandhurst said it was true that in the case of the Poor Law further legislation would be needed before transfer could take place, but he held that the subsection was desirable.

Ultimately the amendment was withdrawn. At the instance of Lord Muir Mackenzie, Viscount Sandhurst accepted an amendment which made clear that possible transfers were not necessarily limited to matters affecting the relief of the poor.

Consultative Councils.

Lord Downham proposed on Clause 4 that the number of consultative councils should be limited to three. His fear was that these bodies would greatly embarrass a Minister coming into a department and finding entrenched there bodies every member of which was nominated by his predecessor with whose policy he happened to be in violent disagreement. It was true that Dr. Addison had said that the number of these councils would be limited to four, and that each was to be composed of not more than twenty members. But, even so, they would comprehend altogether eighty persons. Each council would have a paid secretary, might have any staff the Treasury would allow, and would apparently have any number of inspectors at their disposal. He foresaw a great army of these members of consultative bodies gradually being moved up, their travelling expenses and their subsistence allowance paid whenever they liked to come to London from Northumberland or Cornwall, remuneration also being given to them for loss of time. It appeared also, further, that it would be possible for these councils to make reports on any matter, whether referred to them or not, and, he presumed, to publish them. He would prefer to limit the councils to two—one in regard to the prevention and cure of disease, and the other in reference to national insurance. He wanted also to exclude the power of appointing a General Council.

After Lord Knutsford had supported Lord Downham, Lord Sandhurst said that the proposal for consultative councils was pressed upon the Government. He defended the payments proposed, pointing out that many valuable people could not afford to lose the time for which they were earning salary or wages. He believed that the councils would give a great deal of confidence to the policy the Minister would develop and would enable him to keep in close touch with advancing opinion and advancing method.

The Marquis of Crewe and the Marquis of Salisbury both spoke critically of the proposal for consultative councils, but in the end the amendment was negatived.

The consideration of the bill in Committee was then adjourned.

Wales.

On May 13th Lord Tenterden moved an amendment to Clause 5 to provide for the appointment of a special Secretary with seat in the House of Commons to deal with the administration in Wales. Lord Sandhurst, on behalf of the Government, said this proposal was in effect for the creation of a new Minister and was outside the scope of the bill. The amendment was withdrawn.

Parliamentary Secretaries.

On Clause 6 Lord Downham proposed that there should be only one Parliamentary Secretary. Viscount Sandhurst said that the words in the clause were customary so as to enable the Prime Minister to secure for a department representation in both Houses. They did not necessarily mean that two Parliamentary Secretaries in addition to the Minister would be appointed. The amendment was carried by 56 votes to 21.

Women Officers.

Lord Askwith moved an amendment providing that in making appointments the Ministry of Health should give equal consideration to the suitability of women as well as men.

This was accepted by Lord Sandhurst, and the bill as amended was reported to the House.

Tuberculosis Sanatoriums for Discharged Soldiers and Sailors.—The President of the Local Government Board and the Minister of Pensions have appointed

Major the Hon. Waldorf Astor, M.P. (chairman),
Sir Montague Barlow, K.B.E., M.P. (vice-chairman),
Colonel Sir Arthur Griffith-Boscawen, M.P.,
Lieut. Colonel Nathan Raw, M.P.,
Honorary Brigadier-General Sir Owen Thomas, M.P.,
Sir Kingsley Wood, M.P.,
E. Coey Bigger, Esq., M.D. (Irish Local Government Board),
F. J. H. Coutts, Esq., M.D. (Local Government Board),
James Currie, Esq., C.M.G. (Ministry of Labour),
R. W. Harris, Esq. (National Insurance Commission),
Sir J. Leslie Mackenzie, M.D. (Scottish Local Government Board),
J. Fletcher Porter, Esq., J.P., M.B. (Ministry of Pensions),
J. Smith Whitaker, Esq., M.R.C.S., L.R.C.P. (National Insurance Commission).

to be a committee to consider and report upon the immediate practical steps which should be taken for the provision of residential treatment for discharged soldiers and sailors suffering from pulmonary tuberculosis and for their reintroduction into employment, especially on the land. Dr. F. R. Seymour, of the Local Government Board, will act as secretary, and any communications should be addressed to him at the Local Government Board.

Surplus Medical Equipment.—Colonel Ward-Jackson, on May 8th, asked whether opportunity would be afforded to the local authorities to obtain for the benefit of the aged, the cripples, and incurables in their districts invalid chairs, wheeled cots, etc., from the military hospitals which were being closed down. Mr. Churchill replied that the disposal of all surplus army stores was in the hands of the Surplus Government Property Disposal Board of the Ministry of Munitions, to which applications should be made by local authorities. He

understood that Dr. Addison was about to make certain proposals for utilizing surplus medical and other stores for the various health services, and the whole question would be sympathetically considered.

The National Council for Combating Venereal Disease.—Major Astor, on May 8th, in a written answer to Mr. Gilbert, stated that a grant of £8,000 was paid to the National Council for Combating Venereal Disease towards the expenditure for 1918 on various measures of educational publicity, and £5,000 had been similarly paid towards their 1919 work. The measures taken were discussed with the Board and were subject to its concurrence.

Leprosy in India.—Sir J. D. Rees asked the Secretary of State for India, on May 7th, whether lepers sent to a leper asylum in India by magisterial order were detained only so long as they suffered from an open sore; whether this involved fair expenditure in view of the fact, believed to be established, that leprosy was contagious in all its stages, and whether the Governor-General or Council contemplated any amendment of the Leper Act. Mr. Montagu replied that the answer to the first part of the question was in the affirmative. He was advised that medical opinion was divided on the question whether leprosy was contagious in all its stages. No amendment of the Indian Leper Act was in contemplation.

The Ministry of National Service.—Mr. Beck, the Parliamentary Secretary to the Ministry of National Service, stated, on May 8th, that the staff had been reduced from 15,124 on November 11th to 286 on May 1st. The officials still retained were all at headquarters, and were employed mainly on the winding up of the accounts of the Ministry. When this work was completed the Ministry would be dissolved.

Tuberculosis.—Major Astor, on May 8th, informed Mr. Frank Roberts that the accommodation for insured tuberculous persons in the Staffordshire area was inadequate. A new institution, with fifty beds, would, it was expected, be ready next month, and other proposals were being considered.

Rabies in Animals other than Dogs.—In reply to Captain R. Terrell, on May 12th, Sir Arthur Griffith-Boscawen said that the Rabies Order of 1919 provided for the isolation, on the owner's premises, of horses, cattle, sheep, and swine which had been exposed to infection; in the case of dogs or cats, isolation, where practicable, took place on approved veterinary premises. Moreover, diseased or suspected animals other than dogs or cats were not slaughtered. Up to May 10th 182 outbreaks were recorded by the Board, which included two in pigs, two in bovines, one horse, and one sheep.

Seamen and Health Insurance.—In the House of Commons, on May 12th, Dr. Macnamara, in answer to Sir Bertram Falle, stated that it was true that seamen and marines who had completed the period of their first engagements and re-engaged for pensions were given the option of remaining outside the provisions of the National Insurance Act, 1911. This option was reserved to them under Section 46, Subsection 1 of the Act. Every endeavour was made at the time of the Act coming into force, both by the issue of a pamphlet to all ratings and by notices posted on the lower deck, to bring to the notice of all concerned the advantages of immediate insurance, as well as the disadvantages, on subsequent reversion to civil life, of refusing to contribute.

Army Medical Corps Transfers.—Colonel Wedgwood, in the House of Commons, on May 12th, asked for information as to the number of men still in prison in Egypt for refusing to accept transference from the Royal Army Medical Corps to combatant units; also how long they had been in prison, and whether their immediate release had been ordered. Mr. Winston Churchill stated that at the beginning of April there were thirteen men imprisoned in Egypt. They had now been ordered home to complete their terms of imprisonment in English prisons. All the men were dealt with during June, July, and August last year. He could not see his way to order immediate release in these cases.

Hospital Conditions in Newcastle.—In reply to Mr. Swan, in the House of Commons, on May 12th, the Secretary of State for War said that arrangements had been made with the Board of Control whereby the Northumberland War Hospital would continue in War Department occupation until December 31st next. It was hoped by this means to ease considerably the strain on the civilian establishments. In answer to a further question from Mr. Swan, Mr. Churchill explained that the closing of the 1st Northern General Hospital was dependent on the completion of huts now being erected to accommodate orthopaedic cases. The total accommodation for patients at these two hospitals would not therefore be reduced, even after the 1st Northern General Hospital was given up.

The Pensions System and Medical Boards.—Dr. Gossage, of the Medical Department of the Pensions Ministry, gave evidence before the Committee on Soldiers' and Sailors' Pensions on May 12th. The chairman, Sir Montague Barlow, referred to the widely current belief that men's pensions were reduced when the Pensions Authority got to know that they were in employment. He asked what was the object of the inquiry whether a man was employed or not. Dr. Gossage replied that the question was at the end of the form to be filled up when a man's disability had been determined. It was entirely optional whether an answer was given or not. The question was put in the man's interest to assist him in getting employment or obtaining educational facilities. It had nothing to do with disability assessment.

UNITY, DIVERSITY, AND DIVISION.

THE following note has been sent to us by a correspondent who was in general practice until the war, and has since served continuously with the army abroad. The writer's views and the way he puts them are entirely his own. We print his short essay, which is a thoughtful and stimulating contribution to the medical topic of the day.

At the close of the great war, and on the threshold of a period which may come to be called the great social reorganization, the medical profession finds itself confronted with great tasks to perform, both for the community as a whole and for its own members.

The greatest degree of unity of the medical profession which is compatible with the human diversity of its members is at this moment highly desirable for the reforming of existing evils in the practice of medicine, and the producing of conditions of freedom in which medical men shall be able to practise their art; and it is only by the accomplishment of these aims that medicine can become the faithful servant of the community, which must be content with nothing less than the best service obtainable.

In every community of men freedom must involve a considerable diversity, which should, however, be compatible with unity. A lack of unity exists in the medical profession at this moment which, if not mended, is at once a menace to the profession and a hindrance to that application of medical knowledge and skill to the welfare of the state which must play an important part in the great social reorganization.

Our lack of union—even disunion, division—is doubtless attributable to a number of causes, of which weariness, fear, a sense of confusion, a certain selfishness and a lack of confidence, are probably the chief; but I believe that if we seriously think it out, we shall find that our disunion is the resultant of one or more of the above components, *plus* the fact that we have drifted, blind to the essential fact that contract practice (whether insurance or national service) involves at present a negation of the central principle of our unity—the function of Medicine.

The function of Medicine is to heal the sick and to maintain health. An honest doctor may well engage himself throughout his life and rise in contentment and clear conscience over trials and difficulties and injustices to a life worth living, provided that his function is to heal the sick who wish to be whole. But, what in fact exists to-day under the conditions of panel practice? Is not much of the doctor's function the signing of certificates for those who desire not to be whole?

Has not the result been one long battle between temptation to earn a reputation as an easy signer of certificates and the doctor's conscience? Has this not brought down some to yielding to baseness for the gaining of the large panel which is the only "business-like" form of panel practice? Has it not produced a bitterness, an unrest, a jealousy, a lack of comradeship, both amongst those who have fallen and those still struggling? Is this freedom? A thousand times no! For freedom is the liberty of a man to live to the best of his gifts. And can the community expect to be well served by men living this life? The answer is obvious.

Is not social reform trying to purge industry and trade of the sweating employer who, for example, seeks to thrust prostitution upon the drapery girl, who must be smartly dressed upon a wage that barely gives her food?

Be sure we shall get no unity until steps have been taken to remove this infamous reproach from the conditions of State Service, whether in the form of the Insurance Act or some other scheme. Our disunion is based upon a mental state, a certain condition of morale, which all the organization and oratory, politics, and polemics, will be powerless to heal until this fundamental condition of our "fragments" is corrected; our fragments are not only not in contact, they are diseased.

The British Medical Association is an association of human beings. *Humanum est errare*. It is not perfect nor ever will be. I believe the Association to have failed seriously in many ways. I had ceased to be a member. I recognize now that the Association is what we members

choose to make it. I was not an energetic member in the past. I was (and still am) ignorant of many things—of its history in forwarding the interests of medicine, the health of the community, and the welfare of the profession. *Peccavi*.

I have rejoined. I am trying to learn. I have studied the trade union claims. I recognize that the Association has a foundation upon which the unity of our profession can be built. What we need is all to join and to work. If we all join, our voices must be heard. The sooner we join the sooner can we produce an effort. The times are critical.

We have endured the great war for the vindication of the rights of freedom for free people, and to free those that are downtrodden in tyranny. If we are to fulfil our functions, we must free ourselves that we may save others. Diversity is only freedom when in unity.

Scotland.

THE DEVELOPMENT OF THE UNIVERSITY OF EDINBURGH.

At the half-yearly statutory meeting of the General Council of the University of Edinburgh on May 7th the prescribed order of the formal business was departed from to enable the Vice-Chancellor (Principal Sir James Alfred Ewing, K.C.B.) to make three intimations, all of which were received by the council with lively satisfaction. The first had reference to the four ordinances for the establishment of professorships in zoology, forestry, psychiatry, and accounting, which were afterwards approved by the council, in each case subject to the condition that the occupants of the new chairs come under any general rule that may hereafter be adopted by the university as to the retirement of professors on reaching a certain age limit, or after a definite period of service. Sir Alfred Ewing said that the establishment of these chairs (two of which were in the Faculty of Medicine) indicated the vigour of the university and its capacity for legitimate organic growth. The professorship of zoology was in addition to that of natural history, and the annual salary attached to it was £900, which might be increased at the discretion of the University Court. The occupant of the chair of psychiatry was to be the physician-superintendent of the Royal Edinburgh Asylum for the time being. The second intimation was with regard to the acquisition by the university of a piece of ground having an area of about 115 acres in the southern suburbs of Edinburgh for the purposes of much-needed extension. The first use to which this site would probably be put would be the erection of a chemical laboratory, and other uses would follow in due time. The Principal stated, in the third place, that the services of the assistants and lecturers who were giving their whole time to teaching would in the future be more adequately remunerated. There were to be four grades, with salaries respectively of £200 rising to £250 (for assistants), of £300 to £350, of £400 to £450, and of £500 to £600 (for lecturers). There would also be an improved system of superannuation. These and other improvements had been made possible through the grants which the university, in common with the other universities, was about to receive from the national purse. The ordinary business of the meeting included the approval of the Business Committee's report; amongst matters in it bearing on medicine were the obituary notice of the late Dr. Hugh Jamieson, who had given seventeen years of service on the Business Committee, the appointment of Dr. George Barger to the recently established chair of chemistry in relation to medicine, and the marked increase in matriculation. Places had been found for all the ex-service men, but several of the younger applicants for admission to the classes in medicine had to be refused meanwhile. The report by Principal Laurie's sub-committee on university extension, in which there was a reference to the recent re-establishment of the post-graduate course in medicine under the auspices of the university medical faculty and the extra-mural medical school of the royal colleges, was approved.

CHAIR OF MATERIA MEDICA AT ABERDEEN.

Dr. Charles R. Marshall, Professor of Materia Medica and Therapeutics in the University of St. Andrews, has

been appointed to the Regius Chair of Materia Medica in the University of Aberdeen, vacant by the resignation of Professor Theodore Cash.

VITAL STATISTICS.

The issue by the Registrar-General for Scotland of his report for the last quarter of 1918 makes it possible to summarize the more important facts for the entire year. The number of registered births (98,550) was less than in all years since 1855, with the exception of 1917. The marriages numbered 4,108 more than in the preceding year, and 2,207 more than the mean of the preceding ten years. The deaths registered numbered 78,359, an increase of 8,876 on the preceding year, and 4,640 more than the mean of the preceding ten years. The excess of deaths in 1918 over 1917 is attributed to the severe epidemic of influenza in the fourth quarter. The natural increase of the population—that is, the excess of births over deaths—amounted to 20,191, which is 7,767 less than in the preceding year, and 25,564 less than the mean for the preceding ten years; it is the smallest annual natural increase since 1855. The birth-rate was 20.2 per 1,000, and was lower than in any year except 1917. The infant mortality rate was 100 per 1,000 births, which is 7 less than in the preceding year, and 11 less than the mean of the preceding ten years. Only in the year 1916 was the annual rate lower than that of 1918. Compared with 1917, the causes of deaths showing marked increases were influenza, pneumonia, and bronchitis; there were marked decreases in measles, whooping-cough, and the diarrhoeas of children.

SCOTTISH BOARD OF HEALTH BILL.

The Royal Faculty of Physicians and Surgeons of Glasgow has transmitted to the Secretary for Scotland the following resolutions unanimously adopted at a meeting of the Faculty on May 5th:

1. The Faculty is of opinion that no adequate opportunity has been given to the medical profession, which ought to be the paramount authority in matters concerning health, for the discussion of the Scottish Board of Health Bill.
2. The Faculty is of opinion that the medical profession is not sufficiently represented on the proposed Board. The Faculty considers that, as the health of the community is to be under the supervision of the Board of Health, the said Board should include general medical practitioners of wide experience, and the Faculty regards any Board formed without such members as quite unsuitable for obtaining the objects which the bill contemplates.
3. The Faculty is strongly of opinion that there ought to be a permanent advisory committee composed in part of medical practitioners practising in Scotland, and elected by the profession, such advisory committee to meet at least quarterly.

SCOTTISH WOMEN'S HOSPITAL.

At a large meeting in Edinburgh on May 8th, over which Sir George Berry presided, Miss Frances Ivens, M.S., M.B., gave an account of the work of the Scottish Hospital Unit sent out to work under the French Red Cross in December, 1914. The unit, to which Miss Ivens was chief surgeon, was established in the Abbaye de Royaumont, and worked there until recently; in 1917 she was asked to take charge of an advanced hospital at Villers Cotterets, where work was continued until May, 1917, when the advance of the Germans compelled its evacuation. The staff, with many of the patients, went back to Royaumont, where the number of beds had been increased from 100 to 600, and the hospital had been taken over by the French military authorities. For her work at Royaumont Miss Ivens received the Cross of the Legion of Honour, and in recognition of services during the bombardment and evacuation of Villers Cotterets she received the Croix de Guerre avec palmes. Miss Ivens and Miss Ruth Nicholson, M.B., B.S., were entertained to luncheon by the committee.

RESETTLEMENT OF NURSES.

The Minister of Labour has appointed a subcommittee for Scotland of the Nurses' Resettlement and Demobilization Committee to deal with the resettlement of Scottish nurses in civil life, with special reference to those who

desire to find post-war employment or to undertake some form of training. It will also control the register of Scottish nurses who desire work in Scotland. The register will be kept at the office of the Employment Department, Ministry of Labour, 112, George Street, Edinburgh, to which all inquiries should be addressed.

The Local Government Board in Scotland is represented on the subcommittee by Dr. T. F. Dewar, C.B., one of its medical inspectors, and Miss Merchant, Matron of the Eastern District Hospital, Glasgow; the Scottish Education Department by Dr. L. B. Cruikshank; and the Scottish Branch of the British Red Cross Society by Lieut.-Colonel David Wallace, C.M.G., C.B.E. The Scottish Matrons' Association, the Queen Victoria's Jubilee Institute, the College of Nurses, Edinburgh, the National Health Insurance (Scotland), and the Ministry of Labour are also represented.

England and Wales.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE Prince of Wales, who is President of King Edward's Hospital Fund for London, was in the chair at the annual meeting on May 6th, when the honorary treasurer, Lord Revelstoke, in presenting the financial statement, said that a legacy of £6,000 received in December had converted a deficit into a surplus of nearly £3,000 after the distribution of a sum of £200,000. Legacies received during the year included £20,000 from the estate of the late Brigade Surgeon John Law. Regret was expressed at the retirement of Sir William Church from the Distribution Committee, of which he had been chairman for sixteen years; it was announced that he had been succeeded by Sir John Tweedy, and also that Sir William Bennett had become chairman of the Convalescent Homes Committee. The Prince of Wales, in moving the adoption of the report, recalled the fact that the Fund was founded twenty two years ago by his grandfather, who, as Prince of Wales, was president for four years; his father, the present King, had been president for nine years. By the time King Edward ceased to be president the annual distribution had risen to £42,000; when King George V ceased to be president it was £150,000. While income from investments was the solid foundation for an increasing distribution, the Fund, in order to maintain the distribution at its present level, must rely on receiving £90,000 from annual subscriptions, donations, and legacies. The hospitals of London had, on an average, 3,656 beds occupied by sailors and soldiers, and the expenditure in 1918, after allowing for the payments from the Admiralty and the War Office, was £300,000 more than in 1913, and over and above this it would now be necessary to face the cost of repairs, renewals, and improvements postponed during the war. The adoption of the report was seconded by the Marquess of Cambridge and carried unanimously, whereupon the Speaker of the House of Commons proposed a vote of thanks to the Prince of Wales for presiding. This was seconded by Sir Alfred Keogh and carried unanimously.

COURSE IN PATHOLOGY AT CAMBRIDGE.

An advanced course of pathology will be given at Cambridge during the long vacation, from July 3rd to August 13th inclusive. It is intended specially for senior students preparing for the third M.B. examination. The members of the course, the fee for which is 10 guineas, will be fully occupied from 9 a.m. to 5.30 or 4.30 p.m. on each week day. The course will be opened by an introductory address from Professor Sims Woodhead on the first morning, and the various subjects will be dealt with as follows: Protozoology and parasitology, Professor Nuttall, Dr. Keilin, and Dr. Hinde; pathology of nervous system, Dr. F. W. Mott; tumours, Dr. Nicholson; special pathology and morbid anatomy, Mr. Strangeways; biochemistry, Professor Hopkins, Mr. Baveroff, and Dr. Marrack; bacteriology, Dr. Graham-Smith and Dr. Harvey; epidemiology, Mr. Greenwood; and therapeutics, Dr. Dixon.

Sydney.

THE INFLUENZA EPIDEMIC.

WE are now (February 20th, 1919) in the fourth week of an epidemic of what is called here "pneumonic influenza." The disease reached our shores last November from New Zealand, and was carefully prevented from gaining any ground outside the quarantine area until last month. Then it was introduced into this state from Victoria, where it was not at first recognized as the virulent form of the disease, and no precautions were taken to prevent its spread. When the facts became known to the Board of Health, drastic measures, arranged some weeks previously, were at once put into force. The Government called to its assistance a consultative committee of the British Medical Association, and this committee, along with the officials of the Board of Health, have advised the Government on all the steps which have been taken to prevent the spread of the disease. All public meetings of any kind were prohibited; all theatres, picture shows, racing meetings, churches, billiard saloons, and hotels in the county of Cumberland were closed, and it was made compulsory for every person travelling in trains or trams, in all public places to wear a mask covering completely the mouth and nose; penalties were imposed upon those guilty of disobeying this regulation. The half-yearly sales in the large shops were also forbidden, as well as the statutory meetings of public companies.

Inoculation with a vaccine supplied by the Board of Health and other laboratories was strongly advocated, and several thousand persons were vaccinated. It is reasonable to suppose, in view of the experience in the neighbouring state of Victoria and in other countries, that these drastic measures have resulted in a considerable restriction of the outbreak. Up to date there have only been 198 cases; of these, 70 have been discharged cured, 8 have died, and 120 still remain in hospital. It is well to note, further, that a large number of the cases have occurred on steamers which brought troops and passengers from infected ports, and these have all been detained at the quarantine station. All inter-state traffic has been suspended, and no one is allowed to cross the border of Victoria into New South Wales without undergoing a period of quarantine at the border.

At the outbreak of the epidemic the pathological department of the Royal Prince Alfred Hospital volunteered to assist the Department of Public Health by preparing vaccine for inoculation. After some initial difficulties in the way of securing pure cultures of the bacteria from the quarantine station, and of obtaining a suitable culture medium, a considerable amount of vaccine has been prepared and distributed free to medical practitioners. The value of this, based on the charge made by the Commonwealth Government for their vaccine, is about £1,000. Each cubic centimetre of the hospital vaccine contains: *Bacillus influenzae* 250 million, pneumococci 500 million, streptococci 100 million, Gram-negative micrococci 100 million, and *Staphylococci citrei* 250 million.

VENEREAL DISEASES ACT.

The Venereal Diseases Act, which was passed at the end of the last session of the New South Wales Parliament, provides that every form of venereal disease, including gonorrhoea, gonorrhoeal ophthalmia, syphilis, soft chancre, venereal warts and venereal granuloma, must be treated by a legally qualified medical practitioner and no one else. No chemist is allowed to sell or supply any drug for the treatment of venereal disease except on the prescription of a legally qualified practitioner. All persons suffering from any form of venereal disease must within three days of becoming aware that they are so suffering consult a medical practitioner or attend at a hospital for treatment, and must continue under treatment until they receive a certificate that they are cured or free from venereal disease. The medical attendant must notify on a prescribed form that the patient is suffering from venereal disease, but the name and address must not be disclosed. The medical attendant must deliver a written notice to the patient directing attention to the infectious nature of the disease, and to the legal consequences of infecting others, and warning the patient against contracting marriage until certified under the Act as cured, and he must hand to the patient certain printed

prescribed information about the disease. Parents and guardians of children suffering from venereal disease must exercise their authority to compel the children to undergo treatment. It is made lawful for a medical practitioner who has reason to believe that a person suffering from venereal disease is about to marry, to inform the other party, or the parent or guardian of that person, or the Commissioner. All persons aware that they are suffering from venereal disease who marry are liable to imprisonment for a period not exceeding five years or to a fine of £500. A fine of £100 or imprisonment for not more than twelve months is the punishment for knowingly infecting any other person with venereal disease. The medical practitioner who without negligence gives any certificate or notice under the Act is protected against civil or criminal action in respect of such notice. The Act also provides heavy penalties on the owners or occupiers of houses for allowing persons suffering from venereal disease to occupy rooms for prostitution. The advertisement of any medicine or appliance for the treatment of venereal disease with the object of promoting its sale is forbidden. This also applies to any disease affecting the generative organs or functions, or of sexual impotence, or of any complaint or infirmity arising from or relating to sexual intercourse, or of female or menstrual irregularities. Penalties are also provided against any person who, knowing himself to be suffering from venereal disease in an infectious stage, continues in any employment which requires him to handle food intended for human consumption; and against any person who knowingly continues to employ a person suffering from venereal disease in an infectious stage, in any capacity requiring him to handle food intended for human consumption. Dr. R. T. Paton, the Director-General of Public Health, has been appointed Commissioner for the purposes of this Act.

Correspondence.

HYPNOTISM, SUGGESTION, AND DISSOCIATION.

SIR,—How gracious is Omniscience to Ignorance! I put a question to the Universe at large, a question that neither deserved nor anticipated an answer, a rhetorical question, such as Where shall wisdom be found? Where are the snows of yester year? or the question of jesting Pilate—What is Truth? and lo! from the vasty deep of the psychological laboratory of King's College an answer is vouchsafed to me. 'Who,' I asked, 'knoweth not such things as these?' And straightway I receive the authoritative reply 'Dr. William Brown.'

Light hypnosis, says Dr. Brown, is new. So it is—comparatively. There is no record of its use by Esculapius, but then there is no record of the use of any other mode of treatment by Esculapius, so that the absence of record does not go for much. The comparatively modern Hippocrates does not mention it, nor does the still more nearly up-to-date Galen, but it was used in the eighteenth century by Mesmer as a means of re-associating mental dissociations. I cannot give the reference, which is now dissociated from my personality, or, as we used to say in the Dark Ages before the 'inception' of psychological laboratories, I have forgotten it; but I remember well enough reading an account of the recall of lapsed memories by a patient hypnotised by Mesmer.

What really is new is calling a lapsed memory a dissociation. In psychology, to alter the name of a thing is to make a new and momentous discovery. The method is of German origin, and was received before the war with the reverence accorded to every innovation that was made in Germany respecting mental science; but an uneasy thought crosses my mind—I should say, becomes associated with my personality—: Is it after all completely up-to-date to ignore the war and all the lessons it has taught us? It has established beyond dispute the rottenness of German methods and the contemptible minds of the German professors. The theory—or fact—of dissociation did not originate in Germany, it is true, but the ingenious innovation of calling a lapsed memory a dissociation is modelled upon the German method, and is, I fear, not as completely up-to-date as it was twenty years ago.—I am, Sir, your obedient servant,

Parkstone, Dorset, May 12th.

CHAS. MERCIER.

. This letter is printed *verbatim et literatim*.

SIR,—The readers of the *BRITISH MEDICAL JOURNAL*—even if readers of *The Times* are denied the privilege of being informed—are among those whose art is guided by “the fervour and faith and courage of those who toil,” and for this reason they are entitled to know the proper therapeutic value of hypnotism. Although it is not an enviable procedure to interfere in “family quarrels,” because both disputants have an unpleasant way of turning round to rend the rash person who intervenes, yet I feel that in this instance certainly the truth must lie between two extremes, one of which was expressed by Dr. Mercier in *The Times* of April 22nd to be “the uselessness of hypnotism as a method of therapeutics,” and that in consequence he had abandoned the practice. After explaining that Charcot often employed light hypnosis, Dr. Mercier added, in *The Times* of April 25th, that “no patient of mine has ever received any benefit from hypnosis”—a very definite, positive, and categorical statement. The other extreme was expressed by Professor William Brown in *The Times* of April 26th, when he stated that the condition of light hypnosis allows the physician to recall certain emotional memories with great vividness, this recall effecting cures in hundreds of consecutive cases, and which, so far as could be ascertained to date, proved to be permanent recoveries through the aid of hypnotism.

I should like to add that my own experience in the main supports Dr. Mercier's, because I have had occasion to use hypnosis mainly for the psychoses—that is, for mental cases whom it has failed to relieve; but I have watched its use, and have also to a limited extent practised it myself, in the neuroses, with what I can only describe as marvellous results. I have, as its effects, seen the dumb speak, the blind see, the maimed and the halt made whole, and stammerers cured. Herein lies the difference between results under these two eminent authorities; Dr. Mercier, with a wide reading, a wealth of knowledge, and practical experience, refers mainly to mental cases—which his practice has naturally included and covered; whereas Professor William Brown, with an equally full knowledge, guided by a complete acquaintance with the literature of the subject, as well as by its practical application, refers to the neuroses, in which mental dissociation or repression, or whatever the condition may be—and this is uncertain—is often dependent upon one overwhelming emotion; it is temporary, and it is far less marked than it is in the psychoses; so that, although there is no definite line of demarcation between them, yet the “mind”—the attention and feeling, cognition, and conation—is able to work with the physician in the one, whilst it cannot be seized or held in the other.

The two conditions are not really comparable, although the one may merge into the other; yet throughout the war all the psychoses have been treated, so far as registration or certification has been concerned, as “hospital” cases, and wisely so; and they have had the advantage of the newest practices and methods of the physician psychologist, but it must not be assumed that the practice of the psychiatrist in another field must be scrapped, or that it is useless and out of date. The treatment of the neuroses and psychoses has been most successful during the war, because they have come under treatment early, even within a few hours of the onset of symptoms, and it is the similar application of this early treatment that is now anxiously awaited for the civilian.—I am, etc.,

London, S.W., May 12th.

ROBERT ARMSTRONG-JONES.

DISAPPOINTMENTS AFTER GASTRO-ENTEROSTOMY.

SIR,—My friend Dr. Gillman Moorhead is undoubtedly right in his explanation of the disappointing results not infrequently met after gastro-enterostomy for gastro-duodenal ulceration. Within the last ten years I have seen a considerable number of short-circuited cases, operated on by the pioneers of gastro-duodenal surgery in this country, in which the benefit produced by operation was either negligible or was fugitive, the benefit extending only to a few weeks or months. In some of these cases the persistence of unhealed ulcer, more often the existence of fresh ulcer, was suggested by clinical evidence only; in others it was proved by further operations.

Dr. Moorhead's statement that gastro-jejunal ulceration is a more common sequel to gastro-jejunostomy than is generally believed I can also fully endorse, by clinical evidence in some cases, by actual inspection of the ulcer in others. In three of these operations had been undertaken two, three, and four times, the occurrence of jejunal ulcer being the signal in two cases for closing of one artificial route and opening of another. In each case each operation except the last was followed by fresh jejunal ulceration, demonstrated on the table, the last operation being again followed by clinical signs of fresh ulcer, for which surgical aid was not invoked. In one of these cases—the worst—cure was finally effected by medical treatment. Persistence of ulceration in the gastro-duodenum, or formation of a fresh ulcer in the jejunum, are then, as Dr. Moorhead truly says, the causes of many disappointments after gastro-enterostomy.

But these, important as they are, are only secondary causes. They are, at least in many cases, dependent on persistence of the original condition which first gave rise to gastro-duodenal ulceration. Again and again have I seen short-circuited cases in which the persistence of an infective focus was associated with fresh crops of gastro-duodenal ulcers, and in which removal of this focus was abruptly followed by a cure, measured not in weeks or in months, but in lustra—of five years and more. Sometimes the focus is found in septic stumps (pyorrhoea), sometimes in an infected antrum. In other cases an infected tonsil is at fault, or an infected kidney or lung. In others, again, no focus can be found, and in these the outlook is uncertain. But, as I suggested in 1903, the action of gastrolytic toxins released from infective foci offers a reasonable explanation not only of the initiation of gastro-duodenal ulcers, but also of their inherent tendency to recur so long as the infective focus, which gives these toxins birth, persists. The true chronic ulcer, which, for mechanical reasons impeding repair, persists long after an infective focus has disappeared, can only be cured—in its worst forms—by mechanical means. This is a legitimate object for the surgeon's skill, and for it gastro-enterostomy is the ideal treatment when the failure of less drastic methods has revealed its true nature. But the recurring ulcer, which is often mistaken for the true chronic ulcer, and which is peculiarly liable to recur in the jejunum after gastro-jejunostomy, should not be submitted to the surgeon, until at least it is certain that no infective focus can be found to account for the fact of recurrence.

Dr. Moorhead suggests, no doubt with reason, that improvement in surgical technique may give better results, though I have not noticed that failures are less frequent to-day than five years ago. As already stated—and it is difficult to overestimate its importance—the chief reason for the disappointments after gastro-enterostomy for ulcers appears to be failure to recognize that ulcers of the stomach, duodenum, or jejunum are liable to recur so long as their essential cause persists, this cause in many cases being the continued presence of an infective focus somewhere in the body. This is only another way of saying that in cases of recurrent ulcer—and the majority of all gastro-duodenal ulcer cases are recurrent—disappointment is best avoided by refusal to operate, or to countenance operation, until an exhaustive clinical and bacteriological examination has been made of all the accessible organs. Many of these cases are operated on to-day, on first or second attacks, without a full examination of this nature, with the not infrequent result that disappointment ensues, and that a most valuable method of treatment for the true chronic ulcer becomes discredited.—I am, etc.,

London, W.

EDWARD C. HORT.

SIR,—I have examined by x rays many cases after this operation. I see, as a rule, only the unrelieved cases or those in which symptoms have returned. With the former I do not wish to deal here. In the latter I find that the anastomosis seems to act too well, and in many cases the stomach empties in five to ten minutes. We may presume that before the operation the intestines are in a normal condition. We know how the stomach gives trouble owing to imperfect preparation of food in the mouth. Is it not likely, then, that the intestines resent the presence of food which has not been completely prepared in the stomach? The symptoms I find are much as described by Dr. Hutchison under “functional disorder.” I have known

an interval of seven years between the operation and the onset of symptoms, but two or three is more usual. I have had the opportunity of examining some cases that have had no return of symptoms, and I find that this rapid emptying does not occur.

Cynically I have said that the gastro-enterostomy which is the most successful is the one which does not ultimately work. The operation in most cases is wonderfully successful considering the disturbances of the physiological processes which must take place, and it is a pity that an operation has not yet been devised which would avoid these disturbances.—I am, etc.,

Leeds, May 12th.

LEO. A. ROWDEN.

PROPHYLACTIC USE OF QUININE IN MALARIA.

SIR,—The remarks of Sir Ronald Ross (May 3rd, p. 558) regarding quinine prophylaxis are of great interest, and especially the statement that he is inclined to abandon the theory of the direct action of quinine on the malarial parasites and to adopt the hypothesis that quinine acts by stimulating the production of antibody.

When working at this subject in 1910-11 I assumed the following working hypothesis to explain the action of quinine on the malarial parasite:

- (a) That when the sporulating forms break up and liberate their spores in the plasma the liberated spores are provided with an exotoxin by which they are protected against the normal defensive mechanism of the blood.
- (b) That during this protected period the spores enter the red blood corpuscles.
- (c) That they then cease to act as foreign bodies in the plasma, being enveloped by the host.
- (d) That the diffusion of their toxin is the cause of the paroxysm of fever.
- (e) That the beneficial effect of quinine on the disease depends upon its ability to remove the protection afforded by the enveloping corpuscle to the contained parasite.
- (f) That quinine effects this by acting as a haemolyzer of the infected red corpuscles.
- (g) That, its protective envelope being removed, the parasite is dealt with by the normal defensive mechanism of the blood.

In support of this hypothesis I showed experimentally that quinine administered to a healthy person (who had previously had malaria, and who was exposed to daily infection) was followed by a marked increase in the excretion of urobilin in the urine.¹ My article concluded with these words, "To exclude the possible influence of malarial infection, a similar experiment in a non-malarious country on persons who have never suffered from malaria is very desirable."

As a substitute for the above hypothesis, the theory that quinine acts by stimulating the production of antibody is attractive, but it would fail, I believe, to explain the increased excretion of urobilin shown to follow the administration of quinine to a patient who had previously suffered from malaria.—I am, etc.,

Kidlington, Oxon, May 8th.

W. M. GRAHAM, M.B.

SIR,—Colonel G. T. Rawnsley's letter on this subject in your issue of April 19th is interesting, but I trust no one will consider it conclusive as to the prophylactic use of quinine for malaria.

Let it first be recognized that there is no acute malaria (of any type) that does not usually react to a timely dose of 10 grains of quinine. If this be a fact (and I say it is), then a prophylactic dose does not require to exceed this amount. But the frequency and the division of the total dosage depend upon the local degree of infectivity—that is, the possibility of infection by mosquitos, say, daily. Consequently one can easily understand why, in 1916, 5 or 10 grains given on two successive days in the week proved failures. Infection occurred in the intervals, and while acute attacks were prevented time was permitted for new spores to carry on the infection. This holds good for 1917—namely, (a) 10 grains on two successive days weekly, and (b) 10 grains on two successive days twice weekly. Now we come to the larger doses employed in 1917—(c) 10 grains daily, (d) 15 grains daily, (e) 20 grains daily. In each of these cases these doses were given temporarily, that is, a few days before and a few days after coming out of highly malarial parts of the front trenches. Whilst excluding the necessity for giving 20 grains and permitting the two former doses, I submit that the short period of

carrying out these prophylactic doses is in itself complete evidence for the failure of the incidence of malaria. It is not surprising that after "some weeks" (why the definite number of weeks is not stated I do not know) there was no reduction in the incidence of malaria, and I presume none of these cases went to an absolutely free malaria area, and consequently any spores in any of them or reinfection from their area would suffice to account for the "80 to 90 per cent. of the units infected." What should have been done was the daily administration of quinine to all of these men for a period of "some weeks" after they returned from the trenches, and quininization of them on alternative dates up to the fourth month from the trenches or from the malarial area.

We are not told the incidence of malaria during the dosage whilst under campaigning conditions. Therefore, to conclude that "no dose could be tolerated that had any protective value to troops under campaigning conditions" is unjustifiable. The failure resulted not from dosage, evidently, during campaigning, but from failure of regular quininization for a definite and sufficient period thereafter.—I am, etc.,

London, N., April 19th.

A. G. NEWELL, M.D., D.P.H.

SCOPOLAMINE-MORPHINE IN CHILDBIRTH.

SIR,—Mr. Webb-Johnson's letter in your issue of April 26th, p. 531, leads me to suggest that a safe method of relieving the severer pains of labour, which is all that really matters in most cases, lies in the hands of every practitioner, however busy he may be. My method—which, no doubt, has been adopted by many others besides myself—is as follows. Any idea of producing "twilight sleep" from first to last is abandoned. The patient is encouraged to believe that she will not be allowed to suffer, at all events for any length of time, any pain beyond what she can bear with reasonable ease. Now, it is well known that the alkaloids fail to act as desired if the initial dose is administered alone after the pains have become strongly established, but if chloroform is given in sufficient quantity to produce "surgical anaesthesia" for a few minutes after the initial dose of alkaloids, "twilight sleep" is readily established as the effects of the chloroform pass off.

As soon, then, as the pains begin to become severe the initial dose of alkaloids is administered, and, the doctor having been sent for, puts the patient under chloroform. As the effect of the latter begins to wear off he can leave the case, all being well, for two and a half to three hours. Among the majority of normal multiparae, and in many primiparae, this is all that is necessary as far as the alkaloids are concerned. The second stage is now often far advanced, and may be completed with light chloroform anaesthesia as in ordinary cases. Otherwise one or more minute doses of hyoscine, repeated every two hours and reinforced, if necessary, by momentary "surgical anaesthesia," is all that is needed to relieve severe pain. In delayed labour this treatment may be continued until the perineum begins to distend, when resort may be had, as before, to light chloroform anaesthesia, the alkaloids being stopped, or, if necessary, forceps may be applied under deep anaesthesia, as in ordinary cases.

When producing "surgical anaesthesia" for the purpose of initiating or reinforcing the effect of the alkaloids, it is usually necessary merely to induce, not to maintain this state. Any delay to labour caused by chloroform thus exhibited is so transient as to be negligible. One does not claim that this method is "fool-proof" nor that it is always infallible, but the margin of safety to mother and child, always reasonably wide, is increased practically to infinity in the hands of any practitioner accustomed to administer chloroform at childbirth, while the cases in which severe pain is not prevented are very exceptional. It will be noted that the use of the alkaloids is reduced to a minimum.—I am, etc.,

V. CHASTEL DE BOINVILLE, M.D.,

Capt. R.A.M.C.(T.),
Late Honorary Anaesthetist David Lewis Northern
Hospital, Liverpool.

April 28th.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—From the correspondence under the above heading it appears that the treatment of the bladder by avoiding all catheterization and allowing the bladder to overflow,

¹ *Ann. of Trop. Med. and Parasitology*, vol. v, No. 5, December, 1911.

assisted by massage, is regarded as a fairly new method evolved during the recent war. In reality, this method is now at least twelve years old, and was being employed by the late Dr. John B. Murphy when I visited some of the Chicago clinics in the year 1906. Dr. Murphy, in *Surgery, Gynecology, and Obstetrics* of April, 1907, wrote, in regard to complete post-operative paraplegia:

The bladder should not be catheterized; the patient should have a vaginal or proctal massage until overflowing is produced. The urine, when started, will continue to flow. If the catheter is once used, it will have to be used continually, and decomposition of urine will result, which will necessitate frequent vesical irrigation, greatly increase the labour in caring for the patient, and very materially hazard his life, as vesical and ascending renal infection is the most common cause of death after operations for injuries to the spinal cord.

—I am, etc.,

Plymouth, April 26th.

C. HAMILTON WHITEFORD.

DEMOBILIZED OFFICERS AND RESIDENT APPOINTMENTS.

SIR,—In October, 1914, I relinquished a resident appointment to join the army, from which I have been recently demobilized after four years' active service.

I have been applying since my return home for various junior resident appointments (hospital, etc.) similar to those I held before the war, but apparently my absence from clinical work for so long debars me from obtaining one of these posts, and I learn from other ex-army M.O.'s I meet that their experience resembles mine.

One would like to know the attitude towards such cases of the medical men on hospital staffs (especially those who are members of the British Medical Association); also the experience of medical men generally who are being demobilized after long service in the field as R.M.O.'s or field ambulance M.O.'s.

I notice advertisements of posts in the *BRITISH MEDICAL JOURNAL* offering salaries much below pre-war rates. Is this due to a surplus of doctors, or what are the causes at work?—I am, etc.,

May 11th.

EX-R.M.O.

Obituary.

JOHN MACCOMBIE, M.A., M.D.,

Late Medical Superintendent in the Metropolitan Asylums Board. DR. MACCOMBIE, late Medical Superintendent in the Metropolitan Asylums Board, died on April 24th, at the age of 68. He had retired about three years, and during the greater part of that time suffered from the trying illness which resulted in his death.

John MacCombie was the son of Mr. William MacCombie, the first editor of the *Aberdeen Free Press*, and was educated at the Aberdeen University. Early in his medical career he joined the service of the Metropolitan Asylums Board at the Eastern Hospital. His first appointment as medical superintendent was at the small-pox hospital at Limehouse, from which he was transferred to the South-Eastern Hospital at New Cross, where he remained for a number of years. He was chosen to advise in the construction and to take charge of the Brook Hospital, and for the last few years before his retirement was medical superintendent of the North-Western Hospital.

He was the author of the articles on small-pox and chicken-pox in Allbutt's *System of Medicine*, and was the acknowledged authority on small-pox for many years. He had great gifts as a diagnostician, and these, combined with his natural caution and observation of detail, made his opinion sought for in difficulty. To work under MacCombie was a delight, for to those he deemed worthy he freely imparted from his store of experience; no trouble was too great, no detail too small, and the points of a case were explained with a thoroughness which was impressive and characteristic. He was an accomplished lecturer on hospital administration and fevers; his style was clear, concise and simple, and he was held in high esteem by his students.

It was, however, as an administrator that John MacCombie shone above others. He was always thinking of, and discussing, how the hospital to which he was attached could be improved, down to the smallest particular, and the result is shown in the Brook Hospital,

which stands as a monument to his capacity. Even now, twenty odd years after its erection, it remains one of the finest fever hospitals in the world. There can be no doubt that he approached the ideal of the head of a hospital; always thinking how to regulate the routine, how to save his staff from falling into error, and how to make their life in his hospital as full of comfort as he could. Socially he was a charming man, devoted to his friends, a keen golfer, and gifted with a dry sense of humour. He will be sadly missed by many.

He is survived by his wife, who was his enthusiastic supporter, and two daughters. He had two sons, of whom one fell in France, and the other died in infancy.

CAPTAIN A. C. STURDY, M.C., F.R.C.S.,
Honorary Secretary, Horsham Division, British Medical Association.

CAPTAIN ARTHUR CARLILE STURDY, M.C., R.A.M.C., died of dysentery in the Colaba Military Hospital, Bombay, on May 1st, aged 36. He was the second son of the Rev. H. C. Sturdy, and was educated at St. Paul's School, Cambridge University, and St. Bartholomew's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1909, and the F.R.C.S. in 1912. After filling the posts of house-surgeon and intern midwifery assistant at St. Bartholomew's, and of senior resident medical officer at the Royal Free Hospital, he went into practice at Horsham, Sussex, where he was surgeon to the Horsham Cottage Hospital. He took a temporary commission as lieutenant in the R.A.M.C. in 1915, and was subsequently promoted to captain. At the time of his death Captain Sturdy was on his way home from Mesopotamia where he had been serving nearly eighteen months. He had served for two years in France, and part of the time of his service on the western front was spent as medical officer to the 2nd Hampshires, and with that regiment he gained the Military Cross on July 26th, 1917. The official record states that "he attended wounded for many hours under heavy fire. He showed a complete disregard for danger in organizing search parties, and recovered wounded who had been left for several days." Captain Sturdy was honorary secretary of the Horsham Division of the British Medical Association, in which office he did admirable work for the profession and the Association. Dr. Mark H. H. Vernon, chairman and acting secretary of the Horsham Division, writes: "His unexpected death after three and a half years' active service comes as a great shock to his many friends. He was a loyal and able colleague always to be relied upon, and loved and respected by all with whom he was brought in contact. His death makes a gap which it will be hard to fill."

DR. GUY BLACK, who died on April 9th, in his 43rd year, was the eldest son of Mr. James Black, late lecturer in anatomy to Westminster Hospital Medical School. He received his education at St. Paul's School and Dulwich College, and entered St. Thomas's Hospital in 1894. After taking the diplomas of M.R.C.S., L.R.C.P.Lond., he graduated M.B.Lond. in 1900 and started work in Norwood and Thornton Heath. Undoubtedly he worked too long and too hard, for not until he had been in practice for eleven years did he take a holiday, and on the eve of his departure for Switzerland he poisoned his thumb, and was obliged to return to England at once, when he passed through a serious illness. As the prolonged strain had undermined his constitution, he gave up his practice and went to live at Rotherfield in Sussex to recuperate. When the war broke out he took charge of a friend's practice, working with his accustomed thoroughness and energy; the influenza epidemic added immensely to the strain, and gradually increasing anaemia and breathlessness led him to consult Sir Thomas Horder, who diagnosed gastric ulcer. He placed himself under the care of Dr. Turney and Mr. Nitch at St. Thomas's, but he went downhill so rapidly that the operation, which can only be described as a forlorn hope, was unavailing. Dr. Black was a mechanic of no mean order, and there were few "jobs" in the house or garage that he could not perform as well as a skilled workman. He furnished a house he bought at Norwood with many valuable works of art, but unfortunately died before he could settle there. He leaves a

widow and one daughter, aged 6. The funeral took place at Rotherfield on April 12th, and the esteem and respect in which he was held was shown by the crowds of his old friends and patients who filled the church and lined the village street—truly an eloquent testimony to work well done.

LIEUT.-COLONEL EDWARD FORSTER DRAKE-BROCKMAN, Madras Medical Service (retired), died at Hatch End on May 1st, aged 76. He was educated at St. George's Hospital, and took the diplomas of M.R.C.S. and L.R.C.P. Lond. in 1865, and also the F.R.C.S. in 1878. After acting as prosector to the Royal College of Surgeons, England, in 1865, he entered the I.M.S. as assistant surgeon on October 1st, 1866, becoming surgeon on July 1st, 1873, surgeon-major on October 1st, 1878, and brigade surgeon on April 21st, 1890, retiring on April 4th, 1894. After holding the professorship of physiology in the Madras Medical College from 1870, he was in March, 1875, appointed to the chair of ophthalmic surgery, and to the post of superintendent of the Madras Eye Infirmary, and held these appointments for many years till his retirement. He was the author of many papers on his speciality, mostly published in the *Ophthalmic Review*. From August, 1897, to June, 1900, he was a member of the Medical Board at the India Office. He was at one time the representative of the South Indian and Madras Branch on the Central Council and of the Parliamentary Bills Committee of the British Medical Association.

THE death of Dr. JOHN W. HITCHCOCK, in Nigeria, where he was a medical missionary, will cause sorrow to a wide circle of friends. After obtaining the diplomas of the Scottish Colleges in 1910, and the F.R.C.S. Edin. two years later, he joined the United Free Church of Scotland mission at Uburu, South Nigeria. A friend serving in the British Expeditionary Force, France, writes: "Hitchcock combined in a most unusual degree intellectual power and width of mental horizon, with a wonderful memory, and extreme assiduity. As a medical student he was *facile princeps* of his year. He took a vivid interest in his profession, and but for the great demands upon his time, both as physician and surgeon, would doubtless have been heard of before this in the scientific world. His insight into the mental life of the people to whom he devoted his powers, his sympathy, kindness and sagacity, and his enormous capacity for work have created a sphere of beneficent influence in Nigeria, which is now suddenly made vacant, and will with difficulty be filled again. To his relatives and intimate friends sorrow for his early death far from home will be mingled with admiration for the whole-hearted nobility of his aims."

DR. JAMES JACKSON PUTNAM, the distinguished American neurologist, who died on November 14th, 1918, was born in 1846, and took his degree at Harvard in 1869. Afterwards he studied at Vienna under Rokitansky and Meynert, and later in Berlin, Paris, and London, where he worked with Hughlings Jackson. In 1872 he was made lecturer on nervous diseases at Harvard. In 1893 he became professor, continuing to occupy the chair till 1912, when he retired with the title of emeritus professor. In 1874 he was appointed neurologist to the Massachusetts General Hospital, where he established one of the first neurological clinics. He also started in his own house a neuropathological laboratory, out of which has grown the present department of neuropathology in the Harvard Medical School. Dr. Putnam was the author of more than a hundred publications, including a volume on human motives. His reputation was worldwide, and to him Pierre Janet dedicated his book on the medical symptoms of neurasthenia. He took a leading part in the promotion of social service in hospitals, and was an active supporter of the mental hygiene societies and associated charities. He was described by President Lowell as "philosopher and saint."

DEPUTY SURGEON-GENERAL JOHN HENDERSON, Madras Medical Service (retired), died suddenly at Upper Norwood, on April 12th, aged 86. He was born on December 23rd, 1832, entered the I.M.S. as assistant surgeon on February 20th, 1856, became surgeon on February 20th, 1868,

surgeon-major on July 1st, 1873, brigade surgeon on March 1st, 1883, and deputy surgeon-general on May 16th, 1885, retiring on July 1st, 1888.

DEATHS OF SONS OF MEDICAL MEN.

Captain W. Newlyn Gale, 2/4th York and Lancaster Regiment, elder son of Dr. A. K. Gale of Norton Woodseats, -heffield, previously reported missing near Bullecourt on May 3rd, 1917, is now presumed killed on that date, aged 22.

Captain E. Middleton Knott, Royal Air Force, aged 20, only son of Dr. E. M. Knott of Sutton Coldfield, was killed in a flying accident at Kenley on May 3rd.

The Services.

R.A.M.C. FUNDS.

THE annual general meeting of the R.A.M.C. Fund will be held in the library of the R.A.M.C. College, Grosvenor Road, S.W., at 2.30 p.m., on Wednesday, June 11th, 1919. The Director-General will preside.

It is hoped that subscribers will attend and express their views on any point connected with the fund. The annual general meeting of the R.A.M.C. Benevolent Society will take place immediately afterwards.

Officers desiring information regarding these funds are requested to communicate with the secretary (Lieut.-Colonel E. M. Wilson, 124, Victoria Street, S.W.) beforehand, so that there may be no delay in dealing with any questions asked.

Miss Dorothy C. Hare, M.D., Assistant Director (Medical), W.R.N.S., has been appointed a Commander (Military Division) in the Order of the British Empire, in recognition of valuable services in connexion with the war.

Universities and Colleges.

UNIVERSITY COLLEGE, LONDON.

COURSES for the Primary Fellowship Examination of the Royal College of Surgeons of England in Anatomy and Physiology will be taken by Mr. T. R. Johnston and Mr. D. T. Harris respectively at University College, London, beginning on June 3rd. The courses will be suitable not only for the ordinary examination, but also for the special examination in November for R.A.M.C. officers. Full particulars can be obtained from the secretary of University College.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia of the Royal College of Physicians was held on May 8th, when the President, Sir Norman Moore, Bt., was in the chair.

The following members, who were elected to the Fellowship at the last Comitia, were admitted Fellows:

John Douglas Stanley, M.D. Edin. (Birmingham), Ernest Bosdin Leech, M.D. Camb. (Manchester), Henry Devine, M.D. Lond. (Portsmouth), Henry Letheby Tidy, M.D. Oxon. (London), George Augustus Auden, M.D. Camb. (Birmingham), David Henriques de Souza, M.D. Lond. (London), Alexander Edward Gow, M.D. Lond. (London), Albert Ernest Naish, M.D. Camb. (Sheffield), Robert Skoegh Frew, M.B. Edin. (London), George Herbert Hunt, M.D. Oxon. (London), Philip Hamill, M.D. Camb. (London), James Leatham Birley, O.B.E., M.B. Oxon. (London).

It was left to the President to nominate delegates to represent the College at the Congress to be held by the Royal Sanitary Institute at Newcastle-on-Tyne.

Leave was given to Dr. Reginald Pratt, M.R.C.P., to resign the Membership of the College as requested by him.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A MEETING of the Council was held on May 8th, when Sir George Makins, President, was in the chair.

Diplomas of membership were granted to 74 candidates found qualified at the recent examinations. Diplomas were granted to 24 candidates found qualified for the licence in dental surgery.

Mr. Cuthbert S. Wallace, lecturer on surgery, St. Thomas's Hospital, was elected a member of the Court of Examiners.

Dogs' Protection Bill.

The President reported that he had undertaken to take part in a deputation in opposition to the Dogs' Protection Bill. The following resolution was passed by the Council:

The Council of the Royal College of Surgeons of England are of opinion that the Dogs' Protection Bill if passed into law will seriously impede the progress of medical science in this city, and they view with grave concern the proposal to prohibit a form of research through which knowledge of great value as regards the cure and treatment of disease has been acquired in the past.

Medical News.

DR. NORMAN WALKER has been reappointed Inspector of Anatomy for Scotland.

THE American fund for the assistance of French wounded now amounts to over £100,000.

THE Legislature of Nebraska has recently granted £30,000 to the College of Medicine at Omaha for the ensuing two years. This amount includes provision for the maintenance of a University Hospital.

AT the annual meeting of the Medical Society of London, on May 12th, Mr. Vincent Warren Low, C.B., F.R.C.S., Surgeon to St. Mary's Hospital, was elected president for the session beginning next October; and Mr. Donald Armour, C.M.G., F.R.C.S., and Dr. William Henry Willcox, C.B., C.M.G., honorary secretaries.

MESSRS. WILLIAMS AND NORGATE announce the approaching publication, under the title, *Index Generalis*, of a year-book of the universities, giving particulars of the faculties and teachers in each. It will be published in Paris (Gauthier-Villars et Cie.) under the direction of Dr. R. de Montessus de Ballore, professor at Lille.

DR. S. ZARCHI, who about a year and a half ago resigned the post of temporary physician to the out-patient department of Victoria Park Hospital, London, E., and went to Russia to join the army, has returned to London recently in the capacity of a councillor (non-medical) of the delegation of the Ukrainian Republic in Paris.

THE Aberdeen University Club will hold its sixty-first half-yearly dinner (the first since June, 1914) at the Imperial Restaurant, Regent Street, London, on Thursday next, May 22nd, at 7.30 p.m., when the chair will be taken by the Duke of Richmond and Gordon. The Honorary Secretary, Dr. W. A. Milligan, 11, Upper Brook Street, W.1, asks that notification of intention to be present should be made to him at once.

THE Dreadnought Seamen's Hospital, Greenwich, has lost by resignation the services of Mr. William Turner, M.S., F.R.C.S., senior surgeon, who joined the staff in 1896, and of Sir Malcolm Morris, K.C.V.O., F.R.C.S., Surgeon for Diseases of the Skin, who took office on the founding of the London School of Clinical Medicine in 1905. Both have been elected members of the consulting staff.

THE North-Western Tuberculosis Society, which is open to medical practitioners in Lancashire and Westmorland interested in tuberculosis, determined at a recent meeting to postpone consideration of the proposal for affiliation with the Tuberculosis Society or the Society of Medical Officers of Health, but at the same time expressed its appreciation of the efforts of the Tuberculosis Society, and those present agreed to become candidates for membership.

AMONG recent publications of the Department of Scientific and Industrial Research is a report by Dr. L. C. Martin, lecturer in the Technical Optics Department of the Imperial College of Science, on the performance of night glasses. One of the demands made by the war upon the optician was the production of efficient night glasses—that is to say, telescopes specially designed for the observation of objects in a feeble light, as, for example, during sniping operations in the morning and evening. The report discusses what magnifying power under the light conditions imposed should be used to give the best results in visibility, and gives conclusions which will be of value to makers of telescopes and field glasses.

AT the beginning of 1917 an Italian society for intellectual intercourse between allied and friendly countries was founded with its seat in the University of Rome. The Minister of Public Instruction set up a committee, with Senator V. Volterra as its president, to draft a plan for exchanging teachers and regulating the interscholastic relations of Italy with other countries. The objects, as set forth in a quarterly review entitled *L'intesa intellettuale* are briefly to favour more active intercourse between universities, scientific academies, and educational institutions generally; to promote knowledge of the Italian language in foreign countries; to facilitate exchange of publications and books and to make known the best Italian works by translations; and to secure co-operation in scientific work and its practical applications. Early in 1918 the committee submitted a scheme whereby an independent office for carrying out these objects of the society will be instituted in the Ministry of Public Instruction, consisting of a council of twenty-one members and an executive board with the Minister as head of both.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Atiology*, *Westrand*, London; telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, *Westrand*, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INFECTION BY LAMBLLIA INTESTINALIS.

W. A. W. S.—There is no clear evidence that any treatment of infection by *Lambllia intestinalis* yet devised has any effect. Woodcock and Penfold (BRITISH MEDICAL JOURNAL, March 18th, 1916, p. 409) observed recovery after treatment with beta-naphthol (15 grains) and bismuth salicylate (20 grains) thrice daily for several days. They also observed recovery after treatment with turpentine (the French *térébenthine*), 10 minims three times a day for four or five days, followed by guaiacol carbonate (5 grains) thrice daily for two or three days. But in other cases neither treatment had any success. Thymol also failed in their hands. Castellani (BRITISH MEDICAL JOURNAL, November 27th, 1915, p. 779), in a note on flagellate diarrhoea, advised methylene-blue by the mouth in cachets containing two or three grains, three times a day, and also by intestinal irrigation (1 in 5,000 or 1 in 3,000). The patient so treated should be informed that stools and urine will become blue. The treatment in most of his cases was followed by rapid decrease or complete disappearance of the flagellates within a few days. In a few obstinate cases he had to continue it for long periods, and he points out that in such a case the treatment should be discontinued from time to time to prevent the formation of methylene-blue concretions in the intestine. All these lines of treatment have been criticized by G. C. Low (BRITISH MEDICAL JOURNAL, March 25th, 1916, p. 450) and also by Dobell and Low (*Lancet*, December 23rd, 1916, p. 1055); these observers failed to note any beneficial effect, and Dobell, by systematic examination for a hundred days, showed that the *Lambllia* might be absent for many days at a time without treatment. Perusal of the literature rather suggests the conclusion that in those cases in which *Lambllia* infection is attended by diarrhoea, the diarrhoea may be due to some other cause, possibly dysentery.

LETTERS, NOTES, ETC.

CONDUCTIVE ANAESTHESIA BY THE INTRASACRAL EXTRADURAL INJECTION OF NOVOCAIN.

MR. PERCIVAL P. COLE (London, W.) writes: In your issue of May 10th Captain Meaker suggests that intrasacral conductive anaesthesia has not been employed in this country. This, however, is not the case. Some nine months ago the details of the method were communicated to me by Dr. Felix Rood, and it has been employed since then for cases under my care at the Cancer Hospital, London. The most extensive operation undertaken with its aid was a resection of the rectum by the perineal route. No general anaesthetic was necessary, and the result was satisfactory in every way.

PROFLAVINE OLEATE IN THE TREATMENT OF OPEN WOUNDS.

"PERIOSTEUM" writes: Dr. R. Atkinson Stoney's memorandum in the BRITISH MEDICAL JOURNAL of April 5th, p. 412, brings out a point of considerable interest in the treatment of the surgical wound of a guillotine amputation with bipp dressings. This preparation undoubtedly appears to be an excellent stimulus to the granulation tissue growth, but the great disadvantage is seen in the irritation to the bone of the amputation. Such irritation would appear to come from the bismuth subnitrate, as x-ray photographs have shown from time to time. A persistent sinus has often resulted from such treatment, and often the affected bone becomes so extensively necrosed that a further amputation is necessary, even after the reamputation has been performed which prepares the stump for the artificial limb. With this important consideration in view, I would propose that when such a dressing is meditated there should be no bone within direct reach of the bipp preparation, or that the proflavine oleate alone should be used where extensive bone surfaces are exposed.

HYPERPYREXIA IN INFLUENZA.

DR. GEOFFREY PRICE (Kineton, Warwick) writes: Mrs. B. apologized for sending for me, saying that she would not have done so but that she knew I was coming that way. She was up and about, and did not look ill, only she said her appetite had been poor for the last few days, and she did not feel quite up to the mark. Her temperature was 109°! The husband was getting over an influenza cold. Her little girl of twelve had had a few enlarged glands at the angle of the jaw, and loss of appetite. The temperature in both these cases was normal. I sent the mother to bed, and gave tinct. quia. ammon. ʒj every four hours. The next morning her temperature was 99°, and two days later she was fully recovered. There was no doubt about the temperature, as it was taken with the same thermometer that I use for all cases, and I took the temperature twice in the axilla.

THE LATE DR. H. W. DUN OF PORTSMOUTH.

DR. J. H. FREDERICK WAY (Honorary Secretary, Portsmouth Division) writes: Dr. Harry Winterton Dun, of 1, Baffins Road, Copnor, Portsmouth, died with tragic suddenness while interviewing a patient on October 11th, 1918, during the influenza epidemic. He had practised in Portsmouth for six years, and previously at Nelson (Lancs) and Gillingham (Kent), besides doing temporary work in other localities. Dr. Dun leaves a widow and two daughters (aged 11 and 9) inadequately provided for. Any one willing to help towards a fund being raised for their benefit is requested to send a subscription to Dr. T. A. Colt, 42, St. Edward's Road, Southsea, honorary treasurer of the fund. The following subscriptions are notified:

	£ s. d.		£ s. d.
Dr. L. Cole Baker	2 2 0	Dr. A. E. Marwood	2 2 0
Dr. H. E. Burch	2 2 0	Dr. F. G. H. Muggleton	2 2 0
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R.A.M.C.(T.)	2 2 0	R.A.M.C.(T.)	2 2 0
Dr. T. A. Colt	2 2 0	Dr. D. A. Sheehan	2 2 0
Dr. H. E. Crawley	2 2 0	Dr. T. S. P. Sparrow	2 2 0
Dr. A. E. Ellis	2 2 0	Mr. J. H. F. Way	2 2 0
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Capt. W. P. McEldowney,		R.A.M.C.(T.)	2 2 0
R.A.M.C.(T.)	2 2 0	Dr. A. Bosworth Wright	2 2 0

MEDICAL DEMOBILIZATION.

"JUVENIS" thinks the note to the letter signed "Z" in the JOURNAL of April 19th disingenuous. An imputation of this nature should not be lightly made; in this instance it is wholly mistaken. The note applied to the particular case of "Z's" son. Under the scheme of priority of the Central Medical War Committee he would, according to our estimate, have received sufficient points to ensure early release as soon as general medical demobilization began, provided he had filled up Form M.N.S. (M) 16 and returned it to the Ministry of National Service, as explained in the SUPPLEMENT of January 11th, 1919. For several months after the armistice only limited numbers of medical officers were released by the War Office, and the Committee's scheme of priority therefore, we believe, applied only to a limited extent. It should be remembered that the Committee at no time had the power to order any man's release. The Ministry of National Service was the Government department responsible for medical demobilization; it accepted the Committee's scheme and referred a number of cases to it; but the Insurance Commissioners and other public bodies also made recommendations for the release of individual medical officers.

Our correspondent complains that the scheme of the Central Medical War Committee was defective because (Part II) it provided for the demobilization of medical officers under 30 according to their age only, without counting the length of their service. This difficulty was early appreciated by the Central Medical War Committee, and the scheme was modified so as to meet it. All men whose demobilization the Committee recommended were put on an equivalent basis—that is to say, points for length of service and professional position were awarded to men under 30.

Whatever the merits or defects of the scheme of the Central Medical War Committee, it never came into full operation, because the Secretary of State for War upset it by issuing instructions, to quote his own words in the House of Commons, "that medical officers should be released from all theatres of war immediately it became possible to dispense with their services, and that the number employed should be reduced in proportion to the reduction in other arms as far as the large areas occupied and the wide distribution of troops in enemy territory permitted." As notified in the JOURNAL of March 29th, the Ministry of National Service wrote to the Central Medical War Committee on March 19th, stating that it had been decided to discontinue the functions of that Ministry in the selection and nomination of medical officers for release by the service departments concerned. The decision was to take effect from April 1st, and it was added that such responsibility as the Ministry had hitherto taken in regard to the safeguarding of the medical service throughout the country, and which it had been able to exercise by means of its powers and functions in connexion with the demobilization of medical officers, would cease on the same date. The Committee of Reference received a similar communication, and in consequence adjourned *sine die*. The Central Medical War Committee notified in the JOURNAL of March 29th (p. 383) that it

had come to the conclusion that its duties as advisory body for the Ministry of National Service were necessarily terminated. It held that its work in connexion with demobilization had finished, but as it could not be dissolved until the Annual Representative Meeting in July next it undertook that in the meantime it would continue, through its General Purposes Subcommittee, to assist so far as it could those members of the profession still or recently on service.

Our correspondent quotes cases of an officer demobilized against his will; of another officer demobilized who had no practice; of another who practised before the war as a dentist; and of another who was 29 at the time of demobilization. Such cases could no doubt easily be paralleled, although we do not consider that the demobilization of the dentist should be a grievance. As we have said, the scheme of the Committee might not have been free from defects, but so long as the Committee was allowed to continue its work a medical officer could appeal to it for special consideration of his claims. After Mr. Churchill's sudden action, and after the Ministry of National Service had retired from the work, the Central Medical War Committee ceased to have any *locus standi* in the matter, and the hardships suffered must be put to the account of Mr. Churchill.

SERVICE IN MALTA.

"MALTA, 1915," writes: I notice in the JOURNAL of March 29th two notes from medical officers who were in Malta in 1915 complaining of the injustice of service in Malta not counting for the 1914-1915 Star. Surely Malta was as much a theatre of war as many parts of France in 1915, or Cairo, for instance, and ribbons are given for these places. I was with other officers in training in 1915, and we were all sent abroad about the same date, some to Egypt and some to Malta. In both places casualties were received from the same campaign, Gallipoli, and they were about the same distance from the scene of operations. If the 1914-15 ribbon is to represent, as I believe the intention is, those who went abroad in 1915, then it is unjust to leave out Malta. It may be argued that if Malta were included so should Gibraltar; but the difference is this, that the troops in Gibraltar were sent there and had volunteered for garrison duty, but in Malta the hospital staffs, etc., were volunteers for active service and had gone abroad as such. Could not some representation in this matter be made through the British Medical Association?

"AGGRIEVED" writes: I applied to the War Office inquiring whether I was entitled to the "1914-15 Star," having served in 1915 in the transports and in Malta in the Mediterranean Expeditionary Force. I have received a reply "that service in Malta and in transports does not count as service in a theatre of war for purposes of the award of this star. It is regretted, therefore, that you are ineligible for this award." I write to ask whether the British Medical Association cannot agitate with the authorities so that service in Malta and in transports in the Mediterranean does count for this award. Speaking for myself, and doubtless numbers of others, it was not my choice that I was sent to Malta. On the voyage out we were attacked by submarine, and just missed by the torpedo launched at us. Later the ship in which I sailed was sunk. I went from Malta to Sicily in a hospital ship; that ship was sunk, and the third ship in which I returned from Sicily to England was also sunk. Meanwhile in Malta we were exposed to dysentery, malaria, and diphtheria, and amongst the officers in my mess were others who had had thrilling submarine experiences.

PRESCRIPTIONS CONTAINING COCAINE.

IN the Edinburgh Sheriff's Court on May 8th an Edinburgh doctor was summoned for giving a prescription for a supply of cocaine which did not bear the words "Not to be repeated." He admitted the error, but pointed out that the cocaine could not be separated from the carbolic acid which the gargle also contained. The chemist who dispensed the prescription was charged with so doing. The fiscal accepted the view that the offence was due to inadvertence in both cases, and the sheriff, who concurred, said that it was consistent with justice to impose a fine of £1 in each case.

THE appointment of medical referee under the Workmen's Compensation Act, 1906, for the Grays, Thurrock, and Southend County Courts, in Circuit No. 38, is vacant. Applications to the Private Secretary, Home Office, by June 4th.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address ON THE DIAGNOSIS AND NOMENCLATURE OF DISEASE.

DELIVERED ON MARCH 25TH BEFORE THE MEDICAL SOCIETY
OF THE ONTARIO MILITARY HOSPITAL, ORPINGTON.

BY

R. D. RUDOLF, C.B.E., M.D., F.R.C.P.,

COLONEL C.A.M.C.,

CONSULTING PHYSICIAN TO THE CANADIAN FORCES IN ENGLAND.

SOME of us heard at the Royal Society of Medicine the other evening a delightful address by Dr. Henry Head upon disease and diagnosis.¹ This is a subject upon which we all must have thought a great deal, and when your secretary asked me to give something at this meeting, I felt that it might be useful, certainly to me, if we could discuss the matter a little.

When a practitioner is called to see a patient, he is sent for in order that he may cure the disease or relieve the suffering of the afflicted one. In order to do this efficiently his first step is naturally to try and find out what the trouble is—in what way the sufferer is deviating from the normal line, called health. In other words, he must make a diagnosis.

Now the word "diagnose" means to perceive, or to know through, or thoroughly, and medical diagnosis is defined in Murray's *Dictionary* as "the determination of the nature of a diseased condition," also "the identification of a disease by careful investigation of its symptoms and history; also the opinion (formally stated) resulting from such investigation." In the *Spectator* of October 1st, 1892, we read: "Swindlers seem to possess in an extraordinarily high degree the power of moral diagnosis—of telling what are the weak spots in the mind of the ordinary man," and Murray uses this as an example of the correct use of the word. In the same way (except that he is not a swindler) the medical diagnostician looks through his patient with his mental eye, aided by every possible clinical and laboratory method, and tries to unravel the whole condition of the man.

His aim is to unravel completely the whole of the puzzle before him, and *post-mortem* revelations tend to keep the most self-satisfied clinician humble, for when does one ever see a complete diagnosis? If the patient recovers, then you never know what really was the matter with him, and when he dies and the *cadaver* is opened, the pathologist points out to us, *generally* without remark, the effusion that we missed, the normal endocardium that gave rise to such a characteristic murmur, and so on.

But even *post-mortem* examinations do not always clear up diagnoses, and many of you will remember how Mr. I. H. Cameron used to say, in his quaintly humorous way, that he never yet saw a *sectio cadaveris* show exactly why the patient died. The difference between a body fit for the soul to dwell in and one just not fit is so slight that the most careful macroscopic and microscopic examination of the dead tissues may fail to show just why to-day the man is dead and yet yesterday he was alive.

Diagnosis must usually pass through the three stages of possibility, probability, and certainty. At the first visit the doctor thinks of a number of possible conditions from which his patient may be suffering. For example, he has continued fever, and the case may be one of typhoid, paratyphoid, influenza, malaria, military tuberculosis, trench fever, etc. In a day or two it becomes likely that the condition is either typhoid fever or one of the paratyphoid infections, and finally it is certain that the man has, say, enteric fever. In many instances the diagnosis never gets beyond the stage of probabilities—and even then may be wrong!

When a man, in previously perfect health, is taken with some acute disease, the diagnosis under a single name may be fairly correct. The patient is like a new motor-car that suddenly breaks down. In all probability here there is only one lesion, and when that is corrected the car will be as good as ever again. Most of our military medical work is among high category men, and the seeds of disease are thus sown in virgin soil; but in civil practice we are only too often dealing with people who are not originally healthy, and when these are taken ill with even the

simplest of conditions they are like C.A.M.C. "Jitneys," which, when they break down at last, are found to have many weak spots besides the final lesion. In patients like these many systems are involved, and this fact should be expressed in the diagnosis.

We do not, or should not, diagnose a disease, but rather the condition of a diseased person, which is quite a different thing. Two men may suffer from a pneumonia due to the same infection; but one may be otherwise sound, while the second may be like the old "Jitney" car, unsound in every part, and, although for simplicity of classification we put them both under the one heading of "pneumonia," the cases are quite different, as are also the prognoses and the methods of treatment.

Two ships are out in the same storm off the same lee-shore; one is sound in engines, spars, and crew, while the other is weak in all these essentials. The first will probably weather the storm and will reach port safely, while the other may founder, or else struggle into the haven a mere wreck. So it is with different individuals who are fighting against the same disease.

In endeavouring to diagnose the condition of a patient, a general view should first be taken of him, including the history and all the surrounding circumstances of the case. Next we concentrate on any abnormalities found, bringing to bear on such all the methods of precision that are at our command. Finally, in summing up the case, a general view should once more be taken, and then any abnormalities that our precise examination has revealed may be gauged in proper proportion to the whole "make-up" of the man.

All watertight compartment diagnoses must be avoided, under which heading we may put many so-called "specialists' findings. Sir James Mackenzie, in a humorous speech at Chicago last year, said to his audience that he had told Professor Welch and Sir Almroth Wright to their faces that they had had a most pernicious influence on medicine. Of course he did not mean it, but the lesson that he was hinting at is that too great concentration on laboratory findings may divert our attention from the condition of the patient as a whole.

All special methods of examination have their place in clinical medicine, and a constantly growing place, but they must be kept in their place and not called upon to settle complete diagnoses. A patient may show a positive Widal reaction and the typhoid bacillus may be found in the blood, but the statement that he has enteric fever may not be a complete diagnosis. He may have pneumonia or nephritis or any other condition as well, and the typhoid may really be the least important part of his condition. I came across a man the other day who was suffering from nephritis, with a very high blood pressure, and yet, because he had been found to have a one *plus* Wassermann reaction, without any history of venereal infection, he had been sent to a special hospital for venereal disease for a full course of salvarsan.

Many of you will remember when the von Pirquet test for tuberculosis was introduced. In time it was found to have a limited place in the diagnosis of this infection, but how many people were condemned to much mental and financial distress before that place was defined! Albumin in the urine does not necessarily mean nephritis; nor sugar necessarily denote diabetes, and yet every day one sees such unwarranted assumptions made upon such insufficient foundations.

All that I have been saying leads to the same point, and that is to the great value of team work. Probably one of the chief lessons that we have learned in military practice has been the appreciation of this matter. The staff of each military hospital is a team, and we have all got into the way of consulting together in the wards, in the laboratory, and in the x-ray room. It is one of the most hopeful signs of future good progress in medicine that this idea of team work is being discussed everywhere, and in many places is already being put into practice in civil life. As Dr. Head said the other night, of course such co-ordinated work is not everywhere possible. In country districts the general practitioner must often embody the whole team in his own person, but wherever possible such sharing of work and responsibility should be undertaken. The result will be that not only will the patients so studied benefit, but bodies of keen workers will, from the data that they collect, evolve certain simple rules of diagnosis

which the general practitioner may then apply, and so detect conditions that would otherwise be far beyond his ken.

Such team work in no way minimizes the importance of individual efforts at investigation. The most isolated practitioner can, and often does, contribute to the general knowledge, if he will but get into the habit of noting down what he sees. The best example of what can thus be done that occurs to me is that of Sir James Mackenzie, who, while a family doctor in a Yorkshire town, laid the foundation, and indeed accumulated most of a knowledge, of heart conditions, which knowledge has revolutionized our whole ideas of cardiology.

When a conclusion has been reached as regards the condition of a patient it usually has to be expressed in words. As Murray puts it, one meaning of the word "diagnosis" is "the opinion (formally expressed) resulting from investigation." And often this is a very difficult thing to do. The skilled old sailor, after he has glanced at the sky and consulted his instruments, usually has a very good idea of what the weather is going to be, but ask him to put his findings in words and you will seldom get much satisfaction. So it is with many a skilled practitioner. Fortunately the public often think the more of a man because he says little. Years ago, while on a walking tour in this country, I came across a country doctor whose chief claim to great cleverness, as far as I could make out, lay in his silence. According to one of his admirers, "He was such a clever man, that he would come into the house and look at you and write a prescription and go away without saying a word." I wonder if this man is now in the army, and, if so, how he likes always having to put his diagnosis in writing, and that within twenty-four hours of the patient's admission to hospital.

Often at a consultation the doctors very well understand the condition of a patient, and the first difficulty comes when the question arises, "What are we to say to the friends?" "What shall we call the trouble?" An old surgical teacher in Edinburgh, Professor John Chiene, used to advise us, when we were thus pressed for a name, to tell the patient that he had a sacro-iliac synchondrosis. As he said, this was true and did not commit you, and yet the name often gave the greatest satisfaction, and the patient went away feeling that he had got the value of his money. As we all know, many a patient fairly hugs such a satisfactory name as "V.D.H.," or even "N.Y.D."

A diagnosis, in order to be correct, should be a complete description of the whole condition of the patient, and, as this is manifestly impossible, we must resort to names or labels of some sort, which, in a word or a phrase, will express what otherwise might require many lines. The danger of thus summing up a condition in a word is that we are all too apt to think that a final diagnosis has been reached when such a name has been appended. These names should not be considered as goals, but merely resting places on the road to a more detailed diagnosis. Labels or names, then, we must have, but what a chaos the whole of medical nomenclature is in! The names therein, often in bastard Greek or Latin, are apparently not founded on any basis of classification. They arise, for example, sometimes from the name of the supposed discoverer of the condition, again from the supposed cause of it or from a prominent symptom, or from the organ supposed to be chiefly affected, or again from the supposed pathology, or the geographical distribution of the disease, and so on. And yet there is often much doubt as to who first described a disease; uncertainty as to the exact cause of the trouble, and of the exact pathological nature of the condition.

Very often, the more we know of a disease the less satisfactory is the name under which it exists. I need only mention rheumatic gout (which is probably neither rheumatism nor gout, and we do not know what either of them are) and typho-malaria (which is either typhoid or malaria, but not both) to illustrate the truth of this.

Numbers or letters of the alphabet would often do as well as names for labelling diseases, and would not commit us in the same way. Indeed, in the official *Nomenclature of Diseases* supplied for use in the army, numbers are used in addition to names. Thus a man may suffer from "No. 9," as well as take it! This official list of diseases was prepared for the R.A.M.C. by a Commission of the Royal Colleges, and is indeed a wonderful production. Diseases are classified largely according to systems affected. It would scarcely do at present to criticize it, but it is hard

to understand why such symptoms as "dry mouth (482)," "eructations (501)," and "loss of appetite (512)," should be dignified with the rank of disease, while on the other hand such common and definite things as haemothorax and auricular fibrillation do not appear. "Ureteritis and perireteritis (669)" again seems an unnecessary name. I wonder how many cases have been returned under this diagnosis during the war. "N.A.D." and "P.U.O." are much used terms, although they do not mean "no authorized disease" and "put under observation" respectively, as I have heard them translated.

"V.D.H." and "D.A.H." are useful classes (merely as first resting stations), and "debility" and "myalgia" help many a man to the base and do not commit the hard-worked medical officer too much; but, as I said before, all these names are delusions and snares if they are treated as complete and final conclusions as to disease.

Conclusions.

1. Examine a patient generally, in detail, and then generally again.
2. In expressing the condition of the patient in a name, choose one that goes no further than the findings of the case permit. Often a generic name, which is probably right, as far as it goes, is better than a specific one which may be wrong.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, March 29th, 1919, p. 265.

SOME PRACTICAL SUGGESTIONS FOR THE WORKING OF A VENEREAL CLINIC.

BY

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The following notes make no pretence at setting out anything new in the way of treatment, but are simply the results of experience in carrying on a civil venereal centre. A short statement of this experience may be of value to other workers who have started, or are about to start, similar clinics.

The staff consists of two medical officers, one of whom takes charge of the syphilis, the other of the gonorrhoea cases; besides these there is an assistant medical officer who is paid, an orderly man who assists in the irrigation department, and a permanent sister in charge of the nursing arrangements, who also does the necessary clerking work.

All the patients are treated as out-patients, though two beds, one male and one female, are set aside in the wards for the use of the department if necessary, but these beds have not been called upon during the last six months, and it is now felt that the need of beds is not so imperative as was formerly considered. I propose to describe the arrangements as carried out for syphilis. The section on gonorrhoea has been omitted from consideration of space.

It has been found most convenient to divide the work into new cases and old cases, and to admit new cases on one day, carrying out the treatment on some subsequent date. One morning is set aside for the examination of new cases of syphilis, male and female, at which time they are examined, and instructions are given as to attendance for treatment, etc.; and one evening clinic is arranged for men only, to meet the convenience of working hours. Treatment is carried out on a subsequent day, one day being reserved for men and one for women.

ROUTINE FOR CASES OF SYPHILIS.

In dealing with a large number of people all suffering from the same condition it is essential that a routine should be followed; and, whilst admitting the dangers and disadvantages of routine methods, it may be pointed out that these dangers vary inversely with the interest shown by the medical officer. I will describe briefly the method of examining patients carried out in the clinic; it is rapid and sufficiently exhaustive to ensure that any lesion will be found, and to disclose the necessity or otherwise of any special examination.

Examination.

Before any entries are made in the register the male patient is stripped as follows: Hat, coat, and waistcoat are removed, trousers are pushed down to the ankles, and the shirt pulled up under the armpits. This bares the body, except the feet and shoulders, and is generally sufficient, and saves the men taking off their boots and socks. The man stands in front of the examiner, who is seated, and the examination begins with the anterior aspect, the genitals being first dealt with and any sore noted. The inguinal region is palpated for enlarged glands, and the presence or absence of any rash or discoloration is observed. The patient is then made to turn round and bend down, exposing the anus and perineum, which, with the back of the scrotum, is next examined. He again turns round and stands up, and the cervical glands are palpated and the fauces carefully examined, together with the tongue and the buccal mucous membrane; and it may be mentioned in parenthesis that the best type of tongue depressor is a wooden garden label, which can be used and burnt immediately. By this time it should be obvious whether the man is syphilitic or not, and should he be considered infected his notes are commenced, the name and address being entered in the register and a serial number allocated.

The sore is then examined microscopically for spirochaetes by the dark-ground method, as follows: A small square of lint moistened with normal saline is taken and the sore cleansed, and when the surface is clean a drop of serum is obtained from it, which can usually be accomplished quite easily by gentle friction with the lint, followed by a little digital pressure between the gloved fingers. If the sore bleeds readily the first exudation of blood should be soaked up with the lint, and this repeated until the exudation is only slightly blood-stained, as too much blood in the serum hinders the discovery of the spirochaetes, though a few blood cells are an advantage, as they materially assist the focussing of the dark-ground preparation. When the sore is bathed in serum a perfectly clean square cover-slip is taken in a Cornet's forceps and with the surface of a corner of the slip, the serum is touched, taking care not to allow serum on both sides of the slip. Next, with a platinum loop a small drop of normal saline is taken up and mixed with the serum on the cover-glass, which is dropped on to a thin white microscope slide, and the latter marked, by means of grease-pencil with the patient's name and put aside to be dealt with later.

The examination of the patient is then concluded by auscultation of the heart, after which he is told to pass water and then to dress. All the new patients are seen first, and the urine test and the search for spirochaetes are carried out when the clinical examination is completed.

Urine Test.

Heller's test is the one chosen, and the method I adopt is as follows: About quarter of an inch of strong nitric acid is put in the bottom of a test tube and by means of a pipette two inches of urine are allowed to flow slowly down on to the surface of the nitric acid. Should albumin be present the usual ring appears at the junction of the fluids, but not infrequently, though no albumin is present, a hazy cloud appears in the upper portion of the urine, which indicates the presence of globulin or nucleo-albumin, and is no contraindication to the use of salvarsan.

The search for spirochaetes should be made at once if possible, but should this be impracticable the serum may be collected and sent to some pathological centre for examination. The best way of collecting the serum is by means of a small Wright's pipette. The sore is treated as above described, and when the serum is sufficiently abundant the pipette is applied and the serum allowed to collect, when both ends of the tube are sealed. After the completion of the examination and the filling up of the case-card with the necessary particulars, the patient is instructed when to come to the hospital for treatment, and is given a small square card coloured "blue," which he presents to the sister in charge on his next appearance, along with his identification number, which blue card signifies that he is to receive treatment and also to have a Wassermann test.

Instruction to Patients.

Before leaving the hospital he is instructed how to prepare himself for treatment as follows:

1. *On the Night before his Injection:* To have a good dose of "salts," so as to ensure a free action of the bowels.
2. *On the Day of Injection:* To have a good substantial breakfast, but a very light lunch—such, for instance, as a cup of bovril and toast, or a poached egg and coffee; to abstain from alcohol, and to make arrangements for going to bed immediately on his return from hospital.

I have found it essential that patients should not be exhausted by lack of food.

Registration.

The above is the routine followed in dealing with men, and in the case of women the only difference is that the sister strips the patient and covers her with a blanket, and she is examined on the couch, and not standing. Should the diagnosis be doubtful and further evidence be required, the patient is not entered in the register, but is given a small red card and told to present himself on the next treatment day, the red card signifying to the sister that he needs a Wassermann test only; and I might describe

here the little card system, which I have found saves a great deal of labour and time.

Each patient who comes up on a treatment day has in his possession a card of one of the three colours—blue, red, or yellow (a small piece of card $1\frac{1}{2}$ in. square)—and according to the colour of this card the sister knows at once what to do with the patients, without referring to their case cards, and is able to segregate them into batches. The blue card means that the patient is to have a Wassermann test and treatment, the red card means a Wassermann test only, while the yellow card signifies that the patient is to receive treatment only. The blue and yellow cards are further stamped with a figure 0.3 or 0.4 or 0.5 according to the dose of salvarsan the patient is to receive.

Methods of Treatment.

After some experience, beginning with the old German salvarsan and neo-salvarsan, given in the original large sterilizing doses, and of the newer drugs, both of the "606" and "914" type, I have adopted a standard course of seven intravenous injections of kharsivan and nine intramuscular injections of mercury. Each of the many arsenical preparations on the market has its own advantages and disadvantages, but the stability of kharsivan and its constancy of composition are valuable assets, whilst the fact that large quantities may be made up and used for a series of cases, renders it particularly suitable for institutional work. The "914" group of drugs cannot be given in quite the same way, as each dose should be made up separately owing to the more rapid oxidation and consequent increased toxicity of these salts.

The disadvantage of the kharsivan and the "606" group is that they are rather more toxic than the "914" or "neo" salts, and their method of preparation is not that of simple solution, but with standardized reagents and apparatus the difficulties of the technique vanish and with the disappearance of errors of technique many of the toxic effects of kharsivan also disappear.

The routine adopted is one modelled on the army course, and with the necessary modification for dealing with civilian patients it has been found satisfactory in every way.

As soon as the patient is diagnosed as syphilitic (the heart and urine showing no contraindications) he is embarked on the full course of kharsivan and mercury, which are given at the following intervals:

1st day	...	kharsivan 0.3 gram;	mercury 1 grain
8th day	...	" 0.3 gram;	" 1 grain
15th day	...	" 0.3 gram;	" 1 grain
22nd day	...	" "	" 1 grain
29th day	...	kharsivan 0.4 gram;	" 1 grain
36th day	...	" "	" 1 grain
43rd day	...	kharsivan 0.4 gram;	" 1 grain
50th day	...	" "	" 1 grain
57th day	...	kharsivan 0.5 gram;	" 1 grain
64th day	...	" "	" 1 grain
71st day	...	kharsivan 0.5 gram;	" 1 grain

Total ... kharsivan 2.7 grams; mercury 11 grains

The Wassermann reaction is tested on the 1st, 43rd, and 78th days.

This dosage is modified for women patients by giving three doses of 0.4 gram instead of the last three doses shown above. Whilst on the table the patient is given one of the little coloured cards—red, blue, or yellow according to the requirements of his next visit.

Wassermann Tests.

On the "treatment days" Wassermann tests are first dealt with as follows: All the patients who are to have the tests are collected by the sister, and small labels made out bearing their identification numbers. The requisite number of sterile tubes is placed in a rack, each tube having a rubber cork pierced with two holes, through one of which passes a small glass tube, to which is attached a short length of thin rubber tubing and a needle.

The patients are arranged with the left sleeve rolled up and as each one comes up to the operator the sister puts a rubber tourniquet round the upper arm with a single twist and holds the free ends tight while the flexure of the elbow-joint is painted with tincture of iodine. The patient then clenches the fist and the needle is pushed into the vein, and as soon as blood appears the sister slacks the tourniquet and tells the patient to open the hand. About 10 c.cm. of blood are withdrawn, a small pad of wool is placed on the puncture, and the patient told to swing the arm over the head, and to press on the puncture pad for a few moments, after which a small circle of sterile gauze is fixed over the site with a double cross of narrow strapping. By means of the coloured cards the sister knows the number of patients requiring Wassermann tests, and is able to have prepared the requisite number of ready corked and needled tubes; much time is saved thereby, as many as forty Wassermann specimens being easily taken in a quarter of an hour. As each tube is filled, the man's number should be asked again, and the corresponding label affixed to the tube then and there.

Kharsivan Injections.

One of the most convenient forms of the injection apparatus is the "double-funnel" pattern.* The hermetically sealed tubes in which kharsivan is sold contain either 0.3, 0.4, or 0.6 gram doses, and I have found it most convenient to use only those containing 0.6 gram. Five of these tubes are taken and the thin end filed off, their contents being shaken into a small bottle containing about 50 c.cm. of sterile distilled water, and solution obtained by vigorous shaking after putting in a tightly fitting stopper. When thoroughly dissolved, 5 c.cm. of a 15 per cent. solution of caustic soda is added from a 5 c.cm. pipette. This is a practical point of some importance. As both the kharsivan and water and the final sodic salt are clear solutions the only way to prevent mistakes—either giving the non-neutralized solution or a too alkaline solution—is to watch carefully the change that occurs at the neutral point, that is, the formation of a heavy precipitate. Titration cannot be carried out conveniently every time, but if once done and the amount of caustic soda determined for any particular amount of kharsivan, the rest is simple. I use a 15 per cent. solution of caustic soda, as 1 c.cm. of this strength is sufficient to neutralize one tube of 0.6 gram kharsivan, and for the 3 grams I therefore use 5 c.cm. of the soda solution and deliver it with a 5 c.cm. pipette. If it is added slowly the precipitate can be seen, and then a few more drops of the soda will redissolve it, producing a clear solution of the sodic salt. A small excess of alkali is an advantage—just before the neutral point a very toxic monacid salt is formed—and the final alkaline solution is tested on a litmus leaf in every case.† The resulting fluid should be quite clear, void of any flocculi, and the colour of sherry; it is essential to filter it through several thicknesses of sterile gauze into one of the glass containers, as minute particles of glass from the kharsivan tubes occasionally fall into the fluid.

The container into which the kharsivan solution is filtered is then filled up with normal saline to the 300 c.cm. mark, producing a solution of 3 grams of kharsivan in 300 c.cm. of saline, and as the containers are calibrated in 10 c.cm. each division on the scale represents 0.1 gram of kharsivan. I have found this a most convenient dilution, the 10 c.cm. being sufficiently large in volume to be given by itself if necessary, and allowing at the same time any variation of dose from 0.1 to 0.5, which in a series of patients who are to receive varying doses is of great practical convenience. Moreover, since this particular dilution was adopted there have been none of the troublesome vasomotor reactions sometimes seen. The details of the venipuncture I need not specify, except to state that, as far as possible, the right arm is reserved for injections, the left arm for Wassermann tests, and that about 20 c.cm. of saline is allowed to run into the vein before the kharsivan, the latter being then washed into the circulation by a final 20 or 30 c.cm. of saline, so that each patient receives a "sandwich" of "606" and saline. I now give the solutions just above the room temperature, without any ill effect; I am sure that hot solutions are more toxic. Patients are now allowed to leave the hospital immediately after the injection, and if one can be sure of technique, and that the instructions as to diet, etc., have been carried out, there need be no fear of ill results; during the last six months no case has been detained overnight in the hospital. The immediate vasomotor reactions referred to above, which occur while the patient is on the table or immediately afterwards, are shown by the complaint of a sudden feeling of choking, with suffusion of the conjunctivae and flushing of the face and neck, and are very often ushered in by a slight cough or licking of the lips. Maintenance of the recumbent position, together with a hypodermic, or, better still, intramuscular injection of 1 c.cm. of adrenalin solution (1 in 1,000), generally suffices to counteract this condition; but occasionally one meets with severe reactions in which the subject becomes deeply cyanosed, with profuse clammy sweating, unconsciousness, and widely dilated pupils. If this occurs, immediate bleeding is imperative. Hence on the table, beside the couch, there are always ready to hand a sterile hypodermic syringe and needle (proved to be in working order at every séance), and adrenalin solution, together with a sterile scalpel and a bowl.

Mercury Injection.

If the necessary details of technique are observed this method of medication is quite painless; so painless, in fact, that I have often seen men stand waiting for their injection without realizing that it has been already administered. It is given as follows:

The men who are to receive the mercury are told to let the trousers down and bare the buttock, which is then painted with tincture of iodine in the upper quadrant; a long needle, previously sterilized in oil, is next taken and held by the adapter-end between the finger and thumb of the right hand and "jabbed" into the muscle right up to the hilt; the syringe is then applied to the needle, which is steadied by the left forefinger and thumb, and the requisite dose of mercury given slowly, after which the needle is withdrawn on the syringe and the part vigorously rubbed with a pad of cotton-wool or a towel. The preparation of mercury used is "grey oil," of which 1 c.cm. (roughly 15 c.mm.) represents 1 grain metallic mercury.

* This apparatus is put up in a convenient form by the Holborn Surgical Instrument Co.

† Too alkaline a solution will produce great pain at the site of injection during the operation, and will cause thrombosis and obliteration of the veins, which are thus rendered useless for further treatment.

Periods at which Wassermann Tests are Made.

These are done three times during the course, once at the commencement, once after the second 0.4 dose, and finally after the completion of the course—that is, one week after the last injection. By this means valuable information is obtained as to the patient's response to treatment, and the necessity for any further medication is determined by this response, together with the patient's clinical condition. After the final Wassermann, should it be decided that no further treatment is necessary, the patient is told to remain away from hospital for two months, at the end of which time another Wassermann test is carried out, and if this is negative he is sent away for six months, and again comes up for blood test. Should this still be proved negative, he is advised to come up after a further six months and again in twelve months.

BACTERIOLOGICAL AND PATHOLOGICAL OBSERVATIONS ON INFLUENZA AS SEEN IN FRANCE DURING 1918.

BY

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AND

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(Abstract of a Report to the Medical Research Committee.)

IN view of the tendency in certain quarters to throw discredit on Pfeiffer's bacillus as the important factor in the etiology of epidemic influenza, we think it desirable to record briefly the following observations.

During the June-July (1918) outbreak we cultivated the *B. influenzae* from 20 out of 24 specimens of sputum examined. Single examinations only were made, and our impression was that from the muco-purulent secretion of the bronchi the cultivation of Pfeiffer's bacillus could be obtained with ease, and sometimes with very few associated bacteria.

In June and July we made cultures from the bronchi in the case of 6 cadavers, and in 5 of these obtained the *B. influenzae*. In October-November (1918) we examined by cultural methods material taken at 72 separate autopsies. Cultures of the *B. influenzae* were obtained 57 times from 72 swabs from the bronchi, 12 times from 71 specimens of heart blood, 3 times from 8 pleural fluids, and once from 7 pieces of lung substance. We attach particular importance to the presence of Pfeiffer's bacillus in the heart's blood and in the pleural exudate, and appropriate tests were carried out to verify our results.

The post-mortem examinations were all made soon after death, and never later than twenty-four hours.

In our 72 swabs from the bronchi the occasions on which we recorded certain other micro-organisms were as follows:

Pneumococci	...	...	...	48
Staphylococci	...	...	...	43
Streptococci	...	...	...	42
<i>Micrococcus catarrhalis</i>	...	...	...	11
Pneumobacilli	...	...	...	7
Diphtheroid bacilli	...	...	...	3
Meningococci	...	...	...	2

The frequent occurrence of staphylococci is particularly noteworthy. In the majority of instances it was the *Staphylococcus aureus*. Cultures from 8 empyemata yielded the pneumococcus alone in 3 cases, the pneumococcus and the *B. influenzae* in 3 cases, the pneumococcus and *B. proteus* in one case, and the meningococcus in one case.

Cultures were made from the heart's blood by smearing loopfuls of it over the surface of agar slopes. Of the 71 specimens of blood examined, the times certain micro-organisms were encountered were:

Pneumococci	...	...	...	35
Streptococci	...	...	...	23
Staphylococci	...	...	...	20
<i>B. influenzae</i>	...	...	...	12
Pneumobacilli	...	...	...	3
Meningococci	...	...	...	2
<i>Micrococcus catarrhalis</i>	...	...	...	1
Diphtheroid bacilli	...	...	...	1

Usually several of these were associated. On eleven occasions no growth occurred.

Pathological Observations.

In June and July we made six *post-mortem* examinations of cases which had been diagnosed as influenza, bronchopneumonia, or pneumonia. Four of these were definitely cases of bronchopneumonia such as we found later in October and November, whilst the other two were examples of lobar pneumonia. Cultures made from one of these cases in which both lower lobes were consolidated yielded pneumococci and no *B. influenzae*; the other one showed grey hepatization of left upper lobe, a left-sided empyema and acute fibrinous pericarditis. This was the only case of pericarditis in our series.

In October and November we examined at autopsy 92 cases of influenza, all of them showing some involvement of the lungs.

In 23 of these cases Zenker's degeneration of the fibres of the rectus abdominis was evident in varying degree. The hyaline fibres were observed most frequently near the origin and insertion of the muscle. Along with the hyaline degeneration, or rather coagulation necrosis, in 11 cases there were haemorrhages into the sheath of the muscle, the blood being extravasated between the fibres and often causing their rupture. Whether the two conditions were in any way related we cannot state, but we have observed that often the ruptured fibres were hyaline. The most frequent site of the haemorrhage was two inches above the pubic rim and the extravasated blood could be seen showing through the aponeurosis and peritoneal coat on drawing back the flaps made by the abdominal incision. There was no discoloration of the skin over the haematoma, and in fact there was nothing on the surface to indicate its existence.

Abdominal Organs.

As regards the abdominal viscera there was nothing very noteworthy. A slight enlargement of the spleen was observed in a few cases, but hardly sufficiently marked for the organ to be palpated during life. There was engorgement of the veins as a result of the distension of the right side of the heart. In many cases there were ecchymoses in the wall of the stomach under the mucous membrane, venae stellatae of the kidneys were prominent, and occasionally there were petechiae in the renal pelves.

Thorax.

Heart.—As a rule the right side was distended with blood, and presented the usual appearance seen in death from asphyxia. Cyanosis was common. The pericardial sac invariably contained about 50–100 c.cm. of clear yellow fluid but no case showed pericarditis or endocarditis. In three cases there were petechial haemorrhages in the visceral and parietal pericardium. The anterior mediastinal tissue frequently contained air as a result of the forced inspiratory efforts.

Pleura.—In 16 of the 92 cases there was a well developed pleural exudate consisting of 500 to 1,000 c.cm. of turbid yellowish purulent fluid. In 9 cases the right side, in 4 the left side, and in 3 both sides were involved.

Accompanying the fluid there was a very thick deposit of fibrin over the surface of the lungs and extending between the lobes. This deposit readily peeled off. The lung underlying the fluid was sometimes consolidated, but more often was spongy and in a state of capillary bronchitis.

Lungs.—In practically every case haemorrhages were present under the visceral pleura. The separate haemorrhagic surfaces varied from the size of a pin's head to that of a florin. In many the haemorrhagic areas were very irregular in size and shape and the surface of the lung had a speckled blotchy appearance. Of the 92 cases there were 4 where the condition might have been regarded as lobar pneumonia, in 13 capillary bronchitis would have been a fitting description, in 8 patchy bronchopneumonia, and in 67 diffuse bronchopneumonia.

In the capillary bronchitis cases the lungs felt spongy and were distinctly emphysematous at parts and showed no areas of consolidation beyond a few haemorrhagic areas. The trachea and bronchi were deeply injected and a considerable amount of muco-pus escaped from the cut bronchioles. In the patchy bronchopneumonia cases there were scattered areas of consolidation. Some of the areas consisted of extravasated blood forming infarcts, others contained a cellular exudate.

The most common condition was one in which almost entire lobes were consolidated, with the exception of their margins, which were invariably emphysematous in front. The lobes in such cases were plum coloured, and the pleural surface was mottled with haemorrhages. On section there was an escape of much blood and serous oedematous fluid, the surface not being as dry as is the case with typical lobar pneumonia. The term "diffuse bronchopneumonia" probably best describes the condition. We were unable to associate any particular flora with the various lesions met with in the lungs. Cases of capillary bronchitis had the same *B. influenzae*, pneumococci, streptococci, and staphylococci which were encountered in those of diffuse bronchopneumonia.

During the latter months of 1917 and the whole of 1918 we had an opportunity of studying the lung condition as met with in 42 fatal cases of gas-shell poisoning. In these cases mustard gas was responsible for most of the lesions, though it may have been mixed with phosgene in many instances. We were impressed with the resemblances presented by the lungs in cases of influenza with those observed in the gas-shell wounds. The superficial burns of the skin and the necrosis of the lining of the trachea and bronchi were, of course, absent in the influenza cases, but the haemorrhages and mingled areas of emphysema and consolidation in the lungs were common to both conditions. In June we examined bacteriologically three cases of death from mustard gas, and found *B. influenzae*, pneumococci, staphylococci, and streptococci present in the bronchial secretion.

We consider that in influenza Pfeiffer's bacillus acts as a pioneer and prepares the way for pneumococci, staphylococci, and streptococci, which are able to grow and multiply in the damaged mucous membrane of the bronchi and subsequently invade the lungs and even the blood. Poison gas would seem to do the same nefarious work. In both cases there is a pronounced haemorrhagic tracheitis and bronchitis, the injection of the vessels at the bifurcation of the trachea being very intense.

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ANAESTHETICS: A MODIFICATION OF THE OPEN ETHER METHOD.

BY

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THE particular requirements of war surgery have given a great impetus to the use of ether as a general anaesthetic for routine work, and especially to its administration by the open method. The preference shown for this method is, perhaps, largely because, on paper at any rate, it seems to be so simple and so devoid of difficulty and danger. Omitting the question of safety, it will be found in practice, especially by the beginner, or if the attempt be made to use ether alone from start to finish, that the method is not so simple and easy as might at first sight appear.

In the course of the last three and a half years or more I must have paid close upon 1,000 visits to different war hospitals throughout the country, and so have enjoyed exceptional opportunities of watching the work and obtaining the views of other anaesthetists. From this experience I gather that the chief practical difficulties which present themselves when the attempt is made to use ether alone from the beginning are:

1. The period of induction is much prolonged. As much as twenty minutes has frequently been reported to me, and in some cases I have been informed that it had been absolutely impossible to get the patient under at all.
2. Nearly all patients object to the taste and smell of "straight" ether, and in those of the over-robust type and in the alcoholic this objection is frequently the prelude to respiratory spasm, lividity, and troublesome struggling.
3. In the same type of patient, too, complete muscular relaxation appears to be difficult or impossible of attainment.
4. The amount of ether used is often excessive. From 12 to 16 oz. an hour is no uncommon record, and I have known it to be even more. This, of course, is a trouble which makes itself felt by every occupant of the operating theatre.

5. The flow of mucus and saliva may be excessive, and when this is the case the patient is very apt to develop an undue amount of post-operative bronchial irritation.

Continuous practice will, of course, go a long way towards mitigating these troubles. The prior injection of morphine and atropine, especially the latter in tolerably large doses, is also a great help, particularly with regard to the excessive salivation and tendency to bronchial irritation.

Usually, however, the anaesthetist seeks to overcome the difficulties by starting with a little chloroform or "mixture" (equal parts of chloroform and ether, or 1 of chloroform to 2 of ether, or 2 to 3). This is generally administered upon the same mask as prepared for the ether alone—that is, twelve to sixteen layers of gauze with an underlying face-pad, and the patient is carried to the stage of complete anaesthesia, and the pure ether is substituted as soon as it is thought that he will no longer resent the change. In many, perhaps in the majority of instances, this plan succeeds well enough for all practical purposes, but in rather a large number of cases a tendency to respiratory and cardiac failure develops in the course of two or three minutes after the change to pure ether has been made. I believe myself, too, that in some cases deaths have resulted in this way.

To explain these untoward results, it has been suggested that the face-pad and thickish layer of gauze or lint used in the open ether process do not permit of a sufficient dilution of the vapour with air, as is so essential for the safe administration of chloroform, and that when the gauze is wetted, particularly with the heavy, semi-viscid chloroform liquid, an almost impervious or closed system is formed, with momentary accumulations of dense chloroform vapour immediately above the mouth. At any rate, it is quite clear that if chloroform or one of the strong mixtures be used for induction, the face-pad should be discarded, an entirely separate and much thinner mask employed, and the patient must be most carefully watched for the faintest indication of respiratory or other failure. Slight as these changes really are, they suffice to rob the open ether process of its simplicity, and therefore are seldom adopted.

Looking about for a means to overcome these difficulties, my attention was attracted by Dr. McCardie's excellent paper on "A Method of Anaesthetizing Soldiers," which appeared in the *BRITISH MEDICAL JOURNAL* of April 21st, 1917, in which he advocated the use, in a Clover's inhaler, of a mixture of 1 part of chloroform to 16 of ether. I proposed, therefore, to use this combination of 1 in 16 in lieu of the stronger mixtures alluded to above. Before doing so, however, I took the opportunity when in Birmingham to discuss the subject with Dr. McCardie. He expressed his doubts about my proposal, and said that he thought the same objections would apply to his 1 in 16 mixture as to the stronger ones. However, I gave the combination a trial, and, although it succeeded admirably in many cases, it obviously required careful watching, and in some few instances I received rather adverse reports about it.

I then experimented with various combinations of the two drugs, and have finally settled upon a mixture of the following proportions:

Chloroform	...	...	...	1 drachm
Ether	...	...	...	32 drachms (4 oz.)

This, it will be seen, is approximately 3 per cent. of chloroform in ether, or a very little stronger (3 in 99).

In using this attenuated mixture I have found that the following are the chief points to be attended to. Although not essential, it is of advantage that the patient should have a preliminary injection of morphine ($\frac{1}{2}$ grain to $\frac{1}{4}$ grain) and atropine ($\frac{1}{100}$ grain to $\frac{1}{50}$ grain). The face-pad and mask is the same as for open ether, the mask being closely applied to the face and face-pad from the very beginning. The liquid is used exactly as if it consisted of ether alone, the presence of the small quantity of chloroform being ignored. During induction the liquid is poured freely on to the mask just to the verge of resentment, but when consciousness and reflexes are abolished, it will suffice to reduce the supply to the dropping stage. If at any time during the course of the operation it be thought that the anaesthesia is not sufficiently deep, there need be no hesitation about increasing the amount. Needless to say, the same care in watching and maintaining the breathing are required in this as in any other method

of anaesthetization; the plan makes no pretence to be "absolutely fool-proof."

In my own hands and in the hands of many others who have tried it, the combination used in the way indicated has given excellent results. The advantages that I would claim for it are:

1. *Simplicity*.—There is no need to change the drop bottle or mask, or to remove the face-pad, which are the same as for the original open ether method.

2. *Rapidity*.—As the result of many careful time tests I have found that the patient is well able to be moved in about five minutes, and that the first incision may be made in another minute or so. At the outside, ten minutes should complete the whole process. This is a very great gain as compared with a possible twenty minutes—a gain both to the patient and the temper of the surgeon.

3. *Lack of Irritation*.—It is really quite remarkable how the addition of such a small quantity of chloroform should go so far in the direction of converting the pungent ether into a comparatively bland vapour. The consequence is that the patient has much less objection to the inhalation than when pure ether is used; there is also less respiratory spasm, less lividity, and the struggling is practically limited to the simple movements of the stage of excitement.

4. *Efficiency*.—This, of course, is a point upon which longer experience is desirable, but so far I have never had any difficulty in obtaining a sufficient degree of relaxation to satisfy the requirements of any of the surgeons with whom I have worked, and the depth of anaesthesia can be very readily regulated.

5. *Economy*.—The greatest expenditure of the liquid is naturally during the induction stage, but that seldom exceeds a couple of ounces, and I have estimated that for the maintenance of anaesthesia subsequently from 4 to 6 oz. per hour is ample. This is a very great saving and comfort to all concerned.

6. *Safety*.—Neither this nor any other anaesthetic can claim to be absolutely safe, nor can it be said that care and attention on the part of the administrator are less valuable assets than with any other drug or combination. On the face of it, however, I think that it is obvious that the possibilities of over dosage with chloroform are much diminished when the half-drachm required for induction is diluted in two ounces of ether, given in ten rather than in two minutes, and that a drachm to a drachm and a half used in the course of an hour is but little likely to do much harm.

The flow of mucus and saliva and the subsequent tendency to respiratory irritation are much diminished, but I do not claim that this is to be wholly placed to the credit of the mixture, but rather to the routine use of full doses of atropine which I have always advised. I should point out, however, that on account of its relative rapidity of action the 3 per cent. mixture will be found useful to those who adopt the open ethyl chloride-ether sequence. In fact, I have myself made a few quite satisfactory experiments in the direction of using liquid ethyl chloride in lieu of chloroform, but I have not followed up this line of work, although I believe that it may be worth while doing so. One of the objects of this communication is to establish the principle of what I would call "attenuated mixtures," and to endeavour to show that "straight" chloroform or strong mixtures are by no means essential as an induction to open ether, but that, on the contrary, they introduce unnecessary risks in the open ether method.

TREATMENT OF ECZEMA BY RECTAL SALINE INJECTIONS.

By PERCY B. SPURGIN, M.R.C.S., L.R.C.P.

THE balneological treatment of certain forms of skin disease is nothing new; the internal administration of drugs as a means of cure is well recognized, and is, in certain cases, useful not only to alleviate symptoms but, in certain conditions, to cure the complaint.

The internal treatment, by means of saline injections into the bowel, is, I believe, something out of the common, and the following history, considerably condensed, of a very severe case of generalized eczema treated by this method, may be of interest to your readers.

C. M., aged 49, enlisted in August, 1915, and went to France shortly afterwards with a labour battalion. After being in France for twenty-five months, during which time he had fair health, he was sent home to England because of swelling of his ankles and feet. He was admitted to a military hospital and remained there for three weeks; he was then transferred to another military hospital, where he was a patient for three months. His knees were still swollen when he was discharged to a labour centre and recommended for a discharge centre.

Two days before his discharge was due he was taken ill and admitted to the hospital of which I was in charge on February 5th, 1918. He was a tall, spare man, in poor condition; the temperature was 97° F. There was confluent eczema on forearms and hands, which was beginning to discharge, and some patches on front of chest, face, and neck. Three days later the ears and neck were covered with crusts, from under which pus was oozing; fomentations did not relieve the condition. On February 12th his condition was getting worse; the temperature was 99.8°; he was having daily bran baths. On February 16th the temperature had risen to 100.4°; he was now covered with eczema, the trunk, arms, thighs and neck, also the face in part, being crusted over; from beneath the crusts was exuding thick offensive pus. Up to this time the patient had been taking his food pretty well. Three days later he was feeling worse and taking food badly, although sleeping well. The temperature was 101° F.

He grew very weak and emaciated and the temperature kept up until March 2nd, when it dropped to 97.6°. On this day he felt very cold, but was otherwise comfortable. Large patches were becoming detached, and pus was still oozing from beneath the crusts; the stench was very bad. He was taking food fairly and sleeping pretty well. He developed some catarrhal bronchitis a few days later, but this cleared up after a week on ordinary expectorant treatment. The crusts were still coming away in large pieces, leaving a raw purulent surface.

On March 24th the hands and wrists were very swollen; the temperature was 100°; the eczema extended all over his trunk, back and front, and on every limb. Two days later the knees were very swollen, and the temperature rose to 101.2° on the following day. By April 6th he was worse, with severe pains in his left arm and both knees. He was treated with colchicum mixture; he was too weak to continue the baths. The suppuration had lessened considerably. The next day he was very low and wandering in his speech, but he improved on stimulants and aspirin and slept a little. By April 22nd he was very ill indeed; the respirations were irregular and shallow, almost Cheyne-Stokes in character. He rallied again after stimulation, and for the next few days there was nothing to note specially, although he was getting steadily weaker, and was like a living skeleton. His joints were still swollen, and he was in considerable pain, taking very little nourishment, and having but little sleep, in spite of hypnotics. On June 13th he was very collapsed and in an extremely critical condition, and the pulse was rapid and weak, and the motions blood-stained. June 15th saw him with a very bad colour, pulse weak and thready, and unable to take his food. He had not slept. Morphine induced a good sleep, though of short duration, but he took food better during the night, and was fairly comfortable. On June 17th the pulse was hardly perceptible. A simple soap enema, followed by a rectal saline containing *sp. vini gallici* 1 oz., was given and retained. Next day there was a slight improvement; he was sleeping and taking food better. Two days later there was a noticeable improvement, the patient was eating better and sleeping well. Saline and brandy were given every other day, after clearing the bowel with soap enema. By June 23rd he had markedly improved, was much stronger, and was bright and cheerful. The eczematous condition was rapidly clearing away, the swelling of the joints was lessening, although he still complained of considerable pain. Appetite was good and sleep sound. The leg pains were severe next day, but twenty-four hours later were much less and his general condition better. During the next fourteen days, excepting a slight rise of temperature on June 29th, accompanied by sharp pains in the limbs (the weather was very wet), he made steady progress. He was much stronger, eating and sleeping well, and was bright and cheerful. His skin was much improved, clean and healthy. He continued to gain in strength and weight. The salines had been continued every other day. On August 14th the patient got up for the first time for over four months. By this time the skin was practically clear, and the appetite, sleep, and general state entirely satisfactory. By the beginning of September he had remarkably improved, he was getting up on alternate days, the odd days being given for the salines and rest in bed.

Progress during the month was well maintained, the patient had been out in a bath chair several times, and by the end of the month he was able to stand and to walk a few yards, with support. From this time onwards convalescence was steady and uneventful; he was stronger every day and fattening visibly. The knee-joints were still much enlarged, but there was no pain. After a time he was discharged the service, owing to chronic gouty arthritis.

Some years ago it was noticed, during an epidemic of infantile diarrhoea in Paris, that certain infants suffering from eczematous conditions of the skin, while under the saline treatment for their diarrhoea, were much improved as regards their skin troubles. Remembering this, I was induced to try the effect of salines on my patient; the result shows very markedly the effect of saline on the metabolism. The patient was apparently past all help when this form of treatment was commenced, and the really extraordinary change which took place in a few days was deeply interesting and gratifying.

To the nursing staff who carried out my suggestions so carefully, to the R.A.M.C. orderly who never spared himself in time or trouble, I owe my best thanks, and to Colonel Kay my thanks are due for permission to publish this case.

AN UNUSUAL CASE OF HAEMORRHAGE FROM TONSILLECTOMY.

BY

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The following case presented the complication of obstinate haemorrhage to a degree which is, fortunately, unusual.

A girl, aged 13 years, was on April 9th, 1919, anaesthetized (CE₂) with the head extended over a sandbag, for the enucleation of submerged tonsils by dissection.

The left tonsil shelled out easily, quickly, and nearly bloodlessly. On the right side, as soon as the upper half of the tonsil had been separated from its bed, copious bleeding began. This welled up from the extreme depths of the fossa, from a point entirely concealed by the anterior pillar, and from about half-way up the fossa. In colour the blood was arterial; an inability to detect pulsation may have been due to the depth of the bleeding point. This was probably either the tonsillar branch of the facial artery, or a tributary of the pharyngeal venous plexus.

Artery forceps failed to control the bleeding. Wagner's clips failed to grip the posterior faucial pillar; perhaps this was due to spasm of the palato-pharyngeus, for the patient was by now only lightly anaesthetized, and with the pharynx constantly and rapidly refilling with blood it was both difficult and dangerous to keep her under. With a cleft-palate needle three sutures were passed through anterior and posterior pillars, and these were sewn together over a strip of ribbon gauze; this also failed to stop the bleeding, and with repeated spasm one stitch cut out. A Cullum's clamp was now tightly applied, with temporary success. In order that the patient might tolerate the clamp she was, after removal to bed, kept lightly under morphine.

Nine hours later CE₂ was again given and the Cullum's clamp gingerly removed. Bleeding was, if anything, more profuse than before. Swabs and artery forceps were again tried fruitlessly. Cullum's clamp was reapplied while the external carotid was tied at its origin; the clamp was then removed.

The possibility of an abnormal tonsillar blood supply was suspected for the following reasons:

1. The common carotid had a high bifurcation—slightly above the hyoid level—and no superior thyroid branch could be seen. It seemed, therefore, likely that other arterial abnormalities might coexist.

2. Occlusion of the external carotid checked the bleeding almost entirely, but, for the moment, not absolutely. For these reasons the possible existence of a tonsillar branch from the internal carotid was surmised; and, as a safeguard, a second ligature was left loose around the common carotid, to be tightened if necessary. The slight residual oozing, however, stopped entirely in a few minutes; and this loop around the common carotid was removed in twelve hours. The after-history is as follows:

The blood lost was not measured, but the patient retained 1½ pints of saline in the rectum and 2 pints more subcutaneously. No serum was given nor calcium salts. But as a precaution against delayed poisoning after two anaesthetics with a chloroform mixture, the patient was given sugar dissolved in milk. The mouth was constantly cleansed by alkaline swabs and the post-nasal space by a nasal douche. The right tonsil (of which the removal had never been completed) sloughed out piecemeal, doubtless as the result of cutting off its blood supply; and two weeks later both tonsillar fossae were clean and empty. There was found to be no albuminuria, nor any blood dyscrasia which could aggravate bleeding. Thus a count of haemoglobin, colour index, and white cells, and a differential count of the latter by Dr. Sanguinetti, revealed only a simple secondary anaemia, which was the only obvious disability of the patient when she was sent to a convalescent home on the twenty-eighth day.

Commentary.

Branches of the descending palatine arteries, or other bleeding points in or near the faucial pillars, are relatively easy to identify and pick up with artery forceps. Bleeding from invisible points deeper in the fossa (the tonsillar branch of the facial, a branch from the dorsalis linguae artery, or a tributary of the pharyngeal venous plexus) of ordinary degree is usually stopped permanently by clips or ligaturing the faucial pillars. Cullum's clamps (or any other pattern which acts similarly) are easier to apply, and usually effective; but the control obtained is not always lasting. In this case, after the clamp had been on for nine hours, the bleeding recommenced still more freely on its removal. The fear of fatal sloughing contra-indicates leaving the clamp on for too long.

In the reporter's experience either stitches or Wagner's clips have succeeded invariably, except in this case, in

which the bleeding was so profuse that the accurate application of either of these was impossible. This case exemplifies a point of the utmost importance—that the complete removal of tonsils (in contradistinction to mere tonsillotomy) is not, as the general public are apt to think, a simple minor undertaking. It is an operation entailing the heavy responsibility which must attend any surgical procedure liable to dangerous complications.

Abstract of the Harbeian Lecture

ON

NERVES IN AMPUTATION STUMPS.

BY

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The lecturer pointed out that the subject selected—nerves in amputation stumps—was the continuation in a special domain of the more general lecture (Arris and Gale) delivered at the Royal College of Surgeons.

Nerves, as contrasted with other structures, have, he said, the peculiar power of regenerating. They grow again so as to re-innervate, or neurotize, a part that has been de-innervated. In the case of amputations the de-innervated portion has been removed by operation, robbing the regeneration of its object. The result is that the growth is wild, and it invades every contiguous structure, such as bones, vessels, muscles, etc., like a malignant growth permeates them. The growth exhibits a pseudo-malignancy, and, by growing between the cells, defeats all methods devised to arrest the progress of regeneration. This is a fact well worth bearing in mind, and the memory of it may stop much waste of surgical energy and time.

1. The immediate pain consequent on an amputation is due to the injuries inflicted on the nerves at that operation. It passes away in a few days.

2. The early pain after an amputation is due to the ends of the nerves, if not cut short, taking part in the general repair of the wound. If the repair is infective there is an infective neuritis, such as was exhibited in the sections shown at the Royal Society of Medicine in April, 1918. If precautions are taken to cut the nerves short and close their open mouths in a simple way, as by the swing-door method, the interior of the nerves are not infected from the wounds.

The three practical points arising from this are:

1. Cut short the divided nerves.
2. Close the mouths of divided nerves.
3. Avoid all wound infection, such as by avoiding handling and manipulation, which are the great causes of low-grade infections such as are not necessarily suppurative.

The healing of a wound by first intention in clinical work does not preclude the presence within it of low-grade infection. Nerve anastomoses mean much manipulation and are therefore banned. The swing-door method¹ is the best and simplest method. Nothing is left behind in the wound which has been touched.

The causation of remote pain is more complex. Three factors are now known:

1. Infective inflammation and its results, islands of fibrous tissue, within the nerve. Cultures have been obtained from nerve endings three years after complete healing of the wound. The organisms were shown by Professor Marinesco at the meeting of the Royal Society of Medicine in April, 1918.

2. The presence of foreign bodies, much insisted upon by Professor Marinesco. This includes metal, silk, and, if the words "foreign bodies" are given a large sense, all material such as fibrous tissue in the interior of a nerve ending.

3. The mental factor, due largely to illness, prolonged hospital stay, lost jobs, inability to take up new ways and interests, etc. It is a very large factor, probably larger in people who have lost limbs than in others.

There may be still more factors, such as that due to vessels trying to expand or contract in tissues permeated by fibrous tissue, but at present their clinical importance is unknown.

Three items of practical value stand out in this:

1. Do not use silk in infective wounds.
2. Do not keep men herded together in homes and hospitals longer than necessary.
3. Get them back to some kind of work, which will absorb their attention and take it off their condition, as soon as possible.

Under the saw-divided end of the bone there is and must be a "dead space" which gets filled with such scar tissue as is formed by the repair of the deeper parts of the wound. If this heals quickly and well, there are very few organisms in this internal scar. If, however, there is deep suppuration, the "dead space" is filled with irritant infective scar tissue. This irritates the bone, causing new bone formation; irritates the muscles causing their reattachment; and gives rise to pains in the stump which cannot bear pressure, slowness in healing with local oedema, and inability to encapsulate surely foreign material (silk and iron). This infective scar tissue is slowly sterilized by the fluids of the body, but if it remains irritant the new nerves formed by regeneration grow into it and the equation of nerve *plus* inflammatory focus equals pain becomes satisfied.² It was also suggested that sensations, perhaps short of pain but responsible for phantom limbs, might result if a new ill protected nerve fibre came in contact with a focus of repair. Reference was made to such a man who had a well marked focus of repair on the internal saphenous nerve in his Hunter's canal. When this was removed he recovered slowly. Be this as it may, the clinical fact remains unaltered that operation often fails to relieve such pains immediately. Such is to be expected. The very operation itself will lead to repairs in nerves amongst other structures, and the patient will have stored up memories of past operations, pains, and phantoms. With such a combination any hope of immediate cure is futile, but operation often causes some alteration, as in the phantom which has become immovable, then there is hope.

Slides demonstrating the quasi-malignant invasion of nerves into a tendon, an infected clot, in nerve coats, muscles, capillaries, arteries and bone, were shown.

The branching and anastomoses of the new nerves must lead to many complicated stimuli arriving at the brain for interpretation. This must lead to frequent variations in the quality and quantity of the sensations and symptoms so produced.

The very great difficulty which the nerve encountered when trying to progress through actively proliferating scar tissue was shown by the nerve spirals and the button-shaped nerve ends. The latter was an exaggeration of the former, the nerve filament having yet greater difficulty in advancing. This teaches a very practical lesson in nerve suture. The ends of the nerves must be so approximated that little scar tissue can be formed for the nerves to grow through. Apparently the nerves grow easily through muscle, but they make little headway through connective tissue. The scar in the skin gets innervated by the regeneration of the nerves. This was shown beautifully in a preparation made by Professor Marinesco.

In conclusion, it was said that the great cause of pain was inflammation, and the causation of phantoms was found in the mind and possibly in the association of foci of repair with nerves.

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At the first meeting of the Zinc and Spelter Joint Industrial Council held at the London Chamber of Commerce on May 15th, Dr. T. M. Legge, Medical Inspector of Factories, Home Office, informed the committee that there had been a decided reduction in the number of cases of lead poisoning and Bright's disease owing to the great structural improvements in the various works. The decline, however, was smaller than it was hoped for, and he invited both sides in the industry to co-operate in reducing the causes of these diseases. Statistics showed that they were almost entirely caused by the dust and fumes given off during the process of smelting.

JAUNDICE: WITH SPECIAL REFERENCE TO TYPES OCCURRING DURING THE WAR.

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LECTURE II.—PART II.

JAUNDICE DUE TO SPECIFIC FEVERS AND INFECTIONS.

RELAPSING FEVER (CHARTS 1-6).

RELAPSING fever is due to blood infection by the spirochaete of Obermeier, the mode of transmission, as shown by Mackie, being through the louse. The disease is endemic in Mesopotamia, Persia, and Egypt, and, in

those of bacterial toxæmia, and not, like those of auto-intoxication, from defective liver function. In the above series of cases the gross mortality was 5 per cent.; British 0 per cent. (44 cases), Indians 8 per cent. (135 cases), Arabs 1 per cent. The variation in the symptoms of a disease in consequence of racial differences was most marked in Mesopotamia, and relapsing fever was an excellent example.

In the treatment of relapsing fever very great success was obtained from the intravenous injection of 0.3 gram of kharsivan; no toxic effects were observed from its use. Usually the temperature fell to normal within from ten to twenty-four hours, and relapses were rare, occurring in only 5 per cent. of the cases. The dose of kharsivan was by my advice purposely kept as low as possible consistent with effective action of the drug, for it was fully realized that the toxins of relapsing fever were liver poisons, and that the greatest care was necessary in the use of an arsenobenzol compound which, as already pointed out, has a powerful toxic action on the liver.

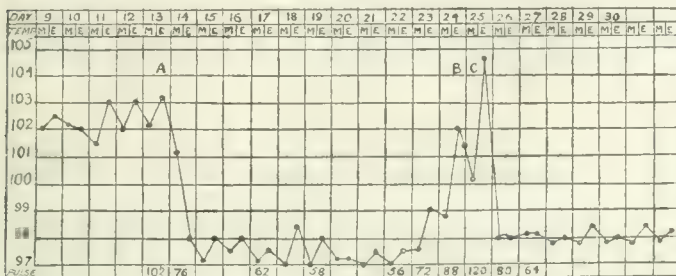


CHART 1.—Relapsing fever (British). A, Blood negative to spirochaete; B, blood positive. C, Salvarsan 0.3 gram. Note the period of apyrexia from the fifteenth to the twenty-second day.

consequence of unavoidable association with the natives who were employed in labour corps, etc., infection spread to some extent to our troops, and I have had exceptional opportunities of studying the disease not only in British, but also in Indians, Arabs, Persians, and Egyptians.

The onset of the disease is sudden and acute. Jaundice occurs quite early, often on the first or second day; it is usually quite marked and in some cases deep.

Captain M. A. Nicholson, I.M.S., from a careful examination of 241 cases at the Isolation Hospital, Baghdad, most of which I saw with him, found jaundice present in 64 per cent. This figure is interesting because in a recent paper¹⁸ on spirochaetosis icterohaemorrhagica by Stokes, Ryle, and Tytler, the estimate of 60 per cent. is given for the occurrence rate of jaundice, which is in very close agreement with our figures for relapsing fever in Mesopotamia.

Enlargement of the liver was observed in 41 per cent. of the cases. Jaundice in relapsing fever is due, no doubt, to

obstruction of the bile ducts; the stools are not pale in colour, and bile pigments are generally absent from the urine or only present in traces. In cases of mild type,

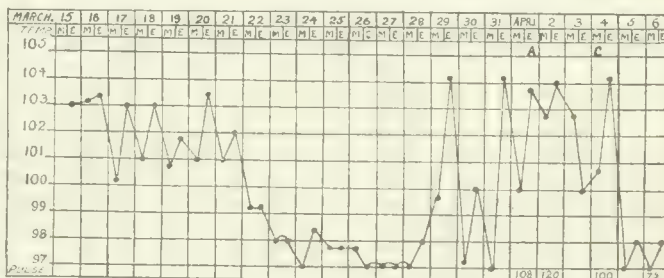


CHART 3.—Relapsing fever (Indian). A, Blood positive to spirochaete. C, Salvarsan 0.3 gram. Six days' apyrexia.

in which deep jaundice with pale stools is present, there is probably some other factor, such as an epidemic catarrhal infection, also operating.

The occurrence of jaundice in malaria was brought directly to my notice in two interesting outbreaks amongst the troops in the Mesopotamian Expeditionary Force. In September, 1918, several fatal cases of jaundice were reported in a camp in Northern Persia situated at an altitude of some 5,000 feet above sea level in a mountainous district. It was suggested that these cases might be due to the newly described spirochaetosis icterohaemorrhagica, and anxiety was felt as to the spread of infection. Acting on orders, Major Mackie, I.M.S., and myself at once proceeded to investigate the outbreak. The following is a short history of two of the cases.

CASE I.

Private P. was admitted to hospital on August 24th, 1918, suffering from weakness and severe anaemia, with fever (102° F.); there was marked enlargement of the liver and spleen. Intermittent pyrexia with maxima on alternate days continued. On August 28th vomiting and shivering occurred, with two attacks of epistaxis; marked jaundice was present. At 4 p.m. on August 29th he was quite conscious, but the respirations were quickened, and the pulse rate increased; at 5 p.m. he became collapsed and comatose, and died on the following day (Chart 7).

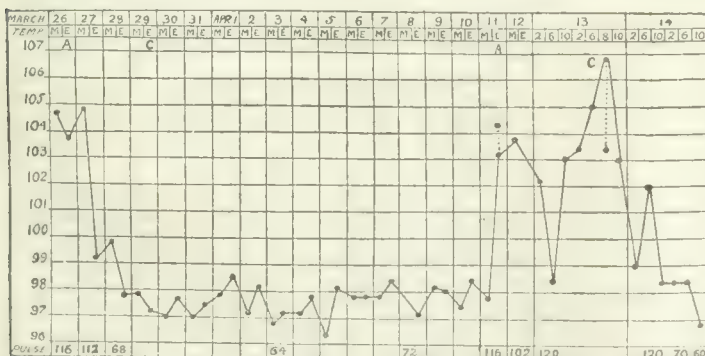


CHART 2.—Relapsing fever (British). A, Blood positive to spirochaete. C, Salvarsan 0.3 gram. Note long period of apyrexia, thirteen days instead of eight.

a catarrh of the fine bile ducts. Anaemia was not usually produced, and symptoms pointing to severe degeneration of the hepatic cells (ictorus gravis) were generally absent. In cases which terminated fatally the symptoms were

Post-mortem examination showed the liver to be greatly enlarged and pigmented, and the spleen about four times the normal size. Small haemorrhagic patches were present in the lower part of ileum and upper part of colon.

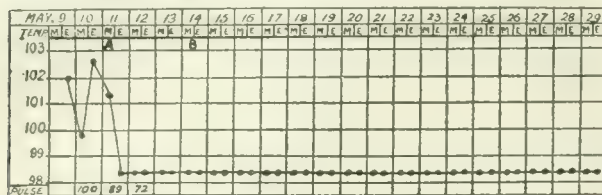


CHART 4.—Relapsing fever (Arab). A, Blood positive to spirochaete. B, Kharsivan, 0.3 gram.

CASE II.

Private T. was admitted to hospital on August 29th, 1918, complaining of pain in the upper abdominal region and weakness; he was extremely anaemic, and there was marked enlargement of the spleen and liver. On August 31st considerable jaundice was present. On September 1st he was worse, and the urine contained albumin in small quantity. At 4 p.m. he was quite conscious but weaker, and respirations were increased to 36. At 4.45 p.m. he became comatose, and died at 5.15 p.m.

On post-mortem examination the spleen was seen to be dark coloured, and about three times the normal size; the liver was pigmented and much enlarged.

In these two cases and many others examined (Charts 8, 9) the same type of symptoms occurred—severe

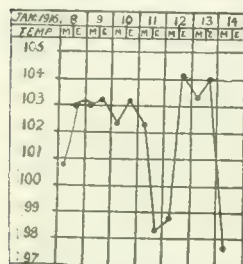


CHART 5.—Relapsing fever (Egyptian); heavy infection.

I found a valuable sign of malaria. In the fatal cases the period of coma was quite short, usually only an hour or two.

The symptoms clearly pointed to malignant malaria. Spirochaetal jaundice was excluded by reason of the malarial type of fever, the great enlargement of the spleen, the very severe anaemia, and the very short period of coma occurring before death. Major Mackie found malignant tertian parasites in all the cases. Along the valley through the mountainous region he found for many miles a mosquito of the anopheles type, and succeeded in obtaining specimens showing definite malarial infection of the salivary glands and stomach.

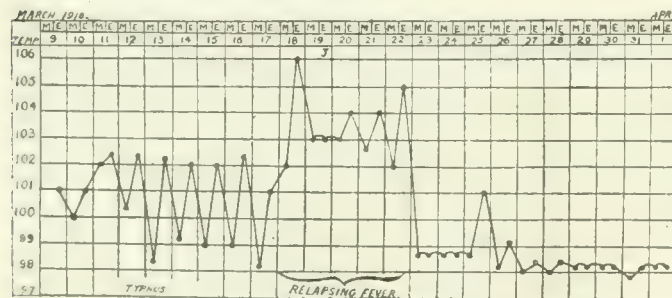


CHART 6.—Typhus and relapsing fever (Arab). J, Jaundice

The investigation was of great interest, because at the high elevation of the district, and the absence of marshes or swampy ground, it might have been expected that the country was non-malarial. Mosquitos were not much in evidence; careful search was indeed necessary to find them, but nearly all in the district were of the anopheles type and dangerous carriers.

The road to Northern Persia runs through valleys at high altitude, fine mountain ranges stretching on either side. Mountain streams of clear crystal water run along the valleys, but after the snows have melted they tend to run dry, and the current is slow. At this time the

mosquitos breed in the little pools left in the bed of the streams, and this period—July, August, and September—is a most dangerous malarial season in Northern Persia. I obtained additional proof of the malarious nature of this beautiful mountainous region by the examination of forty-five Kurdish children, natives of the district, under 10 years of age, who were attached to a local labour corps for famine relief purposes. In 33 per cent. of them the spleen was palpable and definitely enlarged.

Treatment of the cases of malarial jaundice once or twice daily with quinine bi-hydrochloride gr.x in 5 c.cm. of water for intramuscular, or in 10 c.cm. of normal saline for intravenous, injection gave excellent results. The intravenous injections were given in the more severe cases. After four or five days the injections were discontinued, and quinine gr. xxx by the mouth was given daily for three weeks. In the acute stage of the illness quinine by the mouth alone had little or no effect.

MALARIA COMPLICATING INFLUENZA.

In July, 1918, some cases of the world-wide epidemic of influenza occurred in Mesopotamia, being undoubtedly

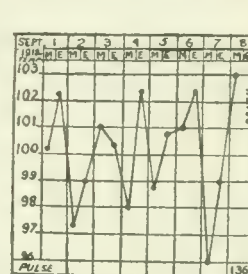


CHART 8.—Malignant malaria and jaundice.

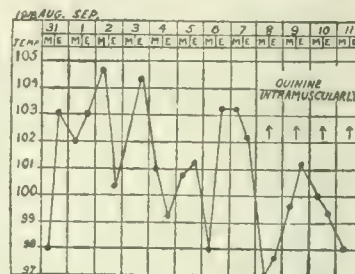


CHART 9.—Malaria (M.T.) and jaundice. Recovery.

brought there by new arrivals from India. The epidemic was limited to certain Indian labour corps working in isolated districts; it did not spread to any extent. In September, 1918, the epidemic again visited Mesopotamia, owing, no doubt, to fresh infections from India by men returning from leave; this time the infection spread with great rapidity and few escaped.

Owing, I am sure, to the open-air life that every one led at this time of the year in Mesopotamia, the cases were, generally speaking, very mild, with usually only two days' fever. The mortality was very low indeed, and very few cases of pneumonia occurred. The Arabs also, owing to their good physique and open-air life, although attacked by the epidemic, came to no harm. This, I understand, is in marked contrast with what was happening in England, where influenza was a veritable plague and carried off thousands of valuable lives.

Towards the end of September the epidemic gradually spread from Mesopotamia to Northern Persia along the road constructed over this difficult and mountainous country by our force; it was the sole link of communication.

An extraordinary illustration of the infectious nature of this disease, and a lesson in the influence which unhygienic conditions and complications from other diseases have on the severity of an influenza epidemic was forthcoming. The Persians in this region lived under very insanitary conditions, and were most debilitated by famine, though our force had done most praiseworthy work in relieving them in this respect. They were greatly overcrowded in the stone and mud dwellings (the apologies for houses) in which they lived, for at that time the nights were colder than in England, and as a consequence the mortality was high and thousands died.

The infection spread amongst our troops, and, in spite of the hygienic precautions taken, a considerable number of deaths occurred. In October, 1918, under special orders,

I visited Northern Persia in consequence of the severity of the epidemic amongst our troops. The hospitals were filled with patients, and I was struck by the character of the symptoms displayed. In addition to the usual sym-

ENTERIC GROUP DISEASE.

In enteric fever jaundice has been observed; thus Osler states¹⁹ that in his series of 1,500 cases jaundice

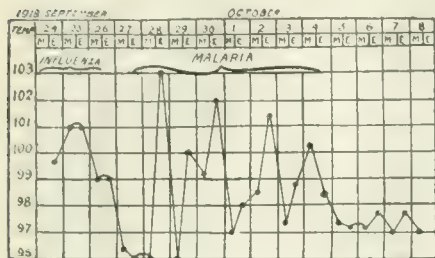


CHART 10.—Influenza and malaria.

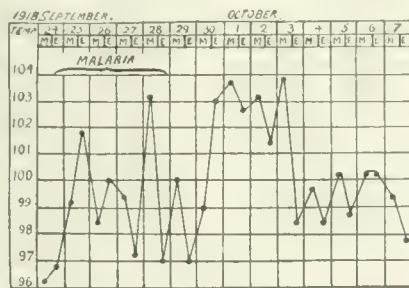


CHART 11.—Influenza, malaria, phthisis. Influenza before admission. From September 30th consolidation of right apex; phthisis.

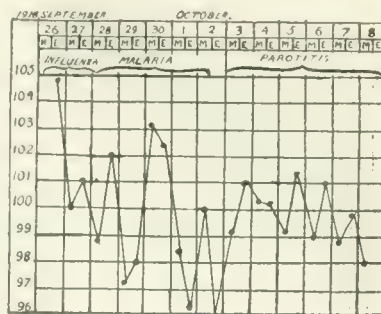


CHART 12.—Influenza, malaria, parotitis.

ptoms of influenza, a large proportion (about 90 per cent.) of the patients showed anaemia, slight but definite jaundice, and marked enlargement of the spleen and liver. It was obvious that some complicating factor was present, and that this was malaria. Blood examinations were made, and in all these cases malaria parasites were found. Major Christie, I.M.S., who has had great experience of malaria, examined a great number of these cases, and found that in about 40 per cent. the malaria parasites were of the malignant tertian type.

It was the malarial complication which was accounting for the high mortality of the influenza epidemic in our troops in this region (Charts 10-12). A relatively small proportion had pneumonic complications, but even these showed malarial infection in addition. Treatment of these cases with injections of quinine hydrochloride, as above described, gave excellent results. The epidemic subsided after about three or four weeks. It was a great illustration of how an epidemic of influenza could set alight to a previous existing but quiescent infection, malaria, with accompanying toxæmic jaundice in most of the cases.

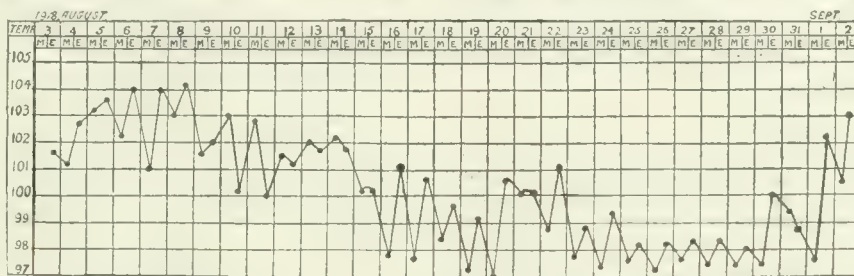


CHART 13.—Paratyphoid A with jaundice. Chart commences on the sixth day of jaundice.

occurred in 8 (0.5 per cent.) and cholecystitis in 15 (1.3 per cent.). Murchison regarded jaundice as an extremely rare complication of typhoid fever. There is no doubt that in the enteric group disease of the Dardanelles and Mesopotamia jaundice was a comparatively common symptom both in enteric fever and in paratyphoid A and B. The percentage occurrence was much higher than in Osler's series, probably over 5 per cent. Accurate figures will be forthcoming later, since in Mesopotamia careful records of all enteric group cases have been kept in special tabulated registers. At Cape Helles (Dardanelles) in 1915 Captain Campbell, R.A.M.C., found paratyphoid organisms

in 9 cases of jaundice with continued pyrexia, 5 being paratyphoid B. He also found paratyphoid B in the bile from a case of suppurative cholecystitis operated upon.

In Mesopotamia several cases showed on

bacteriological examination infection of the bile with enteric or paratyphoid A or B organisms (Charts 13-15).

The commonest time of onset of jaundice in enteric and paratyphoid fever is towards the end of the second week. I have seen, however, several cases in which jaundice occurred within the first six days, and in a few it was present at the onset of the symptoms. In one case it did not occur until the twenty-ninth day of the disease. The diagnosis was determined by finding the organisms in the blood by culture.

Thus there appears no reason to doubt that jaundice due to obstructive catarrh of the small intrahepatic bile ducts occurs in the three forms of enteric group disease,

and I am of opinion that this obstructive catarrh is usually in such cases directly due to the particular enteric group organism present, and not to a secondary

BLACKWATER FEVER.

This pernicious type of malarial haemoglobinuria is common in the Gold Coast region of West Africa.

Three cases were seen by me in Northern Persia in 1918. In Mesopotamia I saw several times, in consultation with Lient. Colonel Skinner, R.A.M.C., a member of his unit who had been heavily infected with malaria in Salonica, and developed a typical attack of blackwater fever after several months' residence in Mesopotamia; the cause, no doubt, was the Salonica infection. In all these cases a slight but definite jaundice developed within twenty-four hours of the onset; it deepened, but never approached the limit of complete obstruction. The earlier development of jaundice is a characteristic feature of blackwater fever. The prime factor in its causation is the enormously rapid destruction of red blood cells.

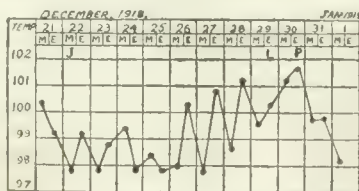


CHART 14.—Paratyphoid A with jaundice; admitted to hospital December 25th, 1918, for D.A.H.; temperature rose December 18th. J, Jaundice. T, Leucopenia. P, Paratyphoid A isolated from stools.

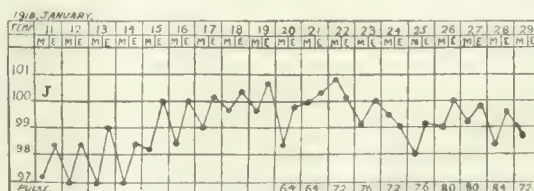


CHART 15.—Enteric group disease + epidemic jaundice. Chart commences on sixteenth day of illness; jaundice marked. From January 14th enteric group pyrexia; neuritis (left gluteal). J, Jaundice.

infection. This view receives confirmation in a case which occurred in the Dardanelles.

CASE III.

Jaundice developed on the third day after admission to hospital, and death ensued six days later from sudden collapse. At the post-mortem examination the duodenum was found of a red velvet appearance, and the walls of the common bile duct

and hepatic ducts showed acute inflammation; the gall bladder was distended with semi-purulent greenish bile containing paratyphoid B organisms. I am indebted to Captain C. H. Corbett, R.A.M.C., whose case it was, for the above notes.

This was undoubtedly a case of ascending catarrhal jaundice, spreading upwards from the duodenum, common bile duct, hepatic ducts, to the smaller bile ducts, causing obstructive cholangitis from a paratyphoid B infection.

When we consider the great effect climatic conditions and environment have on disease, and the fact that a disease may change greatly in type after a period of years, as, for example, scarlet fever, it is not surprising that in countries like Mesopotamia and the Dardanelles the incidence rate of jaundice should be decidedly higher than in England, France, or America. Exactly the same kind of variation in jaundice incidence is well shown in influenza and pneumonia epidemics.

DYSENTERY.

Jaundice is not a symptom of either form of dysentery, and does not usually occur in the early stages of the disease. In severe cases with extensive ulceration jaundice does sometimes occur. This is probably due to secondary infection facilitated by the damaged bowel. It will be shown later that there is evidence of a causal connexion between dysentery and epidemic catarrhal jaundice, the former having some predisposing influence on the latter.

TYPHUS FEVER.

The occurrence of jaundice in typhus fever is very uncommon. I saw it in two cases in Mesopotamia in which relapsing fever infection could be excluded. Jaundice is not mentioned by Osler or Castellani amongst the symptoms or complications of typhus. If jaundice occurs in a case of typhus it is generally an indication of an additional infection—malaria or relapsing fever—which blood examination will elucidate.

PNEUMONIA.

Jaundice not infrequently occurs in pneumonia; Osler points out that there is a curious irregularity in its occurrence in different outbreaks.¹⁸ Blankenhorn found jaundice in 12 out of 40 cases examined in America, and all had urobilin in the urine. The incidence of jaundice in pneumonia appears to be much higher in America than in England. It is due probably to intrahepatic catarrh of the fine bile ducts and its presence does not necessarily increase the gravity of the prognosis.

INFLUENZA.

Jaundice has been recognized for some time as an occasional symptom of influenza, especially of gastro-intestinal type. Osler states that in some epidemics it is common. In the cases seen in Mesopotamia, uncomplicated by malaria, jaundice was extremely rare. In the influenza epidemic at Bramshott, September and October, 1918, according to Lieut.-Colonel Cooper Cole, C.A.M.C.,²¹ jaundice of considerable degree was usually of bad omen, and in fatal cases of this kind "fairly marked hepatic degeneration and occasionally perihepatitis" were found *post mortem*. Major-General Sir Wilmot Herringham, in opening the discussion on influenza²² on April 10th last, at the Special Clinical and Scientific Meeting of the British Medical Association in London, referred to the recent epidemics which had attacked our army in France. He pointed out that in the epidemic of July, 1918, pulmonary symptoms first began to appear, and this was followed by a most severe outbreak in September, with a mortality of 5 per cent, which subsided in January, 1919. A third epidemic of lesser severity and incidence commenced in March, and in it jaundice became an associated symptom.

SYPHILIS.

The occurrence of jaundice in syphilis is so well known as to need only brief mention. In the acute secondary stage jaundice is not uncommon, and is probably due to intrahepatic catarrh of the finer bile ducts and increased destruction of red blood cells. In congenital and tertiary syphilis the hepatic fibrosis, whether unilobular, multilobular, or in gross patches forming gummata or scars, is commonly associated with jaundice.

YELLOW FEVER.

In this disease the most profound degenerative changes attended by fatty deposition are produced with great rapidity in the liver cells, and there is also a marked increase in the destruction of red blood cells. Definite jaundice commences as early as the second day, thus, according to Osler,²³ "the early manifestation of jaundice is undoubtedly the most characteristic feature of the facies of yellow fever."

As in phosphorus poisoning, delayed chloroform poisoning, and arsenobenzol poisoning, so with yellow fever, there is a short quiescent period of two or three days following the symptoms of the initial stage which last three or four days. In severe cases the quiescent stage is followed by increased depth of jaundice and the gravest symptoms—black vomit, haemorrhages from the gums or other mucous membranes, petechiae of the skin, albuminuria, delirium, subsultus tendinum, possibly convulsions, Cheyne-Stokes breathing, coma, and death.

These symptoms of the third stage of yellow fever are familiar, for they are those of "icterus gravis," which is the usual *finis omnium* of all the fatal forms of toxic jaundice.

PYAEMIA AND SEPTICAEMIA.

In conditions of septicopyaemia jaundice not infrequently occurs, an important causal factor being the great haemolysis caused by the circulating toxins.

In septicopyaemia affecting the portal distribution suppurative pyelophlebitis and multiple liver abscesses are likely to occur and will be associated with definite jaundice, rigors, intermittent high pyrexia, enlarged very tender liver, and other signs of septic poisoning.

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- ¹⁹ Sir William Osler: *The Principles and Practice of Medicine*, 8th edition, p. 26.
- ²⁰ Blankenhorn: *Transactions of the Association of American Physicians*, 1917.
- ²¹ C. E. Cooper Cole, Lieut.-Colonel C.A.M.C.: Preliminary Report on the Influenza Epidemic at Bramshott in September and October, 1918, *BRITISH MEDICAL JOURNAL*, November 23rd, 1918.
- ²² Sir Wilmot Herringham: Special Clinical and Scientific Meeting of British Medical Association in London, on April 10th, 1919. Discussion on Influenza, *BRITISH MEDICAL JOURNAL*, April 19th, 1919.
- ²³ Osler: *Ibid.*, p. 359.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

EFFICIENT TREATMENT OF THE CHRONIC RUNNING EAR.

The following remarks are based upon an experience of three and a quarter years in the army in charge of an aural clinic in Egypt and at home. In Egypt I was allowed seventy beds and an out-patient department, and the experience has convinced me of the futility of our previous methods of treating otorrhoea; in the future some more generous provision of in-patient treatment must be made on a large scale if we are to increase the efficiency of the enormous numbers of partially deaf attending out-patient departments. Especially is this desirable in the case of children. The aural work in Egypt was admirably organized by Lieut.-Colonel Sir J. W. Barrett, R.A.M.C., the consulting aurist, and to its almost complete success I ascribe the rapid reduction in the number of beds required. Essentially it consisted of the following routine:

1. All cases of otorrhoea were in the first instance admitted to a hospital for treatment by an aural specialist with a trained nursing staff.
2. Routine treatment to the ear was given at least twice daily by a nurse specially trained for the work; in certain cases the patient remained in bed and cleaned his own ear every fifteen minutes or so. All granulations or any other obstruction to free drainage were previously removed by the aural specialist.
3. If there was doubt as to retention of pus in the mastoid the patient was kept in bed on a light diet; the temperature was taken every two hours, and blood examinations were made. Syringing was only allowed in special cases. In a few cases an x-ray photograph was taken. In nearly every case under treatment by mopping up discharge down to the drum and the insertion of antiseptic drops, the discharge diminished until it entirely disappeared or only a little mucus persisted.
4. When the patient left hospital he was given antiseptic drops for his own use and taught to clean his own ear down

to the tympanic cavity. His medical officer was requested to return him to the hospital in which he had been treated if any untoward symptoms should occur.

During the whole of my experience of this routine I do not recollect a single patient requiring a mastoid operation after the routine treatment had once been commenced and properly continued. Without exception, the only patients requiring interference with the mastoid region were instances of men who had not reported sick with their ears, and so had been carrying on with an untreated discharge. Usually these were very acute and extensive cases, and streptococcal in origin.

Rather against our previous opinions the conclusion was forced upon us that chronic otorrhoea is not the dangerous condition commonly supposed, if efficiently treated. Such treatment often necessitates a short period in bed in the first instance, with skilled attendance; in very few cases need the mastoid be drained. My experience is utterly against the contentions of those who have recently advocated almost routine drainage of the antrum, holding, as they do, that chronic otorrhoea is perpetuated by a chronic infection of the mastoid antrum. In my opinion, it is the treatment by rest in bed and the high standard of surgical cleanliness necessitated by sojourn in a hospital or nursing home bed that accounts for the success of these "modified" mastoid operations. On the other hand, conservation of the middle-ear structures is rightly replacing a haphazard scraping away of all the contents of the tympanum, and as such is very much to the good when there is actually a purulent affection of the mastoid region.

The complete and radical mastoid operation should not be performed as a routine—the indications are few; and the occurrence of mastoiditis in the course of chronic otorrhoea of the usual type of sepsis is most emphatically not such an indication.

WILLIAM WILSON, M.D., B.Sc.,

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Manchester.

SURGICAL TREATMENT OF A CASE OF ECLAMPSIA.

Mrs. H., aged 42 years, was admitted to the Oldham Union Infirmary on February 17th, 1919, for pregnancy complicated by eclampsia. She had had one convulsion before admission. On admission she was very restless and incoherent, and quite unable to give any account of herself. The urine contained a very large amount of albumin. The treatment consisted of enemata, rectal salines, and hot packs, and no further convulsions occurred until after a normal delivery, on February 19th, of a full term female child.

Soon after confinement the patient became very restless, and began to have convulsions, which became gradually more frequent until she was having them every few minutes. Morphine, pilocarpine, and other methods of eliminating the toxins were tried, but, as the patient's condition became steadily worse, it was decided to operate. On the evening of February 22nd, Dr. Radcliffe, the visiting surgeon, performed decapsulation and nephrotomy of both kidneys, which were found to be in a condition of parenchymatous degeneration, being large and white. From the time of operation the patient's condition, mental and physical, steadily improved. No more convulsions occurred, and she is now ready for discharge, the urine being free from albumin, and her mental condition normal.

I wish to thank Dr. Robert P. Parker, the superintendent medical officer, for permission to publish the notes of this case.

MARY G. CARDWELL, M.B., Ch.B.,
Resident Assistant Medical Officer.

Union Infirmary,
Oldham.

THE foundation stone of the great Victoria Hospital in Rome was laid on April 28th in the presence of the King and Queen of Italy and a number of Ministers, Senators, Deputies, the Syndic of Rome, and other officials. The stone bears the following inscription: "Victor Emmanuel III Rex Italiae lapidem auspicalem nosocomii a victoria excitandi sollemni ritu statuit iii Kal. Maias Anno MCMXIX." The hospital, which is situated at Monteverde, will cover an area of about 200,000 square metres. It will at first contain a thousand beds; later this number will be increased to fifteen hundred.

Reviews.

SURGERY OF THE ENTERIC GROUP OF DISEASES.

WITH that felicity for epigrammatic phrase which is so peculiarly his own, Sir William Osler, speaking at the recent annual dinner of the British Medical Association, referred to typhoid fever as the "great killer," and expressed his opinion that one of the greatest medical wonders of the war was that this enemy had been reduced to impotence. In the British armies in France the enteric fevers have been almost a negligible factor in the sick incidence from the numerical point of view, and the success which has attended the work of preventive medicine constitutes a triumph. In the French armies typhoid fever was a very serious menace until wholesale inoculation was introduced. Further, whilst epidemics of the disease spread among the civilian population in the areas occupied by the British troops, our army, thanks to the protection afforded by inoculation, remained practically free.

Of the cases which occurred amongst our own troops a very considerable number were treated in the Boulogne base, and it was a study of these cases which furnished the material on which Colonel WEBB-JOHNSON has based his book on the *Surgical Aspects of Typhoid and Paratyphoid Fevers*.¹ A consecutive series of 2,500 cases, the nature of which was established either by bacteriological examination or by agglutination tests, was studied, and the surgical complications occurring among them formed the author's starting-point. Happily he was not content to place on record merely his own observations, but has drawn also upon the available surgical literature, with the result that he has given in compact form a very comprehensive account of the protean manifestations of the enteric infections.

In a brief historical sketch he states that enteric was first noted as a military scourge in the civil war of 1603. John Hunter, acting as a military surgeon in the Seven Years' War, met with cases of fever with intestinal ulceration; many of his specimens are still preserved, and some of them are illustrated here. To W. W. Keen of Philadelphia, however, the credit is ascribed for first writing on the surgical complications of typhoid, in his book published in 1898.

The fundamental bacteriological knowledge on which the modern conception of the enteric fevers is based, and the subdivision of the "Group" into typhoid, paratyphoid A, and paratyphoid B, is succinctly stated. These three infections, clinically and pathologically similar, differ in severity, paratyphoid A being on the whole less severe than paratyphoid B, and the latter than typhoid. The distinction can only be definitely determined by the bacteriologist, and the war has proved the great value of Dreyer's method of agglutination. Speaking generally, cases of typhoid seen in France were less severe than those met with in civil practice, for the disease was in the majority of cases modified by inoculation. But inoculation, whilst modifying the severity, does not alter the broad characteristics of the disease, a point which was not sufficiently considered by those who, in the early days, regarded trench fever as typhoid modified by inoculation, whereas in certain salient points it differs.

The fact that typhoid is a bacillaemia is duly emphasized, and it is pointed out that this fact explains the widespread complications, since every organ in the body has been exposed to a bacillus-infected blood stream. The specific bacillus has been recovered from many infected regions, the recovery being more likely when the complication arises late in the course of the disease.

An interesting table detailing, under twenty-eight headings, the surgical complications, shows the incidence of each in the three members of the "group" and their comparative frequency in inoculated and uninoculated men. The figures will well repay careful study by those who desire statistical proof of the value of inoculation.

Colonel Webb-Johnson then deals with the complications as they arise regionally. He advises the administration

¹ *Surgical Aspects of Typhoid and Paratyphoid Fevers*. By A. E. Webb-Johnson, D.S.O., M.B., Ch.B. (Vet.), F.R.C.S. London: Henry Frowde, and Hodder and Stoughton, 1919. (Demy 8vo, pp. 190; 26 figures, 10s. 6d. net).

of urotropine when infection of the biliary tract arises. In discussing the treatment of venous thrombosis mention is made of the method of intravenous administration of sodium citrate introduced by Major H. F. Marris. Though the number of cases was too small to warrant definite conclusions, the results were so far encouraging as to justify further trial of this remedy; post-enteric thrombosis is a terrible handicap to a young man, and often cripples him for life. Larger doses and a higher percentage than Major Marris employed (10 oz. of a 0.5 per cent. solution) may give more definite results. The chapter on bone complications deserves special study; emphasis is laid on the important pathological fact that the bone marrow is very frequently infected by the *B. typhosus*. When this condition is present and widespread the value of localized operations must be small, and total eradication of the infected tissue may be impossible. Colonel Webb-Johnson considers that vaccines should therefore play a large part in the treatment of such cases.

Lastly, we may notice the discussion on the "carrier" problem, which suggests many points for careful thought. Apart from the well recognized carriers who are passing bacilli from the urinary or the biliary tracts, the spleen is suggested as being very frequently the focus from which a constant stream of organisms is discharged, to reach the exterior by way of the bile; that the bone marrow may play a similar part has already been mentioned. Unhappily in the former case vaccines have not been found of much value, and the problem of the right treatment of the splenic "carrier" still remains unsolved.

In his foreword Lieut.-General Sir John Goodwin, Director-General Army Medical Service, states, "in placing the results of his study and experience before the profession Colonel Webb-Johnson has conferred a benefit on surgeons which they will sincerely appreciate," an opinion which we gladly endorse. A word of praise must also be given to the publishers, for the printing, illustrations, and paper of the book are all excellent.

TREATMENT OF NERVE INJURIES.

THE war has afforded unique facilities for the study of nerve injuries, and in the second edition of *Nerve Injuries and their Treatment*² Sir JAMES PURVES STEWART and Mr. ARTHUR EVANS may be complimented on making good use of the occasion. The new edition has been largely rewritten. After a preliminary account of nerve physiology, chapters are devoted to methods of examination, varieties of injuries, simulated injuries, prognosis, treatment, and operations on nerves. The body of the book contains a discussion of lesions of individual nerves based on 520 cases. The style is clear, exact, and concise, and the illustrations are good. Prognosis is discussed on general lines and is not traced out in individual cases; the reader will be disposed to conclude that the prognosis of nerve injuries after operation is not so good as we were led to suppose before the war.

Almost every conceivable nerve injury is described and each description is preceded by a good anatomical account of the plexuses and individual nerves. On nerve regeneration the authors adhere to the neurilemma theory rather than the downgrowth of the axis cylinders. It is disappointing that, in a book which is to be regarded as a standard work on nerve injuries, a fact so basal as the manner of regrowth of a nerve is not definitely settled. We hope that before the work reaches its third edition one school will have confounded the other by definite facts. The book is full of good work. We can recommend it as a sound, practical, scientific work.

CLINICAL DIAGNOSIS.

To write a modern book on clinical diagnosis is no light task, owing to the constant introduction of new methods, and the increasing necessity laid upon the physician of keeping abreast of the allied sciences of chemistry, physics, and even higher mathematics, not to mention the steady stream of new knowledge in physiology and pathology. Dr. MARTINET has valiantly attacked the problem, and the

production of his *Diagnostique Clinique*³ during the war is an achievement of which he may be proud.

After a preliminary note on errors in diagnosis, due in the author's view to three main causes—ignorance, inefficient examination of the patient, and errors of judgement—Dr. Martinet arranges his material under two main headings. In the first part of the volume methods of diagnosis are described regionally, and a systematic account is given of the various tests and clinical methods whose value has been proved. For instance, in discussing blood pressure, the three methods of using the sphygmomanometer—by palpation of the artery, by auscultation, or by reading the maximum oscillations—are discussed and illustrated. The author, whilst preferring the oscillatory method, yet does justice to the other two. Place has been found even for such specialized examinations as those with the electrocardiograph. The author is not content to mention some particular method of examination, but gives an illustrated description of how to acquire it. In laryngology, to quote a specific instance, various simple exercises are described by means of which the student can master the elements of this by no means easy art before he proceeds to examine a patient. The illustrations are numerous and in many cases very ingenious, in that they present to the reader at a glance a very complete summary. The chapter on valvular lesions contains many, each dealing with a particular lesion, and representing diagrammatically the various phases in the cycle, with a cardiogram and a graph of the bruits heard.

The chapter on the principles which guide the examination of a patient is helpful, in that it points out the importance of speed without neglecting anything essential, and suggests many useful ways in which this may be attained. At this point the author permits himself a digression; he looks forward to a rapidly approaching future when the growing complexity of medical technique will demand for the private patient, as for those in hospital, a combination of effort which may best be described as "team work." Neither public nor professional opinion has yet reached in France, or in England, the stage which has been attained in America; but he would be a bold man who would regard Dr. Martinet's forecast as impossible of fulfilment.

The second part of the book is devoted to a discussion of symptoms. They are dealt with alphabetically, to permit of more ready reference. A sampling of various sections indicates that the underlying causes of the symptoms are fully dealt with, a descriptive medical dictionary being the result.

To those who are in the habit of reading French the book may be commended as a very useful work.

NOTES ON BOOKS.

THE war, which has made us intimate with many strange things and conditions, has emphasized the importance of animal parasites in the causation and spread of disease. For this reason Lieutenant LLOYD's book on *Lice and their Menace to Man*⁴ will be read with interest. As he says, it is strange that so common an insect should still be the subject of many erroneous statements; for example, until lately it was generally held that body lice deposited their ova exclusively on garments and bedding. We now know that both pubic and axillary hairs may swarm with their nits, an observation of the highest importance in its relation to disinfection. The book contains a very complete account of the habits and life-history of the insects, and the various methods of dealing with the pest are fully described. Chapters on relapsing fever, typhus fever, and trench fever are included, the last being written by Major W. BYAM, R.A.M.C. That louse-borne disease occasioned an enormous amount of wastage in the armies is a matter of common knowledge, and although typhus never spread to the Western front, its menace was constantly felt. For this reason any contribution to the question is of especial interest to the sanitarian. But the general reader also, for whom this little volume has been specially designed, will find in it much to engage his attention. The information is compactly arranged, and in a comparatively small space there is contained a good account of this very important subject.

² *Nerve Injuries and their Treatment*. By Sir James Purves Stewart, R.C.M.G., C.B., M.D. (Edin.), F.R.C.P., and Arthur Evans, M.S., M.D. (Lond.), F.R.C.S. Second edition, revised and enlarged. London: H. Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. xii + 249; 137 figures, 12s. 6d. net.)

³ *Diagnostique Clinique*. By Dr. A. Martinet. Paris: Masson et Cie. 1919. (Roy. 8vo, pp. 912; 782 figures, 33 francs.)
⁴ *Lice and their Menace to Man*. Lieutenant Lt. Lloyd, R.A.M.C. (T.). With a chapter on Trench Fever by Major W. Byam, R.A.M.C. London: H. Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. 148; 13 figures, 4 charts. 7s. 6d.)

PORTRAIT OF SIR CLIFFORD ALLBUTT.

As announced a few weeks ago, Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the members of the Association, and subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is now prepared to receive subscriptions of one guinea or less.

The following is the first list of subscribers:

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THE LONDON RADIUM INSTITUTE.

ANNUAL REPORT.

THE report of the London Radium Institute for 1918 differs in some respects from those previously issued. The usual series of malignant growths are included, but the account to be given of them does not differ from those which have appeared in the previous yearly reports; the methods of treatment and the varying results are much the same. This time prominence is given to the treatment of non-malignant conditions, war-time injuries, and diseases of an unusual type or infrequent occurrence, which have proved to be amenable to radium treatment. In all, 743 cases were dealt with during the year; of this number, 61 were found on examination to be unsuitable for treatment. Of the remainder, 103 are reported as apparently cured, 27 as cured, and 288 as improved; 6,623 treatments were administered, and of these 4,163 were given free of all charges to necessitous patients—an important point, as showing the large amount of purely charitable work undertaken. It should also be noted that out of 789 emanation applicators prepared 417 were distributed gratuitously to hospitals and to medical practitioners. Now that the war has come to an end it has been possible to organize a Pathological Research Department, and Dr. J. C. Mottram has been appointed Director of the Research Laboratory. In addition, Mr. R. J. Clarke, M.Sc., has been added to the staff as Assistant Physicist. The report is issued, with the authority of the committee, by Mr. A. E. Hayward Pinch, F.R.C.S., the medical superintendent, and any medical practitioner can obtain a copy by application to the Secretary of the Radium Institute, 16, Riding House Street, Portland Place, London, W.1.

Lymphadenoma and Leukaemia.

Lymphadenoma generally exhibits an exceedingly favourable response to radium therapy, especially when the superficial glands only are affected and there is no splenic enlargement. The diminution of the size of the glands is rapid after prolonged exposure to a large amount, 300 to 500 mg., heavily screened. They may disappear in about four weeks after the exposure. A case is detailed of a soldier with enlargement of the cervical glands on both sides, together with a shadow to x rays in the upper mediastinum. The affected glands and the mediastinal shadow entirely disappeared, he lost his anaemia, and recovered so completely as to return to full duty; the treatment in this case consisted of the application of 400 mg. of radium screened with 2 mm. of lead on four occasions between April and November.

In a case of lymphatic leukaemia, in addition to the disappearance of enlarged glands, an enlarged spleen receded behind the ribs; whilst in a case of splenic leukaemia a spleen reaching well below the umbilicus, a month after being exposed to a similar dose of radium for thirty hours, was very little larger than normal. Two months later this spleen was successfully removed by operation, and the patient made a complete recovery.

Fibroid Disease of the Uterus.

The menorrhagia and metrorrhagia accompanying fibroid disease of the uterus were almost invariably checked, and in some cases completely abolished by radium treatment. Some diminution in the size of the existing tumour may also be produced. Suitable cases are those over 40 years of age, and the fibroid should be of moderate size and not the site of any inflammatory or degenerative changes.

Chronic Metritis: Uterine Fibrosis.

This exceedingly obstinate condition, which frequently leads to the removal of the uterus, is often curable by radium, menstruation becoming normal. Prolonged screened exposures of about thirty hours' duration are necessary, both intrauterine and extrauterine, and these treatments may have to be repeated four or more times. Several striking cases are quoted in detail—cases in which the loss had been great enough to produce anaemia.

War Injuries.

These are of such great importance at the present time that we quote the conclusions arrived at in full:

During the past five years many patients suffering from a great variety of war-time injuries have been sent to the Radium Institute for treatment. Some cases were of such a character as to be manifestly unsuitable for radium therapy—for example, hernia cerebri, bony ankylosis of joints, etc.; but others, such as keloids, vicious cicatrices, painful scars, arthritis of infective origin, fibrous adhesions, and periosteal sarcomata following injuries, have been taken for treatment. The exigencies of the Services have, however, prevented many of these cases from being followed to a successful termination, the patients either being transferred to some other hospital, or invalided out of the Services, and returned to their homes at a distant part of the country before treatment was completed. These circumstances often rendered the results of the treatment of keloids and vicious cicatrices disappointing, as to secure the best effects prolonged exposures with silver-screened apparatus need to be given at six-weekly or two-monthly intervals, over a period of one year or even longer. In those instances where the patients were able to comply with these requirements the results were, as a rule, satisfactory.

A few cases of painful scars, due probably to the involvement of terminal nerve filaments in the scar tissue, were treated, but though many different forms of exposure and screening were tried, but very little relief was obtained.

Considerable caution had to be exercised when dealing with scars occupying an extensive area, or in close relationship with bony tissues, as in such lesions it was found that by reason of the greatly diminished blood supply, and impairment of the functions of the trophic nerves, vesication or superficial ulceration was very easily induced. Quarter strength applicators were, therefore, always employed, and the length of the exposures curtailed. A few cases presented themselves for the treatment of scars, in the neighbourhood of which fragments of shrapnel or metal remained embedded. The secondary radiation reflected from the surface of such bodies greatly intensified the reaction, and so necessitated a proportionate diminution of the strength and duration of the exposures.

The effect of radium irradiation upon chronically inflamed tissues, which have sometime previously been the site of acute septic changes, occasionally stimulated some dormant focus of bacterial infection, and in the treatment of such patients the possibility of this occurrence has always to be borne in mind.

When dealing with the limitations of movements of joints due to the presence of fibrous adhesions, the date at which the treatment commenced was found to be a factor of the greatest importance, as if the patient attended before the fibrous tissues were fully organized, and had commenced to contract, the results were obtained much more rapidly and proved more definite and permanent.

Tuberculosis.

In the early stages of tuberculous adenitis radium will often cause a diminution in the size of the glands, and either postpone or avert the need for surgical measures.

In lupus vulgaris cases of long standing which have proved resistant to Finsen light, x rays, CO₂ scarification, caustics, etc., are sometimes quickly and effectively cured by radium. Three cases of this disease affecting the face are quoted in detail and the manner of treatment stated. All were cured.

Leucoplakia.

This condition, whether affecting the mouth or vulva, is almost always much benefited by radium, and the pruritus so commonly associated with it is greatly relieved. There is, however, a strong tendency to recurrence.

Naevi.

The radium treatment of cavernous naevi may be regarded as most satisfactory, and though the procedure is somewhat lengthy, screened exposures having to be given every six weeks for from six to twelve months or even more, the result is always better than could be obtained by other means. On the other hand, capillary naevi are not so favourably influenced, and although the removal of a small capillary naevus may quickly be brought about by the employment of a destructive reaction of moderate degree, this method is not practicable in large and widely distributed port wine stains by reason of the extensive scarring which would result. Much care and experience are needed for the treatment of these cases. Personal idiosyncrasy is an important factor. There is a great tendency to produce telangiectases in the treated areas; they should be destroyed immediately with the electric cautery.

Warts, Papillomata, Etc.

Warts, especially when occurring in certain situations, such as the eyelids, lips, penis, labia, etc., are easily removed by radium. If the dosage is correctly estimated they disappear by an almost painless exfoliation in about a month, and there is little or no tendency to recurrence. Unscreened exposures of one to one and a half hours should be given with full strength applicators. Senile keratomata may be treated in similar fashion with equally good results. Moles, especially if pigmented, are not suitable lesions for radium therapy, and should be severely let alone.

A number of cases of warts, an example of papilloma of the foot, a granuloma of the face, and two cases of keratoma are described.

Skin Diseases.

A case of chronic eczema limited to small, but intensely irritable, areas in the axillae, was completely cured by two exposures, with half strength apparatus screened with $\frac{1}{100}$ mm. of aluminium, the exposures being for fifteen minutes only. The same result with practically the same treatment, but without screening, was obtained in a case of seborrhoeic eczema.

In lichen annularis with numerous patches on the extensor aspects of both legs and ankles, relief from itching was obtained within a few days of the first application, and entire disappearance of the patches after four treatments. A patch of lichenification which had been present on the buttock for twenty years, and in which the itching was very severe, received treatment from 80 mg. without a screen for fifteen minutes on three occasions. Definite improvement followed each application, and in two months the lesion had gone.

Two cases of Fordyce's disease (miliary lesion of the mucous membrane of the lips accompanied by itching and burning) are reported in detail. Both had resisted other methods of treatment. All trace of the disease was removed by short exposures to radium screened with $\frac{1}{100}$ mm. aluminium only. The first case did not respond when the radium was screened with 1 mm. of silver. Other skin conditions successfully treated were xanthoma palpebrarum, xeroderma pigmentosum, mycosis fungoides, and melanoma.

Chemico-Physical Laboratory.

The report concludes with an account of the work of the Chemico-Physical Laboratory by Mr. W. L. S. Alton, the director. The most interesting part of it is that describing the method of mounting applicators with dental vulcanite as the fixative. This method has been found to be a very great advance on the older varnish, and the applicators appear to be permanent. Also they can be made in four days, as compared with four weeks for the varnish; and the radium sulphate can be extracted with ease should occasion arise.

At a general meeting of the Medical Society of London on May 12th a resolution was proposed to delete the by-law excluding women from attending the society either as Fellows or visitors. An amendment to provide that a woman might be introduced as a visitor by a Fellow to not more than three meetings in any one session was carried. At a second general meeting, to be held on Monday, June 2nd, this amendment will come up as a substantive resolution.

THE RELATION OF VOLUNTARY HOSPITALS TO THE STATE.

At a conference held by the British Hospitals Association at the London Hospital on May 16th, under the presidency of Lord Knutsford, a discussion on the relation of the voluntary hospitals to the State was opened by Sir E. NAPIER BURNETT, M.D., who urged that some alteration of policy was needed in order to harmonize the hospital system with the circumstances of to-day. During the past four years the income received for the treatment of military patients occupying beds in the hospitals which otherwise would have been occupied by non-paying patients had tided many hospitals over an anxious period, but a financial crisis was bound to come with the repeated excess of hospital expenditure over the income derived from the philanthropic public. Two methods were open for consideration—curtailment of expenditure and increase of income. As to the first, he did not think that hospital administration was as economical as it might be made. Convalescing patients might, ten or fourteen days after operative treatment, be transferred to convalescent homes in the country, where recovery would be accelerated, and where the annual cost of each occupied bed would be at least one-third less than in the general hospital. No hospital worthy of the name would seek to curtail expenditure by offering a limited service, or in any way failing to make the fullest possible use of its accommodation. He predicted that in the near future the country would demand that hospital facilities should be made available for a largely increased number of people, and the National Insurance Act might soon be so amended as to provide institutional treatment for the thirteen millions of insured persons. Owing to high taxation, voluntary subscriptions were likely to diminish, and already voluntary civil hospitals were in receipt of subsidies from the State for the treatment of tuberculosis and venereal disease, for the accommodation of pensioners and military patients, and for child welfare work. But it might be asked why the State made a selection of a few diseases for the treatment of which it paid. Disease was the enemy of the State, and it was only from lack of imagination that the State, while providing fever hospitals, lunatic asylums, and venereal clinics, left other diseases—no less deadly, though their peril might be less evident—unprovided for. Given State remuneration for certain work, there was no objection to a reasonable degree of control in the form of State inspection.

The brief discussion that followed Sir Napier Burnett's address was mostly in the form of question and answer, bearing particularly on his suggestion for removing patients during convalescence. Lord KNUTSFORD said that the London Hospital had not the slightest objection to taking money from the State, nor to reasonable inspection. What the voluntary hospitals were frightened of was not State inspection, but State control. Sir ARTHUR STANLEY said that he had been nominally responsible during the war for nearly 1,600 hospitals, all of which came within the purview of Sir Napier Burnett, and he could only hope that any general scheme of State inspection would be as thorough and considerate as his. At the same time, he would deplore the cessation of charitable gifts, if only because of their moral value to the donor. Mr. WADE DEACON (Liverpool Royal Infirmary) said that he had no fear of control in any unpleasant sense. The day for the voluntary system pure and simple was over; it could not meet present requirements.

A CONGRESS of asylum attendants was recently held at Bologna. Resolutions were passed in favour of forty-eight hours of duty weekly with a continuous rest of twenty-four hours. It was further decided to ask for an increase of pay, and to establish a periodical to be the organ of the attendants.

THE first Spanish Congress of Medicine and Hygiene was held in Madrid on April 20th to 25th under the presidency of Senator Gómez Ocaña, professor of physiology. It was formally opened by King Alfonso, who, in announcing the establishment of a special faculty for South Americans, said it would cost the price of a first-class battleship, and be as valuable to the country. The work of the congress was distributed among seventeen sections.

British Medical Journal.

SATURDAY, MAY 24TH, 1919.

THE HEALTH OF THE WORKING WOMAN.

OBSERVATIONS made by the Health of Munition Workers Committee tended to show that with sufficient food, and reasonable conditions of ventilation at work and of comfort at home, women could stand harder work and longer hours of it than had been generally supposed. The result might perhaps have been foreseen if we had given more thought to the part women have taken in many countries and ages in the greatest of industries. But in this country, wanting the peasant proprietor, we had during several generations grown out of the habit of thinking of women doing a day's work in the field to the advantage of their own health and of the prosperity of their families and their country—even the milkmaid seems almost to have disappeared from among us. Nevertheless we may agree with Dr. Janet Campbell, who, in the eminently wise and sane memorandum¹ on the health of women in industry appended to the report of the War Cabinet Committee on that subject, states as her first conclusion that physiological considerations make it unlikely that women can become equal to men in physical strength, and that therefore uncontrolled competition between men and women in matters requiring considerable muscular energy is undesirable.

Dr. Campbell's inquiry necessarily covers a very wide field, and the report itself is a model of condensation, so that we can now only touch upon a few points. Dealing with the relation of industrial occupation to the decline of the birth-rate Dr. Campbell says that "on the whole it seems probable that the increasing employment of women tends to accelerate the fall in the birth-rate, especially when a high proportion of married women is employed." A discussion of preventable infantile mortality leads to the conclusion that the most important general influences tending to maintain this at a high level are poverty, bad housing and defective sanitation, lack of education of the mother, and the nature of the occupation of the parents. Frequently several of these causes occur together in the same district and in the same family: poverty and bad housing, for instance, are often inseparable, and ill-paid work and a low standard of domestic hygiene are usually, though not always, associated. The effect of occupation cannot be disputed: statistics are quoted from the report of the Registrar-General for 1911 showing, for instance, that while the mortality among infants of unskilled workers was 152.5, among those of agricultural labourers it was 96.9, and among the upper and middle class 76.4. The suggestion of these figures is certainly that overcrowding is a very important factor. This seems to be confirmed by the fact that the industry associated with the highest infantile mortality rate is mining, in which there is little employment of married women, but the housing and sanitation, it is said, "are notably inferior, and the standard of general hygiene and domestic comfort is low." The infantile mortality rate is very high amongst textile workers—148.1—and it is very high

also in the pottery district; in both industries many married women are employed for long hours away from their homes. This, it may fairly be assumed, produces its injurious effect by depriving the infant of its natural food and of the careful and constant attention, the "mothering," so necessary to its successful nurture.

The only provision of the law which affects the industrial employment of pregnant women is contained in the Factory and Workshops Act of 1901, which forbids an employer to allow a woman to be employed within four weeks after giving birth to a child. There is no administrative machinery for carrying this out, and it is operative mainly because women seldom in fact desire to return to work within that period. It will probably be agreed that the most dangerous period of pregnancy from the point of view of the child is the first three months, but here no control can be exercised as the condition can only be ascertained by the voluntary consent of the woman herself, and it is held that notification of pregnancy at any stage is for many reasons highly undesirable. Further, it is said that, bearing in mind the relatively small number of women employed in the later stages of pregnancy, any general action for the protection and welfare of the expectant mother can best be carried out through action by the local authority to provide antenatal and maternity facilities for women willing to take advantage of them.

We would particularly commend the section of Dr. Campbell's report dealing with grants in aid of maternal and infant welfare. Various people have proposed that grants in aid should be made to the mother before and after her confinement, and that a mother in receipt of such grants should in the interests of her child be prohibited from seeking employment away from her home. An estimate made by the Government actuary shows that such a scheme would involve a very large annual outlay—something between twenty-five and thirty millions if the grant were made for six months, and from six to seven millions if for six weeks. But apart from this consideration, it is pointed out that the difficulties of administration would be almost insuperable. At the present time the state aid for nursing and expectant mothers consists of the maternity benefit under the Insurance Act, and the powers given to sanitary authorities under the Maternity and Child Welfare Act, 1918, to provide assistance for mothers who require it, by affording treatment by medical practitioners or midwives, advice or help through health visitors, maternity centres or infant welfare centres, and, when necessary, food or milk for mother or child. The general conclusion under this head is that it would be undesirable to set up a new system of maternity grants overlapping the existing maternity benefit and administered by another department of the State. It is suggested that maternity benefit should be transferred to the sanitary authority, placed on a non-contributory basis, made available for all women under the income tax limit and brought up to the 60s. now paid to the employed wives of insured men. This would need fundamental modifications of the Insurance Acts, but Dr. Campbell believes that the administration of the grants would be more satisfactory, as well as more agreeable to the women concerned, and that various existing anomalies would be removed.

It is advised that further investigations by scientific methods should be undertaken into the physical effects of employment upon girls and women; that there should be a substantial reform and extension in the scope of the Factory and Workshops Acts; that a

¹ *Women in Industry*. Cmd. 135. H.M. Stationery Office. Price 1s. 6d. net.

local factory medical service should be established, founded, perhaps, through an extension of the present system of certifying factory surgeons; and that the factory medical department of the Home Office should be strengthened by the appointment of an adequate staff of women medical inspectors of factories.

Dr. Campbell's report is a valuable contribution to an important subject, and we would be the last to indulge in any captious criticism of it, but there are one or two phrases to which we think attention should be called. The first recommendation made is that, in "order to secure and maintain physical health and efficiency, no normal adult woman should be employed for less than a reasonable subsistence wage." The intention of this is sound, but the phraseology is too absolute. Another phrase to which we might take exception is to the effect that "the main object of appropriate health conditions is to secure a better and more capable human being"; this is true, but it is only a part of the truth, since happiness must be reckoned one of the main objects of the arrangement of our existence.

THE SUBURBAN GREEN.

THE Housing Bill had an easy passage through the Standing Committee, and it is thought probable that the report stage and the third reading in the House of Commons will be completed in time to send the bill to the House of Lords before the Whitsuntide recess. As the bill was only introduced on April 7th this is good going, and already there are reasons for expecting the bill to be very much more successful in operation than any of its predecessors. The procedure under the Housing of the Working Classes Acts, now twenty-eight years old, is most cumbersome and relatively few schemes were put forward; but during 1918 the persistent criticisms of the medical profession and medical journals, reinforced by experience gained at the munition works, stimulated the interest of local authorities, although down to the middle of January schemes had been submitted by only 108 authorities for the acquisition of sites, and by 52 authorities respecting the building of houses. By April 7th 693 applications with regard to schemes had been received, estimated to be capable of providing 100,000 houses. It is said that the number of houses which it is hoped may be built this year approaches 300,000.

The new Housing Bill requires every local authority to make a survey of its districts. The Local Government Board has divided England and Wales into eleven regions, with a district housing commissioner having head quarters in some convenient town. The commissioners are appointed to assist the local authorities with regard to housing schemes at all stages, to advise in the choice of the laying out of sites, and the types of houses to be erected, and at a later stage on specifications, contracts, materials, and the supply of standard articles. From this decentralization of control it is reasonably hoped that many advantages will flow. Due consideration is more likely to be given to the customs of a district and the building materials available, and authorities may be saved from mistakes which would prevent the immediate approval of their schemes by the Board. For the assistance of authorities the Board has also issued a *Manual on the Preparation of State-aided Housing Schemes*, which deals in a general way with most of the principles which should be observed, and the difficulties likely to be encountered.

In many instances the local authorities are ready to proceed on information now in their possession, as is

shown by the large number of applications received; but the *Manual* very properly insists that each should make a broad survey of the present needs and probable future development of a district or town. In most towns the healthy conditions required will be most readily obtained by taking up an area on the outskirts of a town—creating, in fact, a new set of suburbs or villages, with open spaces for recreation grounds, gardens, or allotments. This, however, must very often involve the building of new schools and great improvements in transport facilities. The position of things in London to-day is proof enough that in planning a new suburb an authority must make sure of transport to and from the industrial areas, unless factories and workshops are to be established on the outskirts alongside the new suburb, which may become practicable when electric enterprise has gone a little further. London is no doubt a special case, since it is mainly a retailing, forwarding, and administering centre, employing a very large number of clerks and shop assistants whose remuneration may be less than that of the skilled manual worker, though their standard of living is higher and their desire for the comparative quiet and freedom of the suburbs greater. The London M.P.'s went to the President of the Local Government Board on Monday to complain of the present position of transport in London and to point out that the success of any housing scheme was dependent on cheap and easy transport. Dr. Addison, who as himself a London M.P. was sympathetic, admitted that the position had not been exaggerated, and improved the occasion to explain the provisions in the Housing Bill which would give power to deal with houses in the crowded centres of the metropolis. London's present misfortunes may be of benefit both to it and other centres if they compel local authorities in other districts to give attention to this matter of transport. The evidence obtained by the Health of Munition Workers Committee proved that the journey home in a crowded railway or tram car seriously adds to the fatigue and eventually undermines the health of industrial workers.

Granted that this difficulty has been foreseen and provided for, and that a site deemed suitable has been acquired, a scheme must go through two stages which call for somewhat different qualities in the adviser. The first stage includes the selection of a site and the plan for laying it out; this calls not only for local knowledge with regard to the nature of the soil, the water supply, and means of access, but also for imagination to look into the future and form an idea of how the place will look and work when the houses are built. The plan must afford some open space, and must be so arranged that the houses have at least small gardens, and are near allotments if these can be provided. The second stage is concerned with the actual designing of the houses, and here there is room for the exercise of the ingenuity and taste of the architect.

It is recommended that not more than twelve houses should be erected to the acre in urban areas, which is at the rate of about 400 square yards to the house, and that the width of the roads on the site, including the roadway between house and house, should be at least 70 ft., since with less than this sunlight is very rapidly obscured. Sketches are given of a number of types of roads, and it is pleasant to see that the planners suggest the planting of trees along the roadway, where possible on each side, but it will be necessary to set back the houses rather further if, in the course of twenty years, light is not to be blocked by foliage.

Speaking generally, the schemes suggested in the *Manual* for laying out sites go back more or less to the idea of the village green, but of course on a very small scale. The very difficult problem of dealing with steeply sloping sites is attacked, and one laying out plan is given; but local conditions vary so much that every proposal will call for very careful consideration, backed by local knowledge. How deplorable the result may be if a site is not laid out on a coherent plan, with a view to the future, any one who has traversed the mining valleys of South Wales will not need to be told. No doubt in many of these places the problem is extremely difficult. Rows of houses, without the smallest attempt to give them any grace or beauty, have been dropped down wherever it is possible to make a road; the motives have been twofold—in the first place, economy, and in the second the desire to get the houses as near the working places as possible. When, as in a narrow valley, the site is cramped, the result may be horribly depressing. Travelling along the main road above Pontypridd is like looking down into an untidy coal cellar.

It is very interesting to be told, though we do not vouch for the calculations, that in most other sites likely to be selected the small saving in cost which can result from placing a large number of houses on the land does not compensate for the attendant disadvantages. The saving in the actual cost of each developed house by increasing the number of houses to the acre, diminishes as the number increases. The area of the plot available for each house is reduced so much more rapidly than is the cost of the plot that the cost per square yard of available ground rises steadily with the increased number of houses to the acre, because, among other reasons, the increasing proportion of each acre of land must be occupied by roads providing frontage for the additional houses. Putting it another way, it comes to this, that the prime cost of the land forms so small a part of the total expenditure on laying out a site and building the houses, making roads, and laying on water and gas or electricity, that the profit to the public authority or private speculator, by overcrowding on site, rapidly diminishes. It is satisfactory to have this financial support for the hygienic demand that the crowding of houses on a site should not be allowed to continue. There is, of course, a limit in the other direction; and, as has already been noted, the suggestion is that twelve houses to the acre is a good standard. The Board does not seem to have quite made up its mind with regard to the schemes for rural areas. We believe that for many reasons, hygienic and social, the idea of establishing new hamlets would be a mistake, and the *Manual* does go so far as to say that, generally, houses should be built near a village, or at least in groups near a village, as an alternative to forming new groups of houses sufficiently numerous to render reasonable educational and recreative facilities possible.

MEDICAL EVIDENCE AT THE COAL COMMISSION.

THE inquiry which is being conducted by the Coal Commission entered upon a new phase last week with the calling of various witnesses to deal with the questions of health and safety in mines. Dr. J. S. Haldane, F.R.S., who gave evidence on May 14th, said that although coal mining was associated with a number of special dangers, it entailed in this country less loss of life than average occupations. The death-rate from accidents was about double the average of other occupations, but the death-rate from disease, owing to the exceptionally healthy conditions, was much below the average. About sixty years

ago the general death-rate among miners was about one-third higher than in average occupations, but since then it had diminished much more rapidly than in other industries. The accident death-rate had diminished during the same period by about three-fourths. The improvement was due, he thought, partly to the better wages earned, partly to improved methods of mining, and partly to greater knowledge and skill and discipline and loyalty. Dr. Haldane gave instances of the way in which knowledge and practice with regard to safety in mining had been retarded by lack of organization. By far the most promising suggestion for preventing disastrous explosions was Sir William Garforth's stone-dusting, but the Treasury refused to provide the considerable sum of money needed to test the plan on a proper scale, and the consequence was that the present Mines Act in its complicated and burdensome provisions against explosions was very much out-of-date. He suggested the establishment of laboratories to further the acquisition of knowledge with regard to special mining problems. Dr. Haldane expressed an opinion rather unfavourable to nationalization, on the ground that so far as health and safety were concerned nationalization would have the effect of stifling initiative and the sense of individual responsibility. Asked in the course of cross-examination whether the Ministry of Health should have control of the health of the miners as well as of the general population, he replied that this would certainly be the case above ground, but underground there might be difficulty in separating health from other supervision. Another medical witness, called on the same day, was Dr. Frank Shufflebotham, Medical Adviser to the Ministry of Munitions, who explained the healthiness of miners by the fact that coal-mining was a selective industry in which the physically unfit had no place. On the other hand, continual working in the mine produced wear and tear, and arterio-sclerosis was often found in its initial stages among miners between 40 and 45 years of age. In spite of legislation, there had been practically no reduction since 1893 in the number of fatal and non-fatal accidents. Roughly speaking, 50,000 miners were injured every year in such a way as to incapacitate them from work for between one and three months. He thought there should be provision in all colliery centres for massage and electrical treatment. Dr. Shufflebotham suggested that provision should be made for reducing the temperature of hot seams; employment should be forbidden in workings where the wet-bulb thermometer reading was so high as to be injurious to health. Great Britain was the only European country in which there was no legislation to regulate the temperature. He also thought that the question of increased candle-power of the safety-lamp should be considered without delay, and that investigations should be made into the causation and prevention of such miners' diseases as beat hand, beat knee, and septic rashes set up by mine water. In the event of nationalization, the head of the Medical Department of the Ministry of Mines should be a member of the Minister's Council with free access to the Minister. Under cross-examination, Dr. Shufflebotham brought forward yet other recommendations—as, for example, that there should be an orthopaedic clinic in every colliery district; that accidents should be notified monthly or weekly and published in the local press, with a view to creating a public opinion on the subject and stimulating the mine management to greater efficiency in prevention; and that there should be a medical officer at every mine, with provision for accidents and illness.

THE FUTURE OF VOLUNTARY HOSPITALS.

As has been said repeatedly with deliberation by the President of the Local Government Board when discussing the Ministry of Health Bill, that bill does not touch treatment of patients in hospitals; but the new Ministry will, through its insurance department, have relations to treatment of insured persons, and when the Poor Law comes to

be overhauled, as promised, something will have to be done about the Poor Law infirmaries and the treatment of Poor Law patients generally. As our columns have borne witness, the subject of the future of voluntary hospitals is much in men's minds, and it is not surprising that the British Hospitals Association has recurred to the matter. It held a conference on the subject last October, when, as reported at the time, a resolution was unanimously adopted expressing the opinion that the interests of the patients and of the community as a whole, the progressive education and training of doctors and nurses, and the prosecution and advance of scientific research, would best be served and provided for by the retention of the voluntary system. With the notice calling this conference was circulated a pamphlet by Mr. Courtney Buchanan, one of the honorary secretaries, in which an attempt was made to define the kind of treatment which should be afforded by the voluntary hospitals. A meeting of the Hospitals Association (p. 647), held last week at the London Hospital, heard an address by Sir Napier Burnett, M.D., of Newcastle, who during the war was employed by the War Office in an inspectorial capacity to advise as to economies which might be effected in the expenditure of military hospitals. His recommendations are stated to have resulted in a considerable saving to the State. We are informed that some time ago, with the assistance of lay and medical friends in Northumberland and Durham, he was influential in creating a North-Eastern Hospitals Association the main object of which is stated to be to urge the Government to hold an inquiry into the present hospital accommodation throughout the country. We do not propose on the present occasion to enter into any discussion of the matter, which has many aspects, and will, we have no doubt, come up for discussion at the Annual Representative Meeting. We have very little doubt that when the Ministry of Health has got to work it will institute something like a census of hospitals, but until the facts as to distribution of the hospitals and the number of beds they provide have been officially ascertained we do not expect that the matter will be carried further by the Ministry.

A SPIROCHAETE IN YELLOW FEVER.

NOGUCHI, working in Guayaquil, has recently claimed¹ to have found a spirochaete (a leptospira) in guinea-pigs inoculated with material from cases of yellow fever. Similar bodies were seen by dark-ground illumination in the blood and liver of patients who had died of yellow fever. The spirochaete closely resembles that previously described in one type of infectious jaundice. These two diseases resemble each other clinically, and it will therefore not be surprising should they be shown to be due to similar parasites. The observations made by Noguchi were perhaps not as extensive as might be wished, and it will be well to await more confirmatory work before accepting this latest discovery. If it proves to be true it will, of course, be very important. There is also a suggestion from Japan that a seven-day fever which occurs there is due to a spirochaete. It seems possible, therefore, that before very long yellow fever and dengue may be classified as spirochaetal diseases.

THE ROCKEFELLER FOUNDATION.

THE programme of the Rockefeller Foundation for the present year provides for extensive work in public health and education, and for the completion of war work. The estimated income of the fund in 1919 is 6,750,000 dollars, and the budget comprises an expenditure of 2,367,130 dollars for public health purposes, and 3,726,504 dollars for medical education. The public health activities to be carried out during the year will consist chiefly of efforts against yellow fever, tuberculosis in France, malaria, and hookworm disease. The Yellow Fever Commission, with

General William C. Gorgas at its head, in order to define the problem accurately, visited in 1916 all countries in South America in which yellow fever had appeared in recent years. Before this it was supposed that there were many centres in South and Central America where this disease was constantly present in an endemic form, and therefore points from which the disease might be carried. It was found, however, that the particularly dangerous focal points were few. Hence results of great importance are expected to follow energetic measures, and the Commission expressed the opinion that the total eradication of yellow fever was feasible. The campaign against hookworm disease will be waged during the present year in twelve states of America, and twenty-one foreign states and countries. In addition to this public health work, which will be carried out by the Foundation's International Health Board, appropriations have been made for special studies and demonstrations to be made in mental hygiene, for the creation and maintenance of a school of hygiene and public health at Johns Hopkins University, and for the development of public health nursing. The chief work in medical education will be the development of training in modern scientific medicine in China through the Foundation's China Medical Board.

CONTROL OF VENEREAL DISEASE IN FINLAND.

FINLAND, like Norway and Denmark, abolished the compulsory regulation of prostitution several years ago. But while the supervision of prostitutes by the police was abandoned in 1907 by Finland as a whole, Helsingfors and some other Finnish towns adhered to the practice of compulsory sanitary control of prostitutes. The work of the "Sanitätsbüro"—the institution concerned with the supervision of the prostitute in Helsingfors—was much disturbed in 1917 by the revolution and strikes, and its functions on three occasions were more or less in abeyance. The incidence of venereal disease during that year—as shown by the notification of new cases—varied so much according to whether the operations of the Sanitätsbüro were partially suspended or in full swing that Dr. O. von Hellen¹ ventured to generalize therefrom as to the effect of regulation of prostitution upon the prevalence of venereal disease. In 1914 the weekly attendances at the Sanitätsbüro were between 150 and 250. Next year they were between 225 and 275, and in 1916 between 200 and 250. This average was maintained early in 1917, but in the middle of March there was a sudden fall. The attendances fell still more in April, the period from the middle of March to the beginning of May being marked by few attendances and admissions to hospital. But the fall in the notifications of gonorrhoea in women at this period (which coincided with the first phases of the revolution in Russia) was quickly followed by a considerable rise in the incidence of gonorrhoea among men. The same phenomenon occurred in July, when the military strike was taken as a signal for many prostitutes to absent themselves from the Sanitätsbüro. Ulcus molle followed the same curves as gonorrhoea; its apparent decline among women was quickly succeeded by its increase among men. The figures for new cases of syphilis did not, however, coincide with those for gonorrhoea and ulcus molle, and this, in Dr. von Hellen's opinion, was so because in syphilis the period between infection and diagnosis is more variable and often longer than in the other venereal diseases. His paper was, in effect, a plea for the compulsory medical control of prostitutes, but he admits that this system as practised in Helsingfors is capable of improvement.

R.A.M.C. MEMORIAL SERVICE.

A SERVICE will be held in St. Paul's Cathedral at 12 noon on Wednesday, June 25th, in memory of the officers and men of the Royal Army Medical Corps who have fallen in

¹ *Journal of the American Medical Association*, vol. 72, No 3, January 18th, 1919.

¹ *Finska Läkarsällskapets Handlingar*, July, 1918.

the war. Applications for tickets should be made before June 12th to Captain A. R. Wright, D.S.O., R.A.M.C., personal assistant to the Director-General, Army Medical Services, War Office, Adastral House, Victoria Embankment, E.C.4. It was at first announced that the memorial service would be held on June 12th.

Medical Notes in Parliament.

Ministry of Health Bill.

Parliamentary Under Secretaries.

ON report on the Ministry of Health Bill in the House of Lords on May 20th, Viscount Sandhurst, for the Government, recalled that in Committee the Lords had by a very large majority struck out the proposal to allow the appointment of a second Under Secretary. The Prime Minister took the view that one of the Parliamentary Under Secretaries appointed to the Ministry in the first instance should be in the House of Lords, and on the third reading an amendment would be moved to allow of the appointment of two Under Secretaries on this understanding.

Government Policy as to Consultative Councils.

Referring to the doubts expressed in Committee as to the desirability and usefulness of the proposed consultative councils, Viscount Sandhurst observed that the councils were to be constituted by Orders in Council, which were to lie on the table of each House for thirty days. The Government attached importance to the provisions of the Draft Order. They were the powers of initiation by the consultative councils and regularity as to meeting. By the power of initiative the consultative council would be empowered to report on any matters relating to health. The Minister would give a subject to the council on which to report, and upon which he would ask their advice; the council in turn could send up any report it chose to the Minister, and he should receive and consider it. Exception was taken on the score of expense because the words, "reasonable compensation for loss of remunerative time," occurred in the bill. It was feared that another vast army of salaried officials would be created to be at the beck and call of the Minister, but the result would be quite opposite. Upon these councils the Ministry would rely for outside help—acting as a spur or a critical body—to aid the Minister. The Minister would not be the creature of the councils any more than the councils would be the humble followers of the Minister or of the permanent officials. It was desired to get the aid of those who could not afford to lose salaries or wages while engaged on such public work. Gratuitous work had been well done by leisured people, but it was hoped to reach those who had not leisure but could give advice. These could not be got without compensation.

Of the four councils proposed to be set up two were of first importance. The first was the medical council, and everything that had to do with health depended on the medical profession. The Government wanted to secure the whole-hearted and regular co-operation of the profession as a whole, and some lukewarmness could be imagined if the profession had no place in the organization and machinery. It was true that there were able medical officers within the walls of the department, but more than that was wanted. The field should be so wide as to cover the whole ground. While it had been said that a more extended bureaucracy was to be set up, he thought that the opposite would occur—there would be a check upon bureaucracy. The reasons for forming an Insurance Consultative Council were different. This council would deal with matters affecting the work of the approved societies. The establishment of the new Ministry would mean that some of the Insurance Commissioners would disappear, and the Ministry would need the fresh knowledge and experience of persons administering these societies. The Council would, so far as approved societies were concerned, take the place of the Advisory Committee set up under Section 68 of the original Act. The Government was willing to accept an amendment put down by the Marquis of Salisbury that the Orders in Council in regard to consultative councils should be subject to the resolutions of both Houses of Parliament.

Later in the proceedings Viscount Sandhurst accepted an amendment moved by Lord Salisbury to secure that an Order in Council to set up a consultative council should not be effective without a definite resolution moved and carried in both Houses of Parliament.

Enforcement of the Law as to Patent Medicines.

Lord Bledisloe moved as a new clause: [(8) "The Minister shall have power to institute such proceedings as may be necessary to enforce compliance with the law relating to the sale or advertisement of any patent, secret, or proprietary remedy or appliance."]

This, Lord Bledisloe said, really embodied one of the many strong recommendations of the Select Committee on Patent Medicines which reported on the eve of the outbreak of the war. The evidence showed that the law to a large extent provided for the protection of those purchasing, on the strength of fraudulent advertisements, quack, and sometimes poisonous, drugs, and suffering in health thereby, but that no department considered it its special duty to institute prosecution.

Viscount Sandhurst said that further consideration had been given to this very important subject. But the more it was considered the more difficult and complicated it was found to be. The departments concerned were the Local Government Board, the Customs and Excise, the Privy Council, the Post Office, and the Home Office. The amendment really stated the law as it stood; it did not propose any new power. So far as the Local Government Board was concerned, the new Minister would take over powers and duties which would include the Food and Drugs Act of 1875, but proprietary medicines were specifically excluded from that Act. The Customs and Excise prosecuted for breaches of law in connexion with stamp duty—amongst others, vendors of patent medicines. But that was a Revenue matter, and must be left in the hands of the Revenue authorities. The Privy Council was indirectly concerned in connexion with the Pharmaceutical Society, which prosecuted for the illegal sale of poisons, and not the Privy Council. The Post Office prosecuted for the transmission of indecent matter through the post. That was a subject of Post Office administration, and could not, he was advised, be transferred to another department. The Home Office might receive complaints, but it was the business of the aggrieved person or of the local police to prosecute, and for these purposes the local police were not under the Home Office. Nothing more could be effected so long as the law remained unchanged, but the Public Prosecutor was, in grave cases, at the service of any department. As soon as the Minister could, he would suggest amendments in the law. The Government hoped that Lord Bledisloe would be satisfied with this assurance.

Viscount Haldane thought the reply unsatisfactory. A private person in England was looked upon to prosecute, but in Scotland the case was different. He agreed that the law would have to be put in order and extended, but there was a great deal on the statute book which ought to be enforced, and was not enforced because no one had sufficient interest to do so. If the new clause were inserted in the bill it would be the duty of an official to watch these things and take proceedings, and it would stir up interest in the Ministry of Health in getting the law amended.

The Earl of Desart (who was for some years Public Prosecutor) said that there would be no difficulty if the power of starting prosecutions were concentrated in the Ministry of Health to continue the work through the proper departments.

Lord Stuart of Wortley said that Lord Sandhurst's answer would have been good if the intention were to confer exclusive power of prosecuting on the new Minister, but it was not.

Lord Sydenham said one argument for the amendment was that the vendor of quack medicines when successful went far to defeat the object of the Health Minister. People who dosed themselves with certain patent pills (which he named) were not likely to take the remedy which would cure them, and though these pills did not do harm they did not do good. Nobody was so suitable for instituting prosecutions, if they ought to be instituted, as the Ministry of Health.

Viscount Knutsford, urging acceptance of the clause, said he had seen tragedies happen from the sale of patent medicines. It was impossible for women who had gone to a certain class of quack to take upon themselves the prosecution of the man who had injured them. The clause would give the Minister power to prosecute, and public opinion would make him do so.

The Lord Chancellor said it was by no means an advantage to duplicate the machinery for prosecution. On the contrary it wasted energy. If the Minister of Health was directed to institute prosecutions one of two things would happen. He would either want a new legal staff of counsel and solicitors to make themselves responsible for these prosecutions or the Minister would go to the existing prosecutors and the Director of Public Prosecutions to prosecute on his behalf. The ultimate judge of any prosecutions of the slightest importance must be the Attorney-General. He thought the point of substance pressed was that there was no one department responsible on matters cognate to questions of health whether or not a prosecution should take place. He suggested that before the third reading of the bill Viscount Sandhurst and himself should have some discussion with the Attorney-General and the Director of Public Prosecutions, when they might be able to make a proposal or communicate some information. Then if their lordships were not satisfied it would still be possible to propose an amendment.

On this assurance Lord Bledisloe withdrew his amendment.

Scottish Board of Health Bill in Lords.

The Scottish Board of Health Bill was taken in Committee of the House of Lords on May 15th, and all its clauses were passed.

On Clause 2, relating to the general powers and duties of the Board, Lord Forteviot (Sir J. Dewar) did not move an amendment to bring in powers "for the housing of the people in sanitary dwellings," because he had been assured that the bill made provision for this.

On Clause 4, relating to the transfer of powers and duties to and from the Board, Lord Forteviot wished to introduce a fresh subsection to establish a consultative council to advise the Board in matters affecting the health in the Highlands and Islands, and in matters affecting the administration of the Highlands and Islands (Medical Service) Fund. Lord Stanmore said that the Government was most anxious that the valuable work inaugurated by the Highlands and Islands Board should

be continued, and promised that such a consultative committee as was suggested would be set up as part of the machinery of the Act; but it appeared undesirable to make a special statutory recognition of one consultative council when other councils would be required to be set up to deal with other interests. The amendment was withdrawn.

On Clause 6 the Government accepted an amendment by Lord Haldane to provide that in the making of any staff appointments there should be no discriminations for reasons of sex between men and women.

Rabies.—Major Astor stated, in reply to Sir F. Hall on May 15th, that antirabic treatment, similar to that given at the Pasteur Institute in Paris, had been given at Plymouth since October last, and could now be given in London. It had not been necessary to send any case to Paris for treatment for the last six months. Mr. J. F. Green asked, on May 16th, whether the alleged microbe of rabies had ever been indisputably identified; how the results of the *post-mortem* examination of the carcass of an alleged mad dog differed from those of dogs suffering from any other form of acute cerebral irritation; and whether the Minister was aware that there had been more than three thousand deaths from hydrophobia in persons who had been protected against it by antirabic virus at the various Pasteur Institutes. Sir Arthur Griffith-Boscawen, in a written reply, said that the causal agent of rabies was cultivated artificially by Noguchi at the Rockefeller Institute, U.S.A., in 1912. There were present in the brain of a mad dog specific bodies (Negri bodies) which were diagnostic, and not found in the brains of a dog suffering from any other form of acute cerebral irritation. The Board had no information as to the latter part of the question, but were informed that the number of people who died after treatment was under 1 per cent. as compared with at least 16 per cent. of deaths amongst those who had been bitten by a rabid dog and had not been treated.

Noxious Gases in Mines.—Replying to Mr. Robert McLaren, on May 15th, Sir Hamar Greenwood said that about twelve persons had lost their lives when using portable breathing apparatus since it was first introduced into mines. No cases of injury to health by training had been reported. It was impossible to estimate the loss of life prevented by the use of breathing apparatus for rescue and exploring work, and for dealing with underground fires, but lives had undoubtedly been saved and the risks attaching to such work greatly diminished.

Gold Supply for Dentistry.—Mr. Bridgeman informed Mr. Cautley, on May 15th, that the dental industry was supported during 1917 and 1918 and until last month by a special issue of gold from the Bank of England. In view, however, of the fact that fine gold was now obtainable on the open market at about 103s. per ounce and was likely to become cheaper upon the conclusion of peace, the Government did not see its way to sanction a further release of gold for the industry.

Demobilization: Field Ambulances.—In a written answer to Mr. Ramsden as to the delayed demobilization of men serving with field ambulances, Captain Guest, on May 19th, said that the personnel of the administrative branches of the army services, including the R.A.M.C., were liable to temporary retention as part of the military machinery of demobilization until their services could be spared, or they could be replaced. Men so retained were being replaced as rapidly as possible by men who were not eligible for demobilization. Senior officers had been appointed to inspect registers of units with a view to ensuring that no officers or men who were eligible for demobilization were being retained without good and sufficient cause.

Vaccine Lymph.—Dr. Addison, replying to Mr. Waterson on May 19th, said that the source of the lymph at present used at the national vaccine establishment was a strain of lymph obtained some years ago which had been carried on by repeated transference in the Government laboratory.

The Superannuation of Medical Officers in Scotland.—Sir J. Harmsworth asked the Secretary for Scotland on May 19th when he proposed to place Scottish parochial medical officers on the same basis as English and Irish parochial medical officers in the matter of superannuation. Mr. Munro, in a written reply, said: Any action such as proposed in the question would require legislation. I have undertaken to consider the expediency of an inquiry into the general question of the superannuation of local officials in Scotland, and I have been in communication with local authorities' associations on the subject.

Pensions and the Blind.—Sir Arthur Pearson was the principal witness before the House of Commons Select Committee on Bailors' and Soldiers' Pensions at the sitting on May 20th. He protested against the regulation under which blind officers are debarred from receiving the special blind grant unless blindness had been caused while in action. Non-commissioned officers and men were better treated. He submitted that it was unfair that an officer blinded in any other field of duty should receive only £175 retired pay when the special grant would bring up the amount to £300.

England and Wales.

THE DIRECTION OF THE LONDON AMBULANCE SERVICE.
The London Ambulance Service is likely, if a report of the Fire Brigade Committee of the London County Council is adopted, no longer to have a medical man as its officer in charge. Dr. T. C. Mugliston, the present director of the service, is retiring shortly, and the recommendation is that a successor should be appointed who does not possess medical qualifications—in fact, an ordinary administrative official—and that any medical advice needed should be obtained by consultations with the Council's medical officer. No reason is given for this departure from a policy which has been followed ever since the setting up of the service. The first officer was Lieut.-Colonel H. J. Barnes, R.A.M.C., who afterwards became medical inspector of camps for German prisoners. Dr. Mugliston was appointed to succeed him in November, 1915. The number of calls with which the L.C.C. ambulance service has had to deal has increased progressively from 2,405 in the first year (1915) to 15,911 in 1918, although the service has continued to be worked from only six stations, shortly to be increased to ten, which will still be inadequate. In a service in which the chief essential is first aid it seems very desirable that the staff should have at its head a man of medical qualifications as well as administrative ability; moreover, in the close relations which are necessary between the ambulance service and the medical staffs of hospitals, a non-medical director would be at a continual disadvantage. There is no question as to the efficiency of the service under its medical direction. The late Chief Officer of the Fire Brigade, Lieut.-Commander Sladen, before his recent retirement gave expression to his appreciation of the way in which the service had met the supreme test of air raid casualties. The projected appointment of a clerk to succeed a medical man—it has appeared on the agenda of the Fire Brigade Committee, but not yet on that of the L.C.C., which is the deciding authority—is a retrograde step, all the less excusable because, whatever may have been the case before the war, there are now large numbers of medical men available with the requisite administrative experience of ambulance work.

A REUNION DINNER.

The medical men of South Shields who have been serving in the R.A.M.C. were entertained to a "reunion" medical dinner on May 15th by their professional colleagues of the borough. The dinner was held under the presidency of Dr. D. Morley Mathieson, chairman of the South Shields Division of the British Medical Association, and M.O.H. for the borough. Dr. W. Gowans, in proposing the toast of the guests, said that doctors from the area had served in the navy and with the army in every theatre of war; he welcomed their home-coming in the name of his colleagues. Dr. J. Macdonald and Dr. J. M. Nicoll, who replied, expressed the gratitude of those who had been on service for the way in which their interests had been safeguarded during their absence; and Dr. W. Hamilton also replied in warm terms. The chairman, in responding to the toast of his health, referred to the work done by Dr. T. O'Callaghan and Dr. G. R. Harland in arranging with him for the reunion. He hoped it would be the first of a series of many meetings at which members of the local profession would foregather socially. The dinner was in every way a great success, and formed a fitting welcome to those who have returned from service to civilian practice. Dr. Morley Mathieson, with whom, we believe, the idea originated, designed the menu card, which gave a list of guests and hosts, with a number of apt and unhackneyed quotations.

A COUNTY DENTAL SCHEME.

We are indebted to Major Burdon Evans (Llandinam, Montgomery) for the opportunity of reading a memorandum on a scheme for the dental treatment of school children which has been established in that county. It took origin from an offer, in April, 1913, by Major David Davies, M.P., the founder of the Welsh memorial scheme for tuberculosis, to guarantee £200 a year for three years towards the salary of a school dentist, and to contribute £50 towards a dental caravan, on condition that the

balance required to equip the caravan should be found, and that the education authorities should pay the expenses of the dentist and of the caravan, and should appoint a second dentist. The idea of the caravan was eventually abandoned, as a more convenient plan was found. When the scheme was being started little or no information could be obtained as to the experience of other authorities, since most schemes for dental treatment apply to large towns. Montgomery is a rural county, where the largest town has a population of not more than 6,000. The scheme was started at the end of 1913 at Newtown, the most central town in the county, where a room was fitted up as a dental surgery, with hydraulic pump chair, dental engine, and all necessary apparatus. In six other towns rooms were engaged, and the dentist, when he visited them, took with him a portable chair and other necessary equipment. The dentist had the assistance of a full time trained nurse. The dentist was also able to visit several villages near the towns.

At the beginning of 1915 a rural dentist was appointed, and it was found that cases containing a folding chair, folding ambulance, and other necessities for dental surgery could be more expeditiously and efficiently carried in a motor car than in a caravan. The dentist established himself in a convenient centre, went to each school in the vicinity, taking with him whenever possible the village nurse. He did his dental work in a room in the school or in a house near it. The war caused many changes, but a single dentist for the county was appointed early this year. He works under the supervision of the county medical officer, and keeps records on the card index system. A beginning was made with children from 6 to 8 years of age in the elementary schools, although the dentist was authorized to treat others if he considered it necessary, and the school medical officer, if he detected very bad teeth in a child of any age, reported the case to the school dentist. The age limit is raised each year, so that a child having once received attention is attended to each year until it leaves school. Dental work is now being extended to children in the intermediate schools.

Before visiting a school the dentist sends the head teacher an intimation of his approaching visit; his first visit is for inspection, and he makes out a list of the children requiring treatment; he attends to give it about three weeks later. He sends notices for the head teacher to hand to the children to take home to their parents, asking consent to treatment. Parents are invited to accompany their children to the clinic when possible. A charge of 6d. is made for each child treated. If the parents refuse consent a visit from the dentist or nurse has sometimes induced them to change their minds. The general experience is that parents will agree to treatment when children suffer actual pain, but many of them need conversion when it is a question of preventing future trouble. Free advice given to parents on the subject of their children's teeth is considered an important feature of the scheme, and on fair days the dentist sees parents without appointment. The dentist is supplied with tooth-brushes, which are sold at the nominal price of 2d., and short lectures are given to the children in the schools.

Full statistics are, for the reasons mentioned, not yet available, but in the calendar year 1918 seventy-two schools were visited and 1,398 children treated. The number of temporary teeth extracted was 2,767, and of permanent teeth 668; temporary teeth filled numbered 206, and permanent teeth 231. As time goes on it is hoped greatly to improve on the proportion of permanent teeth extracted, but a high rate was to be expected at the beginning of such a scheme.

Scotland.

NON-PULMONARY TUBERCULOSIS.

THE medical report presented to the annual meeting of the Royal Edinburgh Hospital for Sick Children contained the following paragraph:

Tuberculosis is, unfortunately, one of the principal diseases with which this hospital has to deal. It accounts for a very large part of the surgical *clientèle*, and is also very common in the medical wards. Scotland enjoys the unenviable distinction of having more abdominal tuberculosis than any other civilized country—twice as much at least as England generally, and

more than ten times as much as Europe and North America. It accounts for one-half of the medical tuberculosis admissions. Analysis of the figures for one of the wards during 1918 shows that more time, expressed as days of residence in hospital, was taken up by abdominal tuberculosis cases than by any other disease—1,026 days. This is very nearly equivalent to three cots out of the twenty-five being permanently occupied by such cases. In view of the other demands on our accommodation it is impossible to do more for these children; yet, when it is stated that at least six months' treatment is needed for the arrest or cure of abdominal tuberculosis, and that the average stay in hospital of these cases was only twenty-three days, it must be admitted that very little is really accomplished with the means at our disposal.

The annual report stated that the total number of children admitted to the hospital during 1918 was 2,174, and the average daily number of patients in the hospital 108: the average duration of residence was fourteen days. In the out-patient department 3,068 new medical cases and 3,727 new surgical cases were dealt with. The number of operations performed in the surgical theatre in the hospital was 844, while in the out-patient department 2,122 minor surgical operations were performed. The ordinary revenue had increased, but in spite of this there was a deficit (including the cost of the convalescent home) on the year's working of over £3,000, owing, in great measure, to the rise in the cost of hospital supplies and in part to the increase in salaries and wages which the directors had felt it their duty to make. Sir John R. Findlay, K.B.E., who was in the chair, said that just before the war it had been intended to bring the claims of tuberculous children before the public in Edinburgh; the Board of Management now had the matter under serious consideration.

HEALTH STATISTICS OF EDINBURGH FOR 1918.

The health statistics of Edinburgh for the past year have not yet been published in full, and the medical officer of health does not contemplate issuing a report of pre-war size (that will come next year); but certain figures are available for comparison, and some lessons may be learned from them. The birth-rate, for instance—that vital factor in the welfare of cities and of countries—fell to 14.3 per 1,000 persons living; this was a little less than the rate for 1917 (14.7) and very much below the rate for 1916 (17.4) and for 1914 (19.8). Some hygienists expect that the return of the men from active military service will cause an ascent in the birth rate. The returns of this year and for 1920 must be awaited before the probability of the fulfilment of this forecast can be estimated, but it savours of optimism. Meanwhile, the total annual number (corrected) of births in Edinburgh was considerably under 5,000, being 4,830 in fact, and since the death-rate for 1918 was 15.2 (actually higher than the birth-rate), the interesting calculation regarding the number of years necessary to double the population ceases to have any real interest, and in its place the health officials will soon be working out the length of time which must elapse before it is halved.

A brighter side of the statistical picture is seen in the infantile mortality rate. This was 94 per 1,000 infants born alive as compared with 123 for 1917, with 100 for 1916, and with 132 for 1915. Since the city scheme for mother and child welfare came into action in May, 1917, those who have been active in its establishment and maintenance may be justified in ascribing to it some of the credit for this welcome improvement. The improvement is to be regarded as real, for the year 1918 was marked by the incidence of two severe epidemics of influenza which did not spare the young children. The neonatal mortality rate, also, was lower than it has been. It was 40.3 per 1,000 infants born alive. This compares well with 41.5 in 1917, with 44.8 in 1916, with 43.9 in 1915, and with 43.7 in 1914. In the pre-war years 1911, 1912, and 1913, the neonatal rate was 42.2, 44.9, and 40.6 respectively. The town scheme for child welfare and for the medical supervision of expectant mothers may justly claim a share of responsibility for the welcome fall in the neonatal mortality. There is a darker aspect of the statistics in the study of the effect of illegitimacy. Whilst the infantile mortality was 94 per 1,000 babies born alive including legitimate and illegitimate, an analysis of the figures showed that the rate for the legitimate children alone worked out at 80 per 1,000 and that for the illegitimates at 198 per 1,000. The same wide and ominous difference was found when the neonatal death-rate was examined: the rate over all was 40.3 per 1,000 babies born alive; for the legitimates alone it was

35.8, and for the illegitimate alone 74.3. Of course it may be urged that other factors than illegitimacy are in action, and that may be so; but no one can doubt that the consequences of illegitimacy have been at work in the production of so marked an excess of deaths amongst the illegitimately born offspring of Edinburgh. Another thing has to be remembered—namely, the absence of the stillbirths from the birth lists and the death lists. There is no registration of these yet, but a fairly accurate system of compulsory notification showed that 238 occurred in 1918, out of a total notification list of 5,404 births (uncorrected).

Ireland.

POOR LAW MEDICAL OFFICERS' SALARIES.

IN pursuance of notice, Mr. Ervine moved, at the last meeting of the Ballymena guardians, to rescind the resolution passed by the guardians at their meeting on March 1st adopting a new graded scale of salaries for the medical officers, and that instead the scale submitted to the committee at their meeting on May 12th by Dr. Stewart, on behalf of the medical officers, setting out £140 as a minimal salary and £200 as a maximal, as originally recommended by the committee, be adopted. Dr. Stewart, medical officer, Portglenone dispensary district, submitted a scale with a maximal salary of £200, to be attained at the end of twenty years' service by annual increments of £4. It was decided to adjourn the matter for a month.

The New Ross (co. Wexford) board of guardians, at a recent meeting, amended the scale of salaries for their medical officers. The new scale commences with a minimal salary of £200, with annual increments of £5 until a maximal salary of £250 is reached. The guardians fixed the maximal salary for the medical officer of the workhouse at £200. Dr. Hennessy, Irish Medical Secretary, British Medical Association, addressed the guardians on behalf of the Poor Law medical officers.

With regard to the filling of vacancies in the Irish Poor Law medical service the following editorial comment appeared in a recent issue of the *Irish Independent*:

Young doctors are showing no great eagerness, to put it mildly, in seeking to fill dispensary vacancies. Within recent weeks no one can fail to have been struck with the unusual number of advertisements which have appeared in the press inviting applications from medical men to look after the health of the poor in the various unions. In many instances the guardians have met to make the appointment only to find that there were no applications before them. This is not to be wondered at, considering the miserable salaries offered in many unions to men expensively trained at universities or medical colleges, and expected at every hour of the day or night to engage in vital and exacting work often entailing serious risk to their own health. Whatever might be said for the salaries current before the war, there is absolutely no doubt that those offered nowadays are in numerous instances far below that of the average mechanic, and totally inadequate to keep a medical man in decent comfort. Some doctors, by the resolute stand they adopted, have succeeded in obtaining higher remuneration, and it is to be hoped that guardians, when soliciting applications in future, will offer salaries worthy of the acceptance of the members of a noble profession.

Correspondence.

MEDICAL ASSESSMENT FOR PENSIONS.

SIR,—For the past eighteen months I have been a member of the Board for review of pensions awarded to members of the Australian Imperial Force who have been discharged in the United Kingdom or who have returned thereto from Australia.

At present the number may be considered insignificant compared with those dealt with by imperial authorities; but the very material increase of late is indicative of the task which has to be approached. It becomes very apparent that medical assessment for pensions is an important and special subject, and requires much thought and knowledge. The awards made are so varied that one seeks an explanation other than that furnished by the varying individual peculiarities and knowledge of the examiner.

It is not pleasant to read that in Sir J. Albert Flynn's opinion "investigation went to show that either the

Revising Board was unnecessary and made mistakes, or the ordinary medical boards were not competent"; "that ordinary boards were too hard on the men"; "the ordinary boards were often very perfunctory" (BRITISH MEDICAL JOURNAL, May 10th, 1919, p. 590). From my experience I fear the strictures are in measure applicable, and there are grounds for attempting alteration to prevent them.

For some time it has been forced on me that the machinery and methods at present applied to medical assessment are, in no little measure, inadequate. It is very certainly necessary that early opportunity should be taken to consider and revise them. There are now many men who have had considerable experience of the difficulties attendant, and in my opinion it would be well indeed if a meeting of representative medical officers, Imperial and Colonial, could be convened, with the view of obtaining their opinions, and the submission of a report on what may now be considered the best scheme to avoid incongruity and abuse.

That there is much ground for thought and argument is obvious, but certain rules could be formulated, a better procedure adopted, a more precise definition of the duties, more comprehensive schedules, and rulings on past cases. These alone would help, but there are many more points to consider that could be submitted.

Perhaps it might be better that the Select Committee on Soldiers' and Sailors' Pensions, now sitting at the House of Commons, should call representative medical assessors to give evidence. I am sure that valuable information will be forthcoming.—I am, etc.,

B. J. NEWMARCH,
Colonel A.A.M.C.

London, S.W.1., May 17th.

SWIMMING IN THE TREATMENT OF PARALYSIS.

SIR,—Your note (May 17th) and the interesting memorandum by Colonel Farquhar Buzzard suggest a mode of treatment which I have often advocated, especially in cases of ataxia, since observing a case of Friedreich's disease many years ago. The patient was a youth aged about 18. His ataxia was so severe that he was unable to stand without support. He told me that he used to be a good swimmer, and thought that he might still be able to swim although unable to walk. I said, "Come along now to my swimming club." He agreed, and we drove to the club. The attendant and I helped him to walk from the dressing-room to the bath. He swam across the shallow end of the bath, using the breast stroke, quite easily and in a normal manner; no defect could be detected in the movements of his limbs. In 1903 I mentioned the case to Hughlings Jackson, who wrote in reply, "What you tell me about swimming in ataxia is very interesting. I wonder how a pseudo-hypertrophic would get on in the water."—I am, etc.,

JUDSON S. BURY,
Major R.A.M.C.(T.).

Manchester, May 20th.

SIR,—I was interested to read Colonel Farquhar Buzzard's memorandum (May 17th, p. 610) because, since February, 1917, we have been carrying on muscle re-education with the limb (arm or leg) floating in water in a swimming bath as one of our methods. Only to-day have I been told that the idea and practice are new.

The advantages of this form of treatment have turned out in practice to be quite what Colonel Buzzard expects, and I would add my testimony in support of his contention that a swimming bath is an essential in the treatment of such cases. We started with an experimental pool which was soon replaced by two pools, warm and cold, 36 ft. long and 20 ft. broad, lined with white tiles. The warm pool contains water at a temperature of from 90° to 100° F., and has a uniform depth of 3 ft. 6 in. This water is kept in turbulent motion by great volumes of compressed air forced into it from orifices in long pipes lying at the sides. Lounge seats along two sides give accommodation for patients sitting immersed to the neck, or resting after exercise in the seething water. The cold or swimming pool has a depth of 7 ft., gradually diminishing to 3 ft. 6 in. This pool supplements the effects of the hot pool as progress is made. Helpless or hemiplegic cases are run down into the pools on wheeled chairs or stretchers along the sloping waterways leading into the two pools. Such patients are accompanied in the water by an attendant, himself a discharged soldier who has undergone the treatment.

Further, at this hospital we are fortunate in having special equipment for following up and improving these first steps or strokes which, in the swimming bath, the patient has been induced to make. Possibly our results are therefore even better than one could have hoped for under a less intensive programme of treatments.—I am, etc.,

JAMES R. KERR, Ch.M.Glas.

The Pilkington Special Hospital,
St. Helens, Lancs, May 21st.

DISAPPOINTMENTS AFTER GASTRO- ENTEROSTOMY.

SIR,—In the interesting correspondence aroused by Dr. Hutchison's paper on this subject one potent cause of disappointment has been passed over too lightly.

While it is true that secondary gastro-jejunal ulceration is probably more frequent than has hitherto been supposed, this condition only accounts for a proportion of the disappointing results. Others are due to the performance of the operation in unsuitable cases.

At one time gastro-enterostomy was regarded as a panacea for all forms of dyspepsia, and, although it is now well recognized that in the so-called atonic dyspepsia, which is due to gastroparesis, the operation is not only unnecessary but harmful, it is not sufficiently realized that it is largely a mechanical operation, and gives its best results in mechanical deformity—namely, pyloric stenosis. As a means of curing ulcers of the lesser curvature and other ulcers of the body of the stomach this operation fails. In such cases more radical treatment, such as excision of the ulcer or partial gastrectomy, should be adopted. In cases of chronic duodenal ulcer without stenosis failure is not uncommon, unless the ulcer is excised at the same time, or the pylorus excluded.

The point I wish to emphasize is that in dealing with chronic ulceration of the stomach or duodenum the surgeon should act according to the conditions which he finds, and not be content with performing gastro-enterostomy in all cases, irrespective of the situation of the ulcer.—I am, etc.,

Manchester, May 19th.

GARNETT WRIGHT.

A WHITE QUEENSLAND.

SIR,—A correspondence in *The Times* on "Emigration and Disease: Health in Tropical Australia" is of sufficient importance to demand further consideration in a more scientific medium. It was originated by letters from the High Commissioner for Australia and the Agent-General for Queensland commenting on a news item, and a subsequent correspondent, Dr. Leiper, wrote:

Your Sydney correspondent has sullied their vision of a pure and white Australian continent by making public through *The Times* a statement by Dr. Lambert to the effect that 23 per cent. of the population of the coast of Queensland is infected by hookworm, and that, if its ravages are not combated, in a few generations it would mean a race of comparative imbeciles and physical degenerates.

It is to Dr. Leiper's letter (April 29th) that I specially wish to refer, and it is possible, I think, by brief quotations to state the special points fairly, independent of the context. Dr. Leiper initiates his comments by premising that:

It is by actively combating disease, not by ignoring it, that the future welfare of a new country can be best secured,

and proceeds to show, from published records, that the attitude of both correspondents, in refusing to accept the statement, is demonstrably incorrect. He concludes by emphasizing the special necessity in the tropics for complete co-ordination between scientific knowledge of disease prevention and personal and public hygiene, and by castigating the presumed attempt to evade the consequence of a gross neglect of such obligations.

Dr. Leiper's letter, though I think it overstates the case, without question does notably good service. Unfortunately, however, in his indignation at what he holds to be an attempt to evade scientific issues, Dr. Leiper has, I think, fallen into an error not dissimilar to that which he castigates; and in dealing with a wider problem than that actually under discussion, does so in a way which, by prejudging the issue in accordance with already formed convictions, tends to produce a misleading impression, and, I believe, to misdirect opinion on an Australian national

problem the import of which, from the Australian point of view, Dr. Leiper does not, I think, fully appreciate. I quote Dr. Leiper's concluding paragraph:

A London Scot once said that his was a fine country to live out of, and the same remark will occur to any one who reads the illuminating study of *The Conditions of Life in Tropical Australia*, published by Dr. Nicoll, recently on the staff of the Australian Institute of Tropical Medicine. If Australia proposes to attempt to colonize the tropical north from her own States, it is her own affair. But if the appeal is, once more, direct to the homeland, one may be allowed to express the doubt if Britain can spare her most virile and enterprising sons for a political experiment which is foredoomed (the italics are mine).

As a native of and practitioner in Queensland, I must protest against consideration of the question as merely a "political experiment," and am convinced that in condemning it as "foredoomed" Dr. Leiper is speaking without full consideration of the subject, and that sufficient evidence does not exist for such a definite and far-reaching statement.

It is regrettable that the general question comprehended in the term "white Australia" (which I shall not attempt to define, but which is sufficiently well understood) was introduced into the controversy in a way which made it appear an essential aspect of the special subject under discussion—namely, the prevalence of ankylostomiasis in certain parts of the coastal districts of Northern Queensland; for surely, however important ankylostomiasis may be in connexion with the health of a community in the tropics, it is not necessarily bound up with the question of tropical disease, nor can its prevalence form an argument in favour of the unsuitability of a locality for a white race.

If the subject of ankylostomiasis is germane to the problem of a "white Australia," the arguments deducible would be entirely against the pronouncement which Dr. Leiper makes in connexion with the latter. One of the fundamental difficulties in the solution of the problem of populating tropical Australia by the introduction of a lower race is that doing so would make the control of tropical disease an infinitely more difficult problem than if the country were populated entirely or predominately by a civilized people of European habits and social organization. Surely, one of the chief difficulties in combating tropical disease (apart from the effect of tropical climate *per se*) is the presence of a large hygienically uncivilized population who are with difficulty supervised as regards disease and sanitation, and who thus form a permanent pool of carriers which effectually checks attempts to control, much less to stamp out or prevent the introduction of the various forms of tropical disease.

Tropical Australia is unique among tropical countries in having, instead of a numerous and prolific gregarious native population, a sparse and rapidly decreasing one. It would surely be a mistake to introduce the former conditions unless and until it be found impossible to populate the country otherwise.

I do not, in this too long letter, propose, nor am I qualified to enter into the various problems, scientific and other, arising in relation with the settlement of Northern Australia by a race not differing inherently in racial origin, characteristics, and traditions from that from which the Australians have sprung; nor yet into the alternative possibilities in connexion with the populating of tropical Australia from among the various coloured races. But I ask forbearance for a few points which appear to bear out my contention that the scientific issue is not yet decided.

Death-rate and Birth-rate

of Queensland (most Northern State), and Victoria (most Southern State), 1917; and of England and Wales, 1914.

	Death-rate.	Birth-rate.
Queensland	9.64	29.09
Victoria	10.36	23.50
England and Wales ...	13.6	23.6

During 1914-15 I was regimental medical officer to the 9th (Queensland) Battalion, which formed part of the original Anzac Division. I examined every recruit, and it was my daily task to make myself intimately acquainted

with the physique and stamina of the men. In no respect, that I could see, did the men from Northern Queensland fall short of the others.

I have during the last four and a half years seen the best (and others) of the British troops, and also of other dominions and other nations. I do not believe that in any respect is our Queensland standard inferior to any, in vitality and stamina, while the fact that the proportion of killed in the Australian army is higher than in any other is sufficient to prove the absence of any marked psychic degeneration.

The proportion of men found unfit for any form of military service is higher in Great Britain than in any other nation taking part in the war (*vide* Mr. Lloyd George's election manifesto). I cannot give figures for the rate in Queensland, but it appears to me that in non-tropical countries there may be social and economic causes of degeneracy (overcrowding, etc.) which to some extent offset the advantages over countries with climatic disabilities.

White Australia, a political experiment. It may not be without interest in this connexion to note that for the triennial Interstate Medical Congress of Australasia, which was to have been held in Brisbane in 1915, the subject chosen for general discussion (subject to ratification by the visiting states) by the medical profession of Queensland, was the possibility of the permanent settlement of Northern Australia by a healthy "white" race. It was agreed that the problem was primarily medical, and in this respect was still an open as it was a pressing one. It was intended that if possible there should be present at the congress one or more men of international repute and experience in tropical medicine, so that the discussion should be authoritative and not parochial.

Without doubt, a "white Australia" would have to be paid for, for a time at all events, by special legislation over those parts of the continent more favourably situated as regards climatic conditions. Much, as Dr. Leiper points out, has to be ensured regardless of some possible economic loss; I may instance opportunity for periodical change, especially for the young and women; high rate of remuneration, allowing the utilization of all the resources of civilization in counteracting the disadvantages of climate; a social system making these advantages available for all ranks; and special provision for a high standard of public health government, and for education of the people in methods of life most suitable to the conditions. "White Australia," even if found a scientific possibility, would have to be paid for; but surely that is not the primary question.

Dr. Leiper's experience and eminent scientific position make it difficult for one with incomparably less experience and special knowledge to attempt to traverse his attitude. But it is possible that the absence of strong feeling on the subject may have led him to acquiesce too readily in the insolubility on "white" lines of a tropical problem (which presents special features and for which there exists no exact parallel), whereas the feelings of the "native born" demand nothing short of complete proof before agreeing to so undesirable an alternative.

For is not the ideal of an Australia peopled not by a congeries of entirely dissimilar types, but by a race homogeneous, and not lower in civilization, habit, tradition, and aspirations, than that from which the empire is founded, right and fitting, and greatly to be desired? It is in considering the alternatives that the desirability of a white Australia becomes evident. It is from countries other than the home of the empire that the "white Australia" idea has had most sympathetic appreciation—more even, in some respects, than in Australia herself. Americans, South Africans, and Canadians appreciate fully the desirability of a country being free from the admixture of people which cannot be blended into a homogeneous nation, even if such types be of a civilization not in any respect "inferior" to our own. It is on this basis that the *modus vivendi* between Australia, China, and Japan must evolve. But the example of the negro problem in America must urgently affect the question of the free admission of a "lower" type.

Active service for some years has put me out of touch with professional opinion in Australia, and with the results of the special work done at the Institute of Tropical Medicine at Townsville (Queensland). I am not acquainted

with Dr. Nicoll's book, on which Dr. Leiper appears to some extent to have based his views, but I am of course aware that a not inconsiderable portion of the profession in Australia, especially in the south, is opposed to the ideal, some on scientific, more, I think, on political and economic grounds.

I submit that the question is an open one, is of imperial concern, and that it calls for serious consideration and assistance in its solution from those in the medical profession within the empire qualified to give such; among them Dr. Leiper holds a notable place. The first essential, it seems to me, is to stamp it as, primarily, a scientific, and not a political, problem.—I am, etc.,

A. G. BUTLER, M.B., B.Ch.Camb.,

France, May 8th.

Colonel A.A.M.C.

A TUBERCULOSIS SERVICE.

SIR,—Certain recent comments in the medical press suggest some misunderstanding regarding the scheme for a tuberculosis service unanimously adopted by the London Conference of sixty representative tuberculosis officers. As these comments might possibly injure the Tuberculosis Society, I beg leave to define the position as it appears to me.

We never suggested either that a separate tuberculosis service, divorced from the existing public health service, should be created, or that medical officers of health should be excluded from dealing with the tuberculosis problem as regards housing, illegal overcrowding, or infected food. What the Tuberculosis Society has proposed and would welcome is that an *ad hoc* clinical tuberculosis service, with district commissioners, should be established within the general public health service.

Our view, moreover, is that in the public interest the chief clinical tuberculosis officer should be (1) the administrative officer in regard to the clinical prevention of tuberculosis and all measures for diagnosis and treatment; and (2) the immediate expert adviser on these matters to his public health committee or tuberculosis subcommittee, to whom he should have direct access.

As a clinical administrator he should receive copies of all notifications of tuberculosis direct from the medical officer of health, and of all certificates of deaths from tuberculosis direct from the registrars in his area.

At present, when the tuberculosis officer, nurse, or visitor finds conditions of housing or sanitation which seem to require the direct intervention of the sanitary authority, the facts are immediately reported by the tuberculosis officer to the medical officer of health. Nobody has ever advised any change in this procedure. We have never suggested that the tuberculosis officer should himself rectify these conditions, or that he should undertake disinfection, all these things being obviously within the province of the medical officer of health.

That being so, the point of the following paragraph on discharged tuberculous soldiers in your issue of May 3rd seems to be somewhat obscure:

The Society of Medical Officers of Health recently pointed out to the Local Government Board that its circular of December 4th, 1918, in regard to the home visiting and after-care of discharged soldiers and sailors suffering from tuberculosis might be interpreted as making the tuberculosis officer directly responsible for measures in this connexion. In reply, the Board stated that the circular "was not intended to suggest in any way that the tuberculosis officer should, except as far as his clinical duties are concerned, act otherwise than under the direction of the medical officer of health."

All the italics are mine, and focus attention on the obscurity of the whole paragraph. Does any one suggest that home visiting and after-care of tuberculous sailors and soldiers are not essentially clinical duties for which the tuberculosis officer is therefore directly responsible? If he or his assistants should find insanitary conditions, the facts would be at once reported, as heretofore, to the medical officer of health. The alternative is that the home of the unfortunate tuberculous pensioner is to be visited by two lots of officials, and it is difficult to understand why any medical officer of health should wish to add to his responsibilities by undertaking the direct supervision of these measures.—I am, etc.,

HALLIDAY FOTHERLAND,

President of the Tuberculosis Society.

London, May 20th.

INSURANCE: A FRESH START?

SIR.—I have just completed the enormous task of reading the report of the Insurance Acts Committee on the Revision of the Conditions of Service, etc. My own life on that committee was so ephemeral that I can as a mere spectator express my admiration of the ingenuity and subtlety displayed in the treatment of a most complex subject. But the thought arises whether, after all, this report, with its concrete backing of many months' solid hard work, is not an attempt at keeping alive a service that is wrong, in principle, from its very foundations.

The basis of any service, whether medical or otherwise, must be, if that service is to be efficient, adequate return for the work done. Here we have a service which consists of isolated units of work, either complete in themselves or as part of a small series; essentially indefinite in incidence and duration; governed by no known law. And, on the other hand, we have a fixed and invariable sum of money, based on the total number of persons liable to treatment. However carefully that sum is determined it must inevitably be too small or too great, varying both as to time and place.

Surely the only logical method of remuneration is for the person who performs the service to receive a reasonable fee or reward for each act of service. Two objections are promptly raised to such a procedure: (1) That the Government must know the extent of its liability; (2) that payment for every attendance would lead to exploitation by unscrupulous practitioners.

As regards (1), it is surely no part of the duty of citizenship that one section of the community should relieve the whole state of a liability which is a function of government. It would have been as reasonable to ask an engineering firm during the late war to provide, for a fixed sum, as many 18-pounder shells as shall be required by a battery of F.A. in six months. It is at last recognized that it is in the interests of the State that its citizen units should receive the best medical and surgical attention that can possibly be afforded, and that best will obviously be obtained only by appropriate payment. As to objection (2), there will certainly be a number of men who, if paid for work done, will attend unnecessarily with the single object of increasing their incomes. But it is quite possible to set up machinery that will deal competently with such persons, and the great bulk of the medical profession would lend its support to this end.

Cannot we now say to the Government that we have tried this service where the sickness liability is underwritten by the individual practitioner, and that we will have no more of it? I do not suppose any one imagines that we are going on with the old capitation rate now with a 10 or 12 per cent. advance. Why not, then, start afresh with a service where the insured would be able to get the best possible treatment under all circumstances? It is worth it to the State, and the cost would be nothing like as great as many imagine. And an additional asset of no mean value would be the psychological effect on the doctor, who would realize that his income was strictly proportionate to his work—a most welcome tonic after a fatiguing day.—I am, etc.,

Salford, May 18th.

STANLEY HODGSON.

WEBSTER'S TEST FOR T.N.T. DERIVATIVES IN URINE.

SIR,—Kindly allow me to correct an error in the Lettsoman lectures on toxic jaundice. It is there stated (p. 608) that Webster's test was discovered by J. Webster, F.I.C. This important test was, however, discovered by T. A. Webster, A.I.C., when collaborating with me in a research into the causation and prevention of T.N.T. poisoning, and it conduced materially to the successful issue of that inquiry. It is all the more necessary to make this correction because Mr. J. Webster, F.I.C., has collaborated with Dr. Willcox in similar investigations quoted at the end of the lecture, so that the slip might produce prolonged confusion.

May I also be allowed to draw the attention of Dr. Willcox to Special Report No. 11 of the Medical Research Committee on "The Causation and Prevention of Trinitro-toluene (T.N.T.) Poisoning," as it appears to have escaped his attention, since he only quotes my work from an incomplete summary of a speech made at a meeting? He will there find a considerable discussion of the relationship of the pathology of the blood changes, liver atrophy,

and aplastic anaemia. The enormous decrease in red blood corpuscles, not associated with other changes such as are seen in pernicious anaemia, was first detected by myself and Dr. G. A. Wyon in a case seen at Woolwich Arsenal, and the condition was afterwards diagnosed as aplastic anaemia by Dr. Hubert M. Turnbull, from pathological examination of the organs after a fatal termination of the case. This history is all recorded on p. 21 of the Medical Research Committee Special Report referred to above.—I am, etc.,

BENJAMIN MOORE.

Lister Institute, Chelsea Gardens, S.W.1.
May 20th.

Obituary.

CHARLES GORING, B.Sc., M.D.LOND.,
P.M.O. H.M. Prison, Manchester.

We regret to record the death of Dr. Charles Goring, Principal Medical Officer of H.M. Prison, Manchester. He entered University College, London, with an entrance scholarship; he graduated B.Sc.Lond. in 1895, and held the John Stuart Mill scholarship in philosophy. He won an entrance medical scholarship to University College Medical School, took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1896, graduated M.B. in 1899, and took the M.D. in 1903.

He had a brilliant career at the College and Hospital, making many friends through his enthusiasm and originality of mind. He was demonstrator of histology in University College, and after leaving the hospital became house-physician to the Great Northern Hospital. He had intended to specialize in nervous and mental diseases, but his health broke down after an attack of scarlet fever, and he spent two years as a ship surgeon, visiting many parts of the world and doing some transport work during the South African war. When his health had been re-established he went to Paris for a year to study nervous diseases, and lived there among a group of writers and painters, including the late Mr. John Macdonald of the *Daily News*, whose daughter he married in 1904. After leaving Paris he joined the staff of Broadmoor Asylum as deputy medical officer, and a year or two later entered the Prison Service, becoming deputy medical officer at Parkhurst Prison. While holding that appointment he began the collection of the anthropological observations which formed the basis of the report to which Sir Bryan Donkin refers below. In 1913 he issued a schedule of anthropological data, and while at Parkhurst contributed to the Drapers' Company Research Memoirs a report on the inheritance of phthisis and insanity. He was elected a Fellow of University College, London, in 1914, and in 1915 he contributed a paper on the feeble-minded criminal to the *Proceedings of the National Association for the Feeble-minded*.

Dr. Goring is survived by his wife and two young children.

We are indebted to Sir H. BRYAN DONKIN for the following brief tribute to Dr. Goring's memory: His recent death is a grievous blow to those dear to him and a source of deep regret to all who knew him well. I was acquainted with him from the time he joined the Prison Medical Service, and met him very often on the many occasions of my visits to the hospital at Parkhurst Convict Prison, where he was on the staff for several years.

It was during those years that he contributed by far the largest individual share of observations to an inquiry that had already been entered upon with the help of some of the prison medical officers in order to test the value of certain doctrines, concerning the nature of criminals, which had attained wide notoriety, and were generally known as those of the school of Lombroso. When all the very numerous and laborious observations deemed necessary had been made, the whole mass of material, as well as the work of drawing up a report on it, was given to Dr. Goring in view of his recognized ability and keen interest in the subject. This report was ultimately published in 1913 by the Government, under the title of "The English Convict: a Statistical Study." It bears striking testimony to Dr. Goring's exceptionally great ability, to his immense powers of work, and to his unswerving devotion to the object he had in view, of arriving at the true meaning of the material

with which he had to deal. In consequence of the publication of this great work, and the wide interest it raised both here and abroad, Dr. Goring received the Weldon prize and medal of the University of Oxford.

It was owing to the great prominence of this study of the English convict that, when I was writing on the subject of mental defect in criminals in the *Journal of Mental Science* in January, 1917, I could not possibly pass over without comment some of the conclusions arrived at and the methods employed by Dr. Goring from which I differed widely. This was replied to by Dr. Goring in that journal at considerable length in April, 1918; and my further criticisms, written late in that year, were printed in the number for April, 1919, which was issued only a few days after Dr. Goring's death on May 5th. This sad concurrence of happenings has caused me great regret. The first news I had of Dr. Goring's death was on May 12th. This difference of view-point on the part of Dr. Goring's work between him and myself and the unavoidable appearance at this time of the article referred to, make me all the more anxious to record my own great regard for him, and my whole-hearted admiration for the exceptional degree of ability, zeal, and conscientiousness that informed all the work he took in hand, including the numerous minute but highly responsible duties of a prison medical officer. He will long be remembered by all who knew him well as a man of outstanding intellectual gifts and singularly attractive personality.

JAMES MACKENZIE BOOTH, M.D.,

Consulting Surgeon to the Aberdeen Royal Infirmary.

THE announcement of the death of Dr. James Mackenzie Booth has been received with great regret by his friends in Aberdeen and by many graduates of the University of Aberdeen. He was the son of Dr. James Booth of Aberdeen, and was born there in 1855. He was educated at Aberdeen Grammar School, graduated M.A. in the University of Aberdeen in 1875, M.B., C.M. in 1877, and M.D. in 1888. After acting for a short time as medical officer in Sutherlandshire he studied in Edinburgh, and then went to India as surgeon on the Duke of Buccleuch's yacht. In the following year, after spending some time in Vienna, he settled in Aberdeen. From 1880 to 1891 he was surgeon to the ear and throat department of the Aberdeen Dispensary, and from 1886 to 1890 anaesthetist to the Royal Infirmary. After holding the appointment of assistant surgeon to the Infirmary for two years he was appointed surgeon and lecturer on clinical surgery in 1892; he had previously been university lecturer on diseases of the ear, nose, and throat. In the earlier part of his career he gave a great deal of attention to these subjects, and was secretary of the Otology Section at the annual meeting of the British Medical Association in Newcastle-on-Tyne in 1892. Afterwards he practised general surgery, retaining, however, an interest in the special subject in which he first distinguished himself. He was very thorough in his work, well acquainted with the literature of surgery, and much esteemed by students as a sound practical teacher.

Dr. Mackenzie Booth had considerable literary gifts, which he used to good purpose. His skill in description may be judged by an article he published in this JOURNAL in April, 1888, in which he related the story of how an old man of notoriously intemperate habits was found one morning consumed to a cinder in a hay loft. His comments on the story show the good judgement and reticence which always characterized his writings. Dr. Mackenzie Booth was for many years honorary secretary of the Aberdeen, Banff, and Kincardine Branch of the British Medical Association, and took a great interest in the work of the Association, in which he made many friends, who valued the charm of his character and the equality of his judgement. He was also an active member of the Aberdeen Medico-Chirurgical Society. He was long greatly interested in the work of the Aberdeen Volunteer Medical Staff Corps, from which he retired with the rank of surgeon captain. His hobby was photography, in which he attained great excellence. Dr. Mackenzie Booth was a widower, and is survived by one son.

WALTER THOMAS CLEGG, F.R.C.S. EDIN.,

Honorary Surgeon, St. Paul's Eye Hospital, Liverpool.

THE sudden death of Mr. Walter T. Clegg after convalescence from pneumonia came as a painful surprise

to many of his professional friends. Of Manx descent, he was born in Liverpool in 1859. He was educated at Liverpool College and studied medicine at the Liverpool Royal Infirmary School of Medicine. He became M.R.C.S. in 1880, and after holding various residential appointments settled in general practice in 1883. Mr. W. T. Clegg soon established for himself a reputation for sound conscientious work and assiduity. For some time he held the post of honorary assistant surgeon to the Liverpool Cancer Hospital, where he did excellent work and published several cases of surgical interest in the *Liverpool Medico-Chirurgical Journal*. Later on he paid special attention to diseases of the eye, was appointed honorary surgeon to St. Paul's Eye Hospital, and thus built up a reputation as an ophthalmic surgeon. In this capacity he acted as surgeon to the West Derby and Prescot Unions and was honorary ophthalmic surgeon to the Waterloo Hospital. Mr. Clegg was of a quiet, somewhat reserved disposition, a staunch colleague, and most painstaking in his professional duties. As an operator he was neat and methodical and kept his knowledge abreast of the times. At the time of his illness his opinion in diseases of the eye was frequently sought, and many of his patients will regret the loss of such a sound practitioner. He leaves a widow and seven children. One son is a lieutenant in the army and one daughter a student of medicine at the University of Liverpool.

At the funeral, on May 17th, there was a large attendance of his professional friends and representatives of the public institutions with which he was connected.

SIR W. D. CAMPBELL WILLIAMS, K.C.M.G., C.B.,

Surgeon-General Australian Army Medical Corps.

SURGEON-GENERAL SIR WILLIAM DANIEL CAMPBELL WILLIAMS, K.C.M.G., C.B., of the Australian Army Medical Corps, died of influenza at Melbourne on May 10th. He was born at Sydney on July 30th, 1856, the son of the late Dr. W. G. Williams; he was educated at Sydney Grammar School, and at University College, London, where he was gold medallist in surgery. He took the diplomas of M.R.C.S. in 1879, and L.R.C.P. Lond. in 1880. After his return to Australia he was appointed to the staff of St. Vincent's Hospital, Sydney, to which he was for many years surgeon, and at the time of his death consulting surgeon. He received a commission as staff surgeon in the New South Wales Artillery, and in 1885 went to the Sudan as P.M.O., with the rank of surgeon-major, of the New South Wales contingent sent to the Sudan war, the first armed contingent sent overseas by one of the Dominions as part of the Imperial Forces. In 1900 he went to South Africa as colonel and P.M.O. of the Australian and New Zealand contingents, and served there also as P.M.O. of General Hamilton's and of General Hunter's forces, receiving the local rank of surgeon-general, and the C.B. He went overseas for the third time in 1914 with the Australian Forces, served in the war during 1914-16, and received the K.C.M.G. on June 3rd, 1916.

WE regret to record the death, on May 8th, at Camberley, of Dr. CHARLES EDGAR LEA, physician to Ancoats Hospital, and assistant medical officer to the Manchester Royal Infirmary. He was born at Sandbach, Cheshire, in 1882, and received his medical education at Manchester University and King's College, London. He graduated M.B. and Ch.B. Vict. in 1904, and M.D. (with commendation) five years later, and obtained the M.R.C.P. diploma in 1912. After holding the post of house-physician to the Manchester Royal Infirmary, he served as surgeon-captain in the Natal Medical Corps, with the Zululand Field Force in 1906, receiving the medal and clasp. He was subsequently clinical pathologist at the Nordrach-on-Dee Sanatorium, assistant director of the clinical laboratory, and medical registrar at the Manchester Royal Infirmary. In these years he devoted himself whole-heartedly to cardiology, and published a considerable number of able papers on this subject in the *Quarterly Journal of Medicine* and elsewhere. In recognition of this work he was elected an honorary research fellow in medicine in the University of Manchester. During the war he held for a time a temporary commission in the R.A.M.C. With intellectual gifts of a high order Dr. Edgar Lea combined great industry and much charm of manner. His early

death is a loss to the medical profession of Manchester and to the science of cardiology. Many friends mourn his death, and the deepest sympathy is felt with his widow.

The Services.

THE INDIAN MEDICAL SERVICE. ACTING RANK COUNTING FOR PENSIONS.

OFFICERS of the Indian Medical Service holding the temporary ranks and appointments in the field as D's.M.S. with the acting rank of surgeon-general, or D.D's.M.S. with the acting rank of colonel, are to be permitted to count service therein towards the additional pensions for which surgeon-generals and colonels respectively are eligible after certain periods of active employment in permanent appointments. Such services need not be continuous.

HONOURS.

ALBERT MEDAL.

SURGEON LIEUTENANT COMMANDER E. L. ATKINSON, D.S.O., R.N., has been awarded the Albert Medal for gallantry in saving life at sea. The following is the official record of the courageous act for which the distinction has been conferred:

On September 16th, 1918, a serious explosion occurred amidships on board H.M.S. *Glatton* whilst lying in Dover Harbour. This was followed immediately by an outbreak of fire, the oil fuel burning furiously and spreading fore and aft. Efforts were made to extinguish the fire by means of salvage tugs. The foremost magazines were flooded, but it was found impossible to get to the after magazine flooding positions. The explosion and fire cut off the after part of the ship, killing or seriously injuring all the officers who were on board, with one exception. The ship might have blown up at any moment. At the time of the explosion Surgeon Lieutenant Commander Atkinson was at work in his cabin. The first explosion rendered him unconscious. Recovering shortly, he found the flat outside his cabin filled with dense smoke and fumes. He made his way to the quarter deck by means of the ladder in the warrant officers' flat, the only one still intact. During this time he brought two unconscious men on to the upper deck, he himself being uninjured. He returned to the flat, and was bringing a third man up, when a smaller explosion occurred whilst he was on the ladder. This explosion blinded him, and at the same time a piece of metal was driven into his left leg in such a manner that he was unable to move until he had himself extracted it. Placing the third man on the upper deck, he proceeded forward through the shelter deck. By feel, being totally unable to see, he here found two more unconscious men, both of whom he brought out. He was found later on the upper deck in an almost unconscious condition, so wounded and burnt that his life was despaired of for some time.

FOREIGN DECORATIONS.

The following decorations and medals have been conferred by the King of Italy in recognition of distinguished services rendered during the course of the campaign:

Silver Medal for Valour.—Captains John Edwin Allan and William Eidinow, R.A.M.C.(S.R.)

Bronze Medal for Valour.—Captain (acting Major) George R. E. G. Mackay, M.C., R.A.M.C.(T.F.), and temporary Captains Francis J. A. Keane and John T. Lloyd, M.C., R.A.M.C.

Croce di Guerra.—Major-General Foster R. Newland, C.B., C.M.G., Lieut.-Colonels (temporary Colonels) Samuel A. Archer, C.M.G., R.A.M.C., and Ransom Pickard, C.M.G., R.A.M.C.(T.F.), Captain (acting Lieut.-Colonel) Ralph A. Broderick, D.S.O., M.C., R.A.M.C.(T.F.), Captains (acting Majors) Thomas D. Inch, O.B.E., M.C., R.A.M.C., Treffry Owen Thompson, R.A.M.C., Captain Robert L. Newell, R.A.M.C.(S.R.), Captain Oskar Teichmann, D.S.O., M.C., R.A.M.C.(T.F.Res.), temporary Captains Henry E. M. Baylis, R.A.M.C., James M. Christie, R.A.M.C., Ambrose Emerson, R.A.M.C.

The Emperor of Japan has conferred the Order of the Rising Sun (4th class) on Colonel William Robert Smith, R.A.M.C.(T.F.).

Surgeon Rear-Admiral J. J. Dennis, C.B., has been appointed a Commander of the Order of the Crown of Belgium, in recognition of valuable services rendered in the allied cause.

The name of Surgeon-Major Luke Gerald Dillon, M.D., has been mentioned by the Secretary of State for War for valuable services rendered in the United Kingdom in connexion with the war.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on May 16th the degree of Doctor of Medicine was conferred upon E. N. Russell.

On the same date a grace favouring compulsory science in the previous examination was rejected.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

Entrance Scholarships and Exhibitions, 1919.

SEVENTEEN medical entrance scholarships and exhibitions of an aggregate total value of about £1,550, tenable in the Faculty of Medical Sciences of University College and King's College, and in the medical schools of Westminster Hospital, King's College Hospital, University College Hospital, the London (Royal Free Hospital) School of Medicine for Women, and the

London Hospital, will be offered for competition on Tuesday, July 1st, and not on July 15th as originally arranged. Particulars may be obtained from the Secretary of the Board—Mr. S. C. Ranner, M.A., Medical School, King's College Hospital, Denmark Hill, London, S.E.5.

CONJOINT BOARD IN ENGLAND.

THE diplomas of L.R.C.P. and M.R.C.S. have been conferred upon the following candidates, who have passed the final examination of the Conjoint Board and complied with the by-laws of the Colleges:

J. H. Allan, B. A. Astley-Weston, Marjorie Back, C. W. Bennett, H. Buck, E. E. Carter, R. A. Cooke, Idris Davies, W. S. Dawson, T. H. Dobrashia, Lucien Dublé, Dwijendra Nath Dutt, Sylvia V. Elman, F. A. Evaas, J. Fanning, D. H. Geffen, R. B. Gibson, J. Gilmour, P. E. Gorst, St. G. B. D. Gray, Gwenvron M. Griffiths, Margaret Hammond, B. C. Hardiman, W. R. G. Harris, C. B. Henry, A. R. Hill, T. L. Hillier, F. G. Hobson, C. O. Hudson, R. Jenner-Clarke, Hassan Kamal, Muriel M. Kenworthy, Madari Andia Keshvalu, P. B. Kittel, A. O. Knight, J. N. Leitch, Lillian Lowenstein, L. Lyne, S. D. McAusland, J. J. M. MacDonnell, W. K. McKay, E. D. Macmillan, Girdharlal Tejval Mody, C. F. Newman, J. L. Nisbet, D. O'Donovan, J. L. C. O'Flynn, E. R. Peirce, F. L. Pickett, Norah D. Pinkerton, Lillie M. Pinson, W. Reikan, Hilda W. Richards, W. A. Richards, J. C. R. Richardson, E. D. T. Roberts, H. S. Robinson, J. S. Rogers, H. T. Roper-Hall, J. C. Russell, R. J. Saunders, A. E. Sawday, M. L. Schroeter, E. L. Segeant, E. N. Shewell-Rogers, W. S. Sykes, G. B. Tarring, A. C. Teuton, A. H. Thurlton, E. R. Webb, D. E. Wijewardene, S. C. de S. Wijeyeratne, S. Wolff, M. Wong, W. Worger, A. E. Young.

Medical News.

MR. G. E. GASK, C.M.G., D.S.O., F.R.C.S., having completed his service in France, has returned to civil practice in London, and Major J. J. COX, M.D., late Commissioner of Medical Services, North-West Region, to Manchester.

AMONG those who have recently been called to the Bar are Major H. J. Milligan, M.C., R.A.M.C., and Captain F. J. Henry, M.C., R.A.M.C., both of Glasgow University and Gray's Inn.

THE trustees of the British Museum have elected Sir Norman Moore, Bt., President of the Royal College of Physicians of London, a member of the standing committee.

THE governors of St. George's Hospital have abandoned the proposal to sell the hospital and rebuild elsewhere, and have decided to rebuild the hospital on the present site.

THE Hertfordshire Local Medical and Panel Committee invite medical practitioners to attend a special meeting at Hatfield on Tuesday next, May 27th, at 2.45 p.m., when Dr. Brackenbury will give an address.

DR. F. A. BAINBRIDGE, professor of physiology in the University of London, and Dr. G. S. Graham-Smith, lecturer in hygiene in the University of Cambridge, have been elected Fellows of the Royal Society.

THE King of the Belgians has conferred the honour of officer of the Order of the Crown of Belgium upon Dr. H. E. Cuff, O.B.E., principal medical officer, Metropolitan Asylums Board, in recognition of valuable services rendered in the allied cause.

DR. SEPTIMUS SUNDERLAND has received from the French Ambassador in London the decoration of Chevalier de la Légion d'Honneur in recognition of his many years of valuable service as physician to the French Hospital and Dispensary, Shaftesbury Avenue.

THE *Bulletin international*, a quarterly review which for forty-nine years has published reports of the international committees of the Red Cross, will become a monthly periodical with the title of *Revue internationale de la croix rouge*.

THE Prince of Wales has become president of the Royal Dental Hospital of London, Leicester Square, to show his appreciation of the work of the hospital since August, 1914; in this period over 350,000 operations were performed.

THE Royal Faculty of Physicians and Surgeons of Glasgow has adopted a resolution expressing the opinion that the Dogs' Protection Bill, if passed into law, would seriously impede the progress of exact medical knowledge. Copies have been sent to the Home Secretary and members of Parliament for Scotland.

DR. HAROLD PRINGLE, lecturer on histology and assistant in the department of physiology in the University of Edinburgh, has been appointed professor of physiology in Trinity College, Dublin, in the room of the late Sir Henry Thompson, who was drowned at sea when the *Leinster* was sunk in the Irish Sea last October.

THE post of Director-General of the League of Red Cross Societies, founded this month at the conference of Red Cross Societies in Paris, has been accepted by Lieut.-General Sir David Henderson, K.C.B., D.S.O., who was Director-General of Military Aeronautics from 1913-18.

THE Glasgow University Club is resuming its activities after the war. The Club dines at the Trocadero Restaurant on Friday next, May 30th. The Right Hon. Sir Robert S. Horne, Minister of Labour, will be in the chair. Further information can be obtained from Dr. David Roxburgh, honorary secretary, 30, Seymour Street.

DR. GRAHAM LITTLE has accepted an invitation to open the discussion on lichen planus, the subject chosen for general discussion at the meeting of the American Dermatological Association at Atlantic City in June. The meeting is to be held the same time as the American Congress of Physicians and Surgeons, of which the Dermatological Association forms a component part.

THE President of the Local Government Board has appointed Lieut.-Colonel Sir Shirley F. Murphy, F.R.C.S., R.A.M.C.(T.), some time Medical Officer of Health, Administrative County of London, at present attached to the London Command, to represent His Majesty's Government at the forthcoming congresses of the Ontario Medical Association and the American Medical Association to be held at Toronto and Atlantic City respectively.

THE accounts presented at the usual monthly meeting of the committee of the Medical Sickness, Annuity, and Life Assurance Friendly Society on May 16th showed a considerable decrease in the influenza claims. The experience of chronic claims on those in half pay was below the expectation, and had been gradually falling for some years, thus proving that the strict medical examination of new proposers was beginning to tell in the society's favour. The return of medical men to their practices from army service has resulted in a large increase of new business. The new scheme of sickness insurance for medical women had been favourably received. This is believed to be the first serious attempt to establish a permanent protection against sickness and accident for women practitioners. The society does not charge any extra premium for war risks on either life or sickness rates. Particulars of the society's work can be obtained from the Secretary, 300, High Holborn, W.C.1.

Letters, Notes, and Answers.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR OF THE BRITISH MEDICAL JOURNAL, *Atitology, Westrand, London*; telephone, 2531, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

"AJAX" asks for suggestions for the relief of severe lightning pains in a patient with locomotor ataxia. Many drugs have been tried without benefit.

HOME FOR BLIND GENTLEMAN.

"A.T." desires to hear of a home where a blind gentleman, aged between 50 and 60, able to contribute 25s. a week, would be received. He has lived twenty years in a village, but the after-war conditions make matters difficult for him.

"*." We have had, on this question, the advantage of the advice of Mr. Henry Stainsby (Secretary-General of the National Institute for the Blind). He writes that he knows of no home unless the blind man can pay from £2 to £3 a week, and adds: "A single person could live quite comfortably in a country village on 25s. a week despite these abnormal times. I should suggest, therefore, that the man return to the village which he knows so well and in which he is so well known, there to live a normal life."

SWIMMING FOR CHILDREN.

MR. WALTER EDMUNDS (London, W.1) asks for experience as to (1) the age at which healthy children should be taught to swim; (2) the best way to teach them; (3) the smallest bath in which they can be taught. The head master of a London County School, Mr. Edmunds writes, recently stated that all his boys over 9 years of age could swim. The concrete open-

air swimming bath which some residential schools have is only of use in summer. An indoor warm water bath like that at the Tooting Special Military Hospital, described by Dr. Buzzard last week (p. 610), seems, Mr. Edmunds thinks, much better. The sea, even when available, is not, he suggests, very suitable for the purpose; the state of the tide does not often fit in with school routine. After learning to swim in fresh water, a boy would enjoy sea bathing much more than if he could not swim.

STYRIAN ARSENIC EATERS.

H. F. W.—Sir Thomas Oliver informs us that there is little to add to the account he gave of this matter in his article on arsenic in *Allbutt's System of Medicine*, vol. ii, Part I, but he has been good enough to give the following information: "The form in which the arsenic is taken is as *huttereich*, a mineral substance rich in arsenic, 6 grains as a dose, gradually increased; it is taken also as orpiment (arsenic trisulphide), 2 grains for a dose at first. It is taken chiefly by males as a tonic and to improve the respiratory powers; it is said also to increase sexual desire and ability. Arsenic eaters in Styria, after they have gradually accustomed themselves to the drug and acquired immunity, have a longevity equal to the non-arsenic-eating population. There is no evidence that the arsenic eaters of Styria are more prone to cancer than others of the non-arsenic-eating population. In Great Britain the late Sir Jonathan Hutchinson found skin cancer follow after prolonged courses of treatment by arsenic; so, too, Sir Clifford Allbutt." From Sir Thomas Oliver's article it appears that the drug is taken at intervals of a few days, and that a local royal commission reported that the frequency of the practice had been grossly exaggerated.

LETTERS, NOTES, ETC.

MEDICAL RESETTLEMENT.

"EX-CAPTAIN R.A.M.C." writes: On joining the army I was informed by circular from the London Insurance Committee that men on my list who joined the army would be reinstated on my list automatically on their return to civil life, in accordance with a scheme agreed upon between the London Insurance and Panel Committees and the Insurance Commissioners. I now find this has been cancelled, with the result that a number have signed on with other doctors in my absence and wish to transfer to me. With the multiplicity of bodies looking after our interests, I think panel practitioners in the army should have been so informed, as many might not have signed on again. At the same time it does not lessen our sense of gratitude to the men at home who "carried on" under many adverse circumstances.

BENZOL FOR MOTOR CARS.

DR. W. J. YOUNG (Harston, Cambridge) writes: Mr. Massao Buist in his recent article suggested trial of a mixture of two parts petrol and one benzol. After trial I am able to recommend a mixture of half and half. The engine runs more sweetly, power is greater, mileage per gallon is increased and cost is lessened. My Napier, which would hardly move on the bad petrol of last winter, did quite nicely on the two to one mixture, and now runs quite admirably on half and half; my Ford revels in this mixture. As the engine heats more, the cooling apparatus must be looked to, the spark kept well advanced and plenty of air given. Benzol is said to have a tendency to "soot up"; the preventive is again plenty of air, which means also economy and efficiency.

"*." The Automobile Association informs us that it is compiling a list of retailers stocking benzol; it invites motorists desiring information to communicate with the Fuels Department, A.A. and M.U., Fanum House, Whitcomb Street, London, W.C.2.

FAILURE TO NOTIFY OPHTHALMIA NEONATORUM.

AT the Newcastle-on-Tyne police court, on May 16th, a medical man was summoned on information laid by the medical officer of health charging him with having unlawfully and wilfully neglected to obey a regulation of the Local Government Board requiring notification of ophthalmia neonatorum. Mr. Molineux pleaded "guilty" on behalf of the defendant, who did not appear. The deputy town clerk, who prosecuted, said that the child was born prematurely; a certified midwife was in attendance and the defendant was called in later. Four days after the birth the midwife noticed a discharge from the child's eyes and the doctor's attention was drawn to this. Subsequently the child was taken to the defendant's surgery when he was out, and when the mother saw him later he ordered the child to be taken to the Eye Infirmary. The left eye was then totally gone and there was little hope of saving the other. The defendant, in a letter of explanation to the M.O.H., said he did not attend the child, and only looked in now and again when he was passing. He ended, "As it was not a case for me, I did not notify you, but at the same time if it had been, I was not aware that such cases had to be notified." In view of the notices sent out to all practitioners in the city by the M.O.H., the prosecution held that no one could be unaware of the obligation of a medical man to notify this disease. Dr. A. S. Percival, surgeon to the Northumberland and Durham Eye Infirmary, at the request of the magistrates, described the condition of

the child's eyes on admission, and said that the mother told him that the discharge existed from two days after the birth. The curability of this disease, he said, under proper treatment was extraordinary. He did not think that the gravity of the condition of the child's eyes should have been overlooked. The senior magistrate present, Dr. F. C. Coley, said that the bench had considered the case very carefully, and came to the conclusion that it was necessary to impose a fine of £50.

NAVAL MEDICAL DEMOBILIZATION.

THE appearance of "Temporary's" letter in the JOURNAL of April 19th has prompted several of his colleagues to write to us on the same subject. Their letters are all much to the same effect, and there is a certain monotony even in their pseudonyms. We have space only for extracts.

"TEMPORARY TOO" asks whether there is any guarantee that the Admiralty will credit the temporary surgeon, who has been a surgeon probationer, with his time in the latter rank when assessing priority claims for release; and whether the temporary surgeon serving abroad when his turn for release comes round will have to forego his opportunity and see others demobilized over his head? Few would credit, he says, the amount of unrest now existing among temporary surgeons, and he ends by asking if the Admiralty are prepared to state the number of temporary medical officers who have been released since the armistice, side by side with the number of other officers and men demobilized since that date.

"ANOTHER TEMPORARY" complains that the medical men who early in the war volunteered under a definite contract for service in the navy are still in ignorance as to how and when they will be demobilized. He cannot understand why the Admiralty do not make public the details of their plans for the release of temporary medical officers. He realizes, however, the very difficult position in which, owing to the dearth of candidates for permanent commissions in the medical service R.N., the authorities at the Admiralty must be placed; many of them, he admits, are most eager to reform and improve the service; yet month after month passes, the reforms do not appear, nor do candidates for permanent commissions.

"VERY TEMPORARY" asks when he and his colleagues may expect more effective means of appeal for release than the "proper service channels," where a purely medical appeal may be turned down by a layman. He insists that proper attention should be paid to individual cases. For the past sixteen months he himself has been in medical charge of a ship's complement averaging forty-five men; during that time he has done not more than six hours' work of any kind; meanwhile, requests for a change to some work have been met with "Cannot be forwarded," and pleas for early demobilization with "Cannot be spared." In his opinion the R.N.M.S. is over-staffed and ill-distributed.

DR. W. J. JAGO (Monmouth), writing from personal experience after demobilization in February last, says: "Although after four and a half years' service I can understand the anxiety of many temporary surgeons to be demobilized, yet it would be just as well if they curbed their anxiety. The dearth of doctors of which we heard does not appear to exist, and unless they have definite posts to go to they had better remain where they are." He states that naval medical demobilization was taken over by the Ministry of National Service, and that Appendix XII of the K.R. and A.I. (Engagement of Temporary Surgeons) has been done away with, though those concerned were not informed of the fact.

"TEMPORARY," in a further letter, makes inquiries with regard to the statement in the JOURNAL of April 26th, published at the request of the Medical Director-General R.N., that "the agreements signed by temporary medical officers on entering the Royal Navy will be honoured as a matter of course in all cases." This correspondent asks: (1) Do the Admiralty intend to release temporary medical officers at the date of the signing of the peace preliminaries with Germany, or have they some other interpretation of the phrase, "duration of the war"? (2) Will medical officers who insist on being demobilized receive the full gratuity as published in the JOURNAL of March 29th, or only that to which they are entitled under previous regulations?

A CORONER'S DIAGNOSIS.

WE have received a copy of the *Wiltshire Times* for May 17th, 1919, containing the report of an inquest held at Trowbridge, by Mr. Sylvester, coroner, on the death of a plasterer and tiler, aged 53. The widow's evidence showed that the deceased man, who had not seen a doctor for five years, had usually enjoyed good health, save for a complaint of slight pains in the stomach at times after meals. He was at work up to the day of his death, and seemed to be in his usual health. He ate bread and cheese for supper and had a glass or more of beer, after which he went to bed as usual. The widow had never known him faint or complain of giddiness. She was awakened during the night by a peculiar noise, which seemed to come from her husband's throat. She spoke to him, but he did not answer, and the doctor was sent for. Dr. R. M. Wright, of Trowbridge, stated in evidence that he was called about 2.45 a.m., and saw deceased (of whom he

had no previous professional knowledge) lying in bed in a natural position, but quite dead. There were no external marks of any sort. The coroner pressed Dr. Wright to give an opinion as to the cause of death, but the witness replied that it was impossible to say what was the exact cause of death by simply seeing the body. He indicated several possibilities, of which the most probable was rupture of an internal aneurysm; but he quite properly refused to go further than that, insisting that without an internal examination he could not state the exact cause of death. The coroner said he thought this was the first inquest he had held where the medical witness was unable to form an opinion as to the cause of death. It seemed perfectly clear from the evidence that deceased came by his death from natural causes; there was no certain evidence as to those causes, but the most probable was rupture of an internal aneurysm. There was no suspicion that deceased had taken any drug or anything else, and he saw no reason why a *post-mortem* examination should be held. The case was quite a simple one and he had had hundreds and his father before him thousands of similar cases, and it had not been their practice to hold *post-mortem* examinations, and he did not now intend to put the county to the expense of doing so. From the evidence he found that deceased came by his death from the rupture of an aortic aneurysm.

We can understand the coroner's reasons for bringing in a verdict of death from natural causes, but we are not aware that there was any obligation upon him to go further in the absence of clinical or pathological evidence. The medical witness under pressure mentioned aneurysm as the most probable of various possible causes of death. If he did not think the circumstances called for a *post-mortem* examination the coroner should not have made a diagnosis and placed it upon the records. Such a finding is worthless and statistically misleading.

QUATERCENTENARY OF LEONARDO DA VINCI.

THE four hundredth anniversary of the death of Leonardo da Vinci was celebrated at Naples on May 2nd. An address was delivered by Professor Filippo Bottazzi. The great artist was an enthusiastic anatomist. He began his studies in the Hospital of Santa Maria Nova at Florence in 1489, when he was in his 37th year, and continued them at Milan in the Ospedale Maggiore and the Collegio dei Fisici, and afterwards at Rome in 1513 till they were forbidden by Leo X, on a denunciation of body-snatching made by some German enemies. He dissected more than thirty bodies of men and women of various ages, and his observations were collected in one hundred and twenty books; much of the manuscript has been lost, and the drawings designed to illustrate the text of a great work on anatomy to have been written in conjunction with Marc' Antonio della Torre, the famous professor of Pavia, lay forgotten in the Ambrosian Library at Milan, and afterwards in the Royal Library at Windsor, until they were discovered in 1902. They are now in course of publication by the pious care of three Norwegian scholars, whose magnificent work, *Leonardo da Vinci: Quaderni d'Anatomia*, was reviewed in the BRITISH MEDICAL JOURNAL of March 10th, 1917. Some years ago E. Jakschath of Berlin put forward a claim that Leonardo was the real founder of modern anatomy, and that Vesalius stole not only his discoveries but his drawings. While it is undeniable that the great Italian artist was a pioneer in anatomy, the fact remains that his work remained unknown for five centuries. To Vesalius must always belong the fame of having been the Columbus of a new world of science.

THE appointment of certifying factory surgeon at Carney (Sligo) is vacant.

THE appointment of a medical referee under the Workmen's Compensation Act, 1906, for the Salford and Manchester County Courts, in Circuits Nos. 7 and 8 respectively, is vacant. Applications to the Private Secretary, Home Office, by June 12th.

THE Hillman Motor Car Company ask us to state that though, as stated a few weeks ago, they had evolved a 6-cylinder engine they are not marketing a car with an engine of this type as they are fully employed with their standard 11 h.p. car.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

ACUTE ENCEPHALO-MYELITIS.

A CLINICAL AND EXPERIMENTAL INVESTIGATION OF
AN AUSTRALIAN EPIDEMIC.

BY

J. B. CLELAND, M.D., Ch.M.,

PRINCIPAL MICROBIOLOGIST, DEPARTMENT OF PUBLIC HEALTH, N.S.W.,

AND

ALFRED W. CAMPBELL, M.D.

(From the Microbiological Laboratory, Department of Public
Health, New South Wales.)

IN the late summer of the years 1917 and 1918 certain country towns in New South Wales (also in certain parts of Queensland and Victoria) were visited by an epidemic, so sudden in attack, so indiscriminate in its selection of children and adults, and so frequently fatal, that it received the newspaper name of "the mysterious disease."

The disease soon came under investigation, and earlier workers suggested that it represented the meningitic form of acute poliomyelitis (the Heine-Medin disease). This suggestion we ventured to consider premature, and proceeding to the further investigation which we thought was demanded, a series of features were revealed—clinical, histological, and experimental—which seem to us so distinctive as to render the case for acute poliomyelitis unproven, and to point at least to the operation of a mutant of the virus of acute poliomyelitis, and perhaps to a distinct though kindred disease, and in either case to justify the designation "X" (unknown quantity) or "acute encephalo-myelitis." We may add that the disease appears to differ decidedly from "encephalitis lethargica," recently epidemic in England.

The research has been based on the clinical examination of 134 human cases, the examination of tissues from sixteen of these which proved fatal, and a long series of animal experiments, coupled with exhaustive histological examination of the tissues; being so extensive, we can in this paper merely attempt to set forth the salient findings, punctuating those which are distinctive and submitting our thesis for judgement.

EPIDEMIOLOGY.

One feature of the epidemic is that it appeared in the same months—namely, January, February, March, and April (chiefly February and March)—of two successive years. Another feature concerns distribution. In New South Wales almost all the cases arose in "outback" towns or districts, some hundreds of miles remote both from the metropolis (Sydney) and from one another, but all alike in possession of a dry climate. Hence it is permissible to suggest that climate may be a factor.

Further, it is specially to be observed that the epidemic did not synchronize and could not be connected with any epidemic of acute poliomyelitis arising either in metropolitan or rural districts. Similarly, cases of cerebrospinal meningitis were comparatively few in New South Wales during the time and the years in question, and the same applies to influenza.

Concerning the dissemination of the disease in given localities, we obtained some evidence that it spread from member to member in families, or that it arose in "contacts"; in the majority of cases, however, the source of infection was hidden. Also, neither by observation, inquiry, nor experiment could we bring blame upon insects or other non-human carriers.

Age and Sex Incidence.

Infants and children under 5 years of age (nearly 50 per cent. of the total) were exceedingly prone to the affection; at the same time there were 34 cases in persons over 25 years of age.

Males suffered more than females, the figures being 85 to 36.

Termination.

Ninety-four patients died, 35 recovered completely, and 5 recovered, but with subsequent paralysis (3 cases), or signs of mental disorder (2 cases). This death-rate (70 per

cent.) is not only high in itself, but high in comparison with that shown in epidemics of "acute poliomyelitis."

Duration.

In the fatal cases the duration of the illness was on a general average four to six days. In a few fulminant cases, affecting both adults and children, death took place within twenty-four hours. The fatal case of longest duration lasted twelve days. In those who recovered, acute symptoms usually passed off within from ten to twelve days, and convalescence was rapid.

SYMPTOMS.

Though there was probably an incubation period of from five to twelve days (compare the experiments on monkeys), we have not sufficient data to fix its length.

Indefinite symptoms such as headache, lassitude, malaise, irritability, mental confusion, drowsiness, pains in various parts of the body, and weakness of the limbs, were often present for from two to five days, and might be regarded as prodromal indications, but these were as often absent and then the onset of acute and definite symptoms occurred with dramatic suddenness.

An attack of vomiting, significant of cerebral irritation, was the most frequent initial sign, particularly in children, and was soon followed by fever and convulsions. In adults the opening symptoms took the form of headache, mental disorder (confusion, drowsiness, lethargy), retrocervical pain, and general muscular weakness and inco-ordination. In all cases there was elevation of temperature; in the early stages readings of 101° or 102° F. were usual, and readings of 104° to 105° as the disease progressed were common. Convulsions, or convulsive movements of some kind, occurred in no less than 87 cases, and adults did not escape, although they suffered less frequently than children. In the beginning the convulsions were of the ordinary kind. Later, with dulling of consciousness, the ordinary convulsion was replaced by erratic, perhaps alternating, movements of the arms or legs—in some instances the patient was aptly described as "thrashing the bed"—or a limb was held flexed in tonic spasm, or there were localized twitchings of individual limb muscles, coarse tremors of the limbs, facial twitching, grinding of the teeth, alternate protrusion and retraction of the tongue, blinking of the eyes, or hiccough. In short, there was no end to the convulsive muscular movements. There was likewise a state of heightened reflex activity, slight disturbance, as in examining or sponging the patient, sufficing to induce a convulsive movement. Rigidity also, often unevenly distributed, was a dominant sign.

Mental symptoms of some kind were present in a considerable number of cases. We have mentioned lethargy, confusion, and drowsiness as early symptoms, and may add that these were followed with extraordinary frequency by varying degrees of unconsciousness; indeed, this happened in no fewer than 83 cases. Often the initial mental obfuscation was followed by delirium and then by unconsciousness, gradually deepening into coma. In two adults there were symptoms of acute delirious mania, and many were "dazed," "irrational," "childish," or "incoherent."

Affection of the cranial nerves, apart from those which subserve visceral functions, was not a feature. In one case alone unilateral facial paresis was noted. Definite facial or lingual paralysis, or fifth nerve paralysis, or ophthalmoplegia were not once observed. This absence of cranial nerve paralysis constitutes an important difference from encephalitis lethargica. Strabismus, though frequently seen, was a late phenomenon and always of the irritative, irregular kind seen in cases of meningitis. Nystagmus was not much in evidence. Concerning cranial nerves subserving visceral functions, swallowing was frequently interfered with, Cheyne-Stokes breathing was occasionally noticed, and respiratory or vagal paralysis was often the assigned immediate cause of death.

Limbs.—In comparison with epidemics of ordinary "acute poliomyelitis" the number of cases in which paralysis of limb or body muscles occurred was extremely small. Thus, among the 40 who survived, there were but 3 left with lasting paralysis (lower limb paralysis in each instance), while among the 93 fatal cases there were only 8 in which paralysis of some kind, not always definite, was noted.

* The investigation is about to be published in *extenso* in the report of the Microbiological Laboratory of the Department of Public Health, Sydney.

Of other less important or occasional symptoms, we have to mention alimentary disorder, nasal discharge (muco-purulent or sanious), incontinence of urine and faeces, priapism, and albuminuria.

The cerebro-spinal fluid, examined in a great many cases, usually showed an excess of cell contents, but no specifically abnormal elements; the usual examinations, cultural and microscopic, for pathogenic micro-organisms proved negative. Hence the conclusion seems justified that the responsible organism is a filter passer.

In blood counts made by Dr. Burnell in a certain number of cases, an increase of leucocytes was the only constant change.

A CLINICAL REPORT OF A CASE. (Notes of Drs. Burnell and Wallace.)

K. T., male, aged 6 years, was admitted to the Broken Hill Hospital on February 15th and died on February 18th. The child had been "out of sorts" for a week. On February 15th he complained of headache and at night was restless and suffered from retching. Next day he was drowsy and without appetite. At night he became delirious and his limbs twitched. At midday on February 15th twitching of the limbs became worse, and half an hour later he suddenly lost consciousness, lying with his eyes closed, fingers twitching and limbs moving aimlessly. In this state he was brought to hospital.

When examined after admission the child was semi-conscious and resented interference. The right arm was moved about aimlessly, and the same arm and the right leg were rather rigid. There was cervical rigidity but no head retraction. The abdomen was retracted. Kernig's sign was present on both sides. The knee-jerks were absent; the plantar reflexes were flexor. The pupils were equal and contracted. There was no nystagmus. He lay with open, staring eyes, looking dazed, and he frothed at the mouth. The heart and lung sounds were normal. Later he became rational, giving his name and indicating the site of the headache, which was frontal, and saying there was no pain elsewhere. He swallowed well. His pulse was weak at times. He passed urine in his bed. A blood count showed 28,000 leucocytes per c.mm., of which 90 per cent. were polymorphonuclears, 1 per cent. small lymphocytes, and 9 per cent. transitional cells. Lumbar puncture was performed and a few lymphocytes were present in the fluid, but no organisms.

On February 16th and 17th there were alternating periods of consciousness and unconsciousness. The temperature was sustained between 102° and 105° F., the pulse varied from 120 to 140, and the respirations from 32 to 48.

He died on February 18th, and at the post-mortem examination injection of the pia mater of the brain, and a little blood-stained fluid in the left pleural cavity were noted.

MICROSCOPIC EXAMINATION (HUMAN CASES).

Material from 16 fatal cases was submitted to exhaustive examination, and in case after case the nervous system was found to be affected by similar changes, the only difference being one of degree. Other tissues—heart, lung, liver, kidney, lymphatic glands, etc.—showed no distinctive change.

The changes in the nervous system were acute, and followed the blood vessels. Vascular engorgement was general, and was accompanied by a tendency to capillary haemorrhage, specially noticeable in the pia mater of all parts, and in certain parts of the grey substance. In many instances the congestion was so great that the entire vessel plexus stood out as if artificially injected, presenting a very striking picture when seen in the brain cortex or spinal cornua.

Another constant and characteristic feature, and one which we regarded as primary, was an investment of the veins, small and large, by a collar, sheath, or sleeve of lymphocyte-like cells, generally several layers deep and filling the perivenous space. Arteries appeared at times to show a similar investing cell accumulation, but the appearances were invariably traceable to exudation from the venae comites of such arteries.

In addition to these sheaths of lymphocyte-like cells round the veins, collections, colonies, or islets of similar cells were found lying apparently free and isolated in the nervous substance. They were specially noticed in the basal nuclei, the nucleus pontis, the olivary bodies of the medulla, and the spinal grey substance, and probably represented exudations or infiltrations from capillaries.

Another important change found in the cortex cerebri and pons, in some cases, we regard as foci of milinary necrosis or softening. These occurred in the form of oval or round areas which stood out by their pallor and consisted of a delicate reticulum from which all nervous elements had disappeared. We believe these to have resulted from the occlusion of terminal vessels.

Degeneration or destruction of nerve cells was not a prominent feature. Cells of course were seen showing stages of chromatolysis, or beset by so-called cytophages, but on the whole the integrity of the nerve cells was remarkable; indeed, cells situated in the anterior cornua of the spinal cord were often seen in a fair state of preservation although lying in fields flooded with lymphocytes.

Certain parts of the nervous system showed the changes more intensely than others. Such parts were the cortex cerebri, the basal nuclei, the dentate nucleus of the cerebellum, the dorsal region of the pons and medulla, and the cornua of the spinal cord. Obviously these are all composed of grey matter, but from this it must not be inferred that the changes were confined to the grey substance; white substance suffered, but to a very much less extent than grey, and the difference appeared to us to be solely due to the difference in vascular supply of the respective substances.

Commentary.

It may be gathered from the above description that the changes of disease fall into line with those described as characterizing "acute poliomyelitis." There are, however, important differences. Thus, while the changes in all our cases were widely distributed and collectively severe, in one instance alone were the lesions in any situation, but particularly in the spinal cord, gross in character, that is, represented by obvious areas of destructive necrosis or softening, lesions sufficiently great to enable a pathologist to couple paralysis with them as a certain clinical forerunner. (The same applies to our animal series.) Again, in practically all our cases the changes in the encephalon were dominant, greater and never less than those in the spinal cord, which agrees with the clinical manifestations, but not, so far as we know, with what has been shown in any recorded epidemic of "acute poliomyelitis."

EXPERIMENTS ON ANIMALS.

Our experimental investigation extended over many months, and is represented by a total of over 130 experiments. Various animals were used—namely, macaque monkeys, sheep, one horse, three calves, and some lower animals. Numerous side-issues also were followed up. Hence the investigation has been comprehensive as well as extensive. It will be understood that in work of this kind negative and positive results become intermingled, and both call for explanation. Hence it is necessary to set down the failures in as much detail as the successes, but since we have done this in our full report, already quoted, there is no call for repetition here.

Positive Results.

We may begin by saying that all our positive results have followed the intracerebral injection of virus-containing material, which material consisted of an emulsion in glycerin or normal saline solution of portions of the nervous system (brain, spinal cord, pons, and medulla) of the human subject or animal dead from "X disease."

I. We have been successful in conveying "X disease" from the human subject (3 cases) to 5 monkeys (*Macacus rhesus*).

II. We have been successful in conveying the disease from monkey to monkey, and in showing that the virus may breed true and maintain its virulence through a succession of fourteen generations. We have also found that, in the case of *Macacus rhesus*, intracerebral inoculation of the material described gave a "take" with consistent certainty, showing that this species of monkey seems to possess little immunity to the disease, and at the same time enabling the experimenter to keep the virus living for an indefinite period.

III. We have succeeded in transmitting the disease (a) from monkey to sheep, (b) from sheep to sheep, and (c) back from sheep to monkey, and from one of these monkeys through a series of further monkeys. The sheep, however, appears to differ from the monkey in possessing some natural immunity; thus our experience was that of three inoculated sheep one might give a definite "take," while the remaining two might "take" either very slightly or not at all.

IV. We have succeeded in transmitting the disease with fatal results from the monkey to one horse and one calf.

We look upon the susceptibility of the sheep, horse, and calf as highly important, because, so far as we are aware, from the writings of Flexner and many others, acute poliomyelitis, while transmissible to the monkey, is not to the sheep, nor to horse, nor calf. The fact, therefore, provides another ground for believing that "X disease" and "acute poliomyelitis" are not identical, and at the same time encourages hope of the future obtainment of a serviceable antiserum.

Next, before mentioning the negative results, we shall give a short account of the symptoms and microscopic findings in the successfully inoculated animals.

A. Monkey.

The successfully inoculated animals, twenty altogether, recovered well from the operation and continued in their usual health for from five to twelve days. Then they became obviously ill, and the progress of serious symptoms was rapid, usually leading to a moribund state or a fatal termination in from two and a half to six days.

The initial symptoms were general dullness, and an anxious facial expression, suggestive of pain or some kind of suffering. On the following day the animal would be found sitting with half-closed eyes, as if dozing, and its coat would be staring. When induced to move, some muscular weakness and inco-ordination would be apparent. Some animals at this stage presented a rabid demeanour. Later, the muscular inco-ordination and weakness would be very decided, and there might be some general coarse tremor. (The possibility of some of the apparent inco-ordination being due to impairment of vision must be considered.) Definite flaccid paralysis of limbs was not a feature. At this stage, in the case of three animals, disturbance of any kind, even clapping the hands, evoked a convulsion, characterized by a fall, a period of apparent unconsciousness, tonic spasm, rolling of the eyes, but no decided clonic movement, all lasting about one or two minutes, and leaving the animal more dazed than before. The only cranial nerve paralysis observed was squint in two animals and ptosis in three. Terminally, with accumulated weakness, inco-ordination, convulsions, and stupor, the animal would be found prostrate in the cage and progressing towards a moribund state. And even at this state flaccid paralysis was not definitely established; there would still be some prehensile power in hands and feet, noxious stimuli would evoke some movement (also denoting preservation of protopathic sensibility), the muscle tone would not be lost, the tendon reflexes could be elicited, there would be movements of the tail and head, and the animal might chew and swallow food placed in its mouth.

The condition differed, therefore, from that obtaining in experimentally produced "acute poliomyelitis," in which, according to other writers and in agreement with our own experiences, flaccid paralysis of one or more limbs, shown by absolute inability to move the limb or limbs and by muscular flaccidity, is a dominant sign.

Microscopic Examination.—Our examination of the nervous system and other tissues of the animals in this experimental series was as comprehensive as in the human series, and the following is obviously a summarized description of the changes found.

At the site of inoculation (when visible) there were ordinary reactionary changes, without suppuration. The pia mater, particularly of the brain and cerebellum, was congested and showed a tendency to haemorrhage and cell exudation in the pial meshes.

Generally distributed throughout the nervous system, specially affecting the grey but not sparing the white substance, vascular engorgement, sheathing of the veins with small round cells, colonies of small round cells, and splashes of petechial haemorrhage, were found, and again these changes were never grossly destructive, and must have collectively exercised their injurious effects. From the comparative standpoint they closely resembled those noted in the human subject, the only difference being that in the monkey the affection of brain, cerebellum, pons, and medulla was less in degree.

B. Sheep.

Thirteen sheep were successfully inoculated, as confirmed by histological examination.

In these the incubation period varied from three to twelve days, the actual illness from one to five or seven days. The first symptoms were disinclination to "feed" and hanging of the head. Then signs of cerebro-spinal irritation arose. Thus quivering or tremor of the lips or ears was frequent, sometimes extending to the whole body and appearing as epileptiform convulsions. Champing movements of the jaws, grinding of the teeth, and accelerated or irregular breathing were also common. While cervical rigidity, retraction of the head, a stiff gait, a tendency to walk in a circle, "staggers," drowsiness, weakness in the hind legs (one case), nasal discharge of mucus, or dribbling from the mouth, were occasionally noticed. All these animals died or were killed when moribund.

Microscopic Examination.—At the site of inoculation there were the usual reactionary changes, without suppuration. Filling of the perivenous spaces with small round deeply-stained cells was the dominant and outstanding change (more so than in man and the monkey). At the same time there were splashes of haemorrhage and an infiltration of the tissues with small round cells. These changes were again distributed throughout the nervous system, but were most intense in the basal nuclei and the grey substance of the medulla oblongata and spinal cord. There can be no question that the histological picture in the sheep was produced by the same virus as had operated in man and the monkey.

C. Horse.

One horse was inoculated successfully.

After an inoculation period of nine days the animal (a yearling colt) had two "turns," during which it walked in a circle towards the left. On the following day its head was depressed, it staggered on moving, it inclined to fall to the left side, and it had twitching of facial muscles, hurried abdominal respirations, a temperature of 103.8° F., and appeared to be blind. Next day it was "down" on its right side, unable to rise. There were tremors and irregular movements of the limbs, the nostrils were "working," and the ears and eyebrows twitching. In this state intense and repeated convulsions supervened, which had lasted for three-quarters of an hour when the animal was killed.

Microscopic Examination.—The changes present in the nervous system were closely comparable with those we had so frequently produced in the sheep and monkey.

D. Calf.

One calf was inoculated successfully.

There was an incubation period of five days, when the animal went off its food, hung its head, and trembled all over. On the second day it was worse. On the third day it was found lying on its right side with arched back and retracted neck. Thereafter general and severe convulsions arose and caused death.

Microscopic Examination.—The histological changes were remarkably like those seen in the horse and sheep.

NEGATIVE RESULTS.

A. Monkeys.

Eight monkeys died shortly after the operation, or from sepsis, and their cases may be dismissed from consideration.

In the case of 10 monkeys, intracerebral inoculations of brain and spinal cord emulsion from 8 human cases of "X disease" failed. These failures were attributed on the one hand to the absence, relative or complete, of the virus in the injection, due to the length of time, ten to twenty-eight days, that the glycerinated material had been kept, or to injurious conditions suffered by the material during transit by post; or, on the other hand, to the species of monkey employed (*M. cynomolgus*), with which species we did not obtain one successful inoculation.

In the case of 7 monkeys, intracerebral inoculation of emulsified brain and spinal cord from infected monkeys failed, but all these failures could be reasonably explained by dying out of the virus during prolonged storage in glycerin, or on other grounds.

Intraperitoneal inoculation of the usual human emulsion (2 monkeys) and of swabs from human contacts (1 monkey); intrasciatic inoculation of the usual human emulsion (1 monkey) and of swabs from human contacts (1 monkey); intracerebral inoculation of human cerebro-spinal fluid (2 monkeys), of Pasteur-Chamberland F filtrates of human material (3 monkeys), of a "Noguchi culture," (1 monkey), of nasopharyngeal swabs from a human case and contacts (2 monkeys), of material from a horse dying mysteriously (1 monkey), and of an emulsion of fowl ticks found near the dwelling place of a case of "X disease" (1 monkey), and the introduction of the virus into a vein (1 monkey)—all failed.

B. Sheep.

Five sheep died within four and a half days of the operation, either as a direct result of this, or of post-anaesthetic lung affection, or of sepsis, and so pass out of consideration.

Six sheep survived intracerebral inoculation of fresh human or monkey nervous material, but showed slight symptoms, probably of encephalitis.

Two sheep showed no symptoms after intracerebral inoculation of the usual human emulsion, but in one case the material had been stored in an ice chest for thirteen days, and in the other the material had failed to induce symptoms in monkeys, and therefore the inference is that the material did not contain the virus at the time of inoculation.

Thirteen sheep showed no symptoms after intracerebral inoculation of the brain and spinal cord emulsion from infected monkeys. We concluded that seven of these sheep possessed natural immunity, and in the case of the remainder reasonable explanations of the failure can be supplied.

Four sheep showed no symptoms after intracerebral inoculation of brain and spinal cord emulsion from other infected sheep. These sheep seemed to be naturally immune.

There was failure to induce the disease in three sheep by intracerebral injection of a Berkofeld filtrate of material from an infected monkey, from which we inferred that the virus did

not pass the pores of this filter, at least in sufficient quantity to induce infection.

A sheep which had its nostrils swabbed with an emulsion of the brain and spinal cord from an infected monkey showed no after-effects.

C. Other Animals.

We failed to convey the disease to four dogs, two kittens, three rabbits, two guinea-pigs, and one fowl.

SUMMARY.

1. *Clinically*.—An account of a form of encephalo-mylitis, occurring as an epidemic in the late summer of 1917 and 1918, confined almost entirely to certain dry inland parts of New South Wales; appearing as an acute and severe illness, often abrupt in onset, and fatal in 70 per cent. of cases; affecting children mainly but not sparing adults; characterized by general signs of cerebro-spinal irritation—namely, convulsions, rigidity, heightened reflex excitability, mental obtusation, and loss of consciousness; accompanied by fever and gastric and other disturbances; terminating in exhaustion, coma, and death in a few days, or in rapid recovery, usually complete, but in a few instances attended by flaccid paralysis or mental disorder.

2. *Histologically*.—Exhaustive microscopic examination of the nervous system in 16 cases showed acute encephalo-mylitis, universally distributed; characterized by vascular engorgement, "sleeving" of veins with lymphocyte-like cells, isolated "colonies" in and infiltration of the tissues with similar cells, and a tendency to capillary haemorrhage; affecting grey substance more than white on account of the difference in vascular supply; and seldom grossly destructive as in "acute poliomyelitis."

3. *Experimentally*.—By intracerebral inoculation of an emulsion of portions of the parent nervous system the disease has been conveyed from human subject to monkey (*Macacus rhesus*); from monkey to monkey, in series; from monkey to sheep; from sheep to sheep; back from sheep to monkey; and on again through monkeys; and lastly, from monkey to one horse and one calf—all of which results were confirmed by histological examination, showing changes unequivocally corresponding with those found in *homo*.

4. The disease in monkeys was eminently fatal, and was mainly characterized by weakness, drowsiness, and intense inco-ordination of movement. Flaccid paralysis was not a dominant feature. Some sheep gave no response to inoculation, others showed slight or no signs of disease, proving a certain degree of immunity. In the "positive" sheep convulsions commonly caused death. The inoculated horse and calf also died from convulsions.

CONCLUSION.

The disease, from the anatomical standpoint, may be called "acute encephalo-mylitis."

It resembles "acute poliomyelitis" and "encephalitis lethargica" inasmuch as the responsible, undiscovered virus has an evident affinity for the central nervous system; probably requires incubation therein, under favourable conditions, to perfect its nocive power, and produces histological changes which follow the blood vessels, hence suggesting that all three diseases may be due to mutants of the one virus.

On the contrary, however, the individuality of this epidemic; the preponderance of signs of cerebro-spinal irritation; the high rate of mortality; the common affection of adults; the infrequency of paralysis of cranial or peripheral nerves; the widespread changes in the nervous system without gross focal lesions; the susceptibility of the sheep, horse, and calf, as well as the monkey; and the reproduction of preponderating signs of cerebral irritation and of the human histological changes in all these animals, favour the conclusion that the disease is a distinct entity.

TWO OUTBREAKS OF MILD DYSENTERY

ASSOCIATED WITH THE

SCHMITZ BACILLUS (*B. AMBIGUUS* ANDREWES).

BY

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SOME clinical and laboratory observations made during the investigations of two outbreaks of a mild form of dysentery during July, 1918, are given in this note. They appear of particular interest from the fact that the laboratory work carried out indicated that the causal organism was the *B. dysenteriae* Schmitz (*B. ambiguus* Andrewes), and that the first outbreak was of rare extent.

In Professor Andrewes's account¹ of his investigations into several strains of bacillary organisms, which he has included in the general term "dysentery group," are detailed his findings when working upon a similar micro-organism, together with some interesting remarks on what have been frequently termed "atypical" dysentery bacilli.

A bacillus of similar biological characters has been isolated from dysenteric stools by several workers in various countries. It has been my previous experience while working in the Mediterranean littoral to isolate it very rarely, and then from the stool of a patient suffering with a mild form of dysentery.

Clinically the cases to be described presented signs and symptoms which resembled those seen in mild cases due to the Flexner-Hiss bacillus. The more severe form of dysentery and the associated toxicity so generally found when the infective micro-organism is the Shiga bacillus were not observed in any case.

The first outbreak was amongst troops belonging to one camp. Those in an adjoining camp remained free from infection. The troops in the camp affected had recently arrived from a distant allied country, while in the other they were British, and had been in Italy for several months. Within the period of one week 12 officers and 350 men, out of a total of 3,000 troops, fell ill with a comparatively mild form of dysentery associated with vomiting and abdominal pain. The onset was sudden and acute. In many there was collapse, and the temperature rose to around 102° F. The duration of the attack averaged three to four days, when the patient was practically able to return to his duties and the stools were normal in consistency and character. There were no deaths.

The stools were numerous during the first twenty-four to forty-eight hours, and frequency persisted exceptionally to five or six days. The stools consisted mainly of mucus and bile-stained watery faecal matter; some contained blood flakes or cells only, but no clots. The mucus in a few was clear and in plaques, while in others it was more opaque and occurred as fine flakes, of colour and consistency varying between clear and white according as the pus and epithelial cells therein were few or numerous.

Microscopical examination of stools showed—save one which contained *Lambia* cysts due to a previous infection—an absence of animal parasites and also of vibrios. The micro-organisms present in great numbers were (1) a non motile short bacillus lying packed in the mucus, (2) a motile bacillus of varying length.

Cultures of Stools.—Special methods were undertaken to determine if culturable vibrios were present, but none were found.

Washed mucus of those stools examined during the first day or two of symptoms showed comparable cultural results when plated on MacConkey media. The predominant colonies resembled those of the Flexner-Hiss bacillus. They proved to be of *B. dysenteriae* Schmitz, a non-lactose fermenting short bacillus, which was found to be non-motile, Gram-negative, and to ferment glucose (without gas formation) and not mannite, saccharose, maltose, dulcitol, nor lactose. Gelatin was not liquefied. There was no marked change in the litmus milk as prepared. Fresh milk could not be obtained. The indol reaction was positive in twenty-four to forty-eight hours. The bacillus was not agglutinated in specific anti-Flexner, anti-Hiss, and anti-Shiga animal serums.

B. pyocyaneus was also isolated, but in a much lesser number of colonies from a small proportion of the same stools.

The second and much smaller outbreak occurred amongst the personnel of a military hospital and at a later date. There was a number of similar cases of mild dysentery, accompanied in some with vomiting, and in the cases investigated the *B. pyocyaneus* was not found.

At the last meeting of the Zoological Society of London Mr. E. C. Boulenger, F.Z.S., exhibited a series of living specimens of the British rats and their varieties, and stated that during the past four years there was evidence that the so-called old English black rat had increased in numbers. Lieut.-Colonel S. Monckton Copeman, F.R.S., F.Z.S., read a paper on experiments on sex determination, illustrating his remarks by a series of charts.

but the Schmitz bacillus again grow in a considerable number of colonies after plating out the stools.

The Schmitz bacillus was not found when some stools from the above cases were examined at a later date and when normal in character. No further cases of dysentery occurred amongst the troops in the same camp or hospital.

The blood serums of seven of the first series of patients taken nine and fifteen days after the onset of symptoms were tested for agglutinability of the Schmitz bacillus and the *B. pyocyaneus* isolated with negative results. Similar findings by the agglutination test on the Schmitz bacillus with the serums from cases at the hospital were obtained. Three strains isolated were submitted to the Michaelis acid test, but after two hours the result was negative in all tubes; after twenty-four hours' standing fine flocculi were obtained in tube No. 6.

It appears that these outbreaks were due to an intestinal intoxication dependent upon the proliferation and mild toxicity of the Schmitz bacillus, and that the pathological condition of the intestine present in more severe forms of bacillary dysentery did not develop. Intestinal disorder, often classed as physiological disturbance due to change of climate and of diet, is not infrequent amongst troops when they are transferred to a country and to conditions new to them, especially during summer months if that country be subtropical or tropical. But the clinical symptoms and signs observed differ from those seen in such a physiological state, and the direct microscopic and cultural results from stool examinations, which showed considerable numbers of the Schmitz bacillus during the time dysenteric stools were passed and none when the stools returned to normal, are such as lead me to accuse this micro-organism of playing some part in these outbreaks, if it be not the real causal agent. Moreover, I have not yet found the Schmitz bacillus in a stool from a patient without a history of dysentery, nor in normal stools.

The troops were allowed to eat raw fruit, and the water in the camp affected was at that period not chlorinated; in the adjoining camp it was. The sanitation officer did not trace the cause of the disease to these sources. The day preceding the second outbreak raw tomatoes had been bought and eaten by many of those who became ill. A similar clinical condition arose amongst troops in Malta after eating raw tomatoes in the summer of 1916.

The micro-organism above described has similar biological characters to the *B. ambiguus* described by Andrewes; his strains gave negative results when small or large doses of aerobic broth culture were injected into a rabbit's vein. Its morphological cultural and fermentative characters are similar to those described by Schmitz for his bacillus in an account of an outbreak of dysentery amongst Rumanian prisoners of war, but the symptoms it produced in man were much less severe, and it did not kill the rabbit as did the bacillus isolated by Schmitz.²

The extensive and valuable work of Captain Murray³ has shown that the bacilli described by Schmitz and Andrewes may be placed in one group, and it will be interesting to learn the comparative results with para-Shiga strains of Dudgeon and others from the Mediterranean littoral.

I beg to thank Lieut.-Colonel J. W. West, C.M.G., R.A.M.C., for permission to publish this article.

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ANAESTHETICS IN A BRITISH HOSPITAL, WITH THE SERBIAN ARMY.

BY

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THIS series of anaesthetics was commenced in August 1916, and continued until January, 1918. All the operations took place under canvas in the heart of a country with a subtropical climate. The nationality of the subjects treated was mainly Serbian. The Serbian soldiers were very fit and strong men between the ages of 18 and 50, most of whom had faced the hardship of war, not only during the present struggle, but in the previous Balkan campaigns, and practically all had led an outdoor life. The outstanding features from an anaesthetist's point of view

were their good physique, the sound state of their teeth and the absence of dentures; a large percentage did not smoke at all, and those that did were almost all cigarette smokers. A noticeable feature in the early stages was the fear of an anaesthetic. Special account had to be taken of endemic disease (malaria), and occasionally of the effects of dysentery and scurvy in their relation to cardiac complications.

In the first series many of the wounded were in a state of exhaustion on admission, owing to difficulties of transport. Where possible, these cases were allowed to rest for some hours before operation.

The methods of administration adopted were as follows:

1. Open administration of a mixture (ether 2 parts, chloroform 1 part), with and without previous administration of morphine.
2. McCardie's mitigated ether method with open E_2C_1 sequence (with and without previous administration of morphine and atropine).
3. Closed ether, sometimes with oxygen.
4. Nitrous oxide.
5. Nitrous oxide-ether sequence.
6. Nitrous oxide with oxygen (improvised).
7. Chloroform (Junker's bottle).
8. Combination of methods 1, 2, 3, and 6 with local anaesthesia.

Methods 1 and 2 were the most frequently employed; they were given in a series of cases, with and without previous alkaloidal administration, and the results were compared. The cases which had not had a previous injection of alkaloids were in general head cases and thoracic injuries. The administration of E_2C_1 mixture was sometimes preceded by $\frac{1}{4}$ to 1 drachm of chloroform given drop by drop on a Schimmelbusch frame covered with 12-ply gauze and a layer of lint (with a small hole the size of half a crown in the centre) over all. In this method the morphine when given was in doses of $\frac{1}{4}$ or $\frac{1}{2}$ grain one hour to one hour and a half before operation, as nearly as it could be gauged. At this stage no atropine was given.

The anaesthesia obtained was as a whole very satisfactory. Induction was rather slow (about six to eight minutes on the average), and in cases newly admitted from the trenches it was often accompanied by great excitement and struggling, whether morphine had been given or not. The maintenance of anaesthesia was as a rule even and regular; there was little vomiting, and no respiratory disturbance or salivation. It was noted that those patients who had morphine took a little less anaesthetic, and generally the induction was quieter and a little quicker. Signs of shock on the table were absent, except in a few cases where the operation had been prolonged and severe, or where haemorrhage had occurred. The period of recovery was quiescent.

1. E_2C_1 —Schimmelbusch Frame.

The following summary shows the quantities of anaesthetic used:

- (a) With preliminary morphine: 333 operations; average length of operation 37.9 minutes; average quantity per operation 11.3 drachms; or, taking an operation of thirty minutes' duration, 8.7 drachms.
- (b) Without preliminary morphine: 231 operations; average length of operation 33.1 minutes; average quantity per operation 10.6 drachms; or, taking an operation of thirty minutes' duration, 9.6 drachms.

It will be noted that there is not a big difference in the quantities used in the two classes, the cause being chiefly absence of the ideal conditions for complete success with preliminary alkaloids, such as quietness of surroundings, subdued light, and smooth transport from ward tents to theatre. However, the other benefits were obtained. With regard to the quantities used as compared with open ether administration, the figures given by Silk¹ and others are 6 to 8 ounces an hour, or even 8 to 10 ounces an hour in Malta.

2. McCardie's Mitigated Ether.

In this procedure a Clover apparatus is used into which 1 oz. of ether, with half a drachm of chloroform, are placed in the container, and 21 minims of E_2C_1 mixture in the bag. The facepiece is closely and firmly applied; induction is commenced by rebreathing from the bag only for forty to sixty seconds, and followed by turning on the mitigated ether. Watch is kept for cyanosis, and if this appears (which is rare), one or two breaths of air are given. Induction was almost always easy, quiet, and rapid, taking four or five minutes. Anaesthesia with these quantities lasted from fourteen to twenty minutes, when, if the operation required it, open E_2C_1 followed.

Those cases which had a previous alkaloidal administration were given morphine gr. $\frac{1}{4}$ and atropine gr. $\frac{1}{100}$, half an hour before operation as nearly as possible.

The advantages gained from this method were confirmatory of those claimed by McCardie,² namely—

1. The respiratory irritation due to ether vapour by the closed method is much mitigated by the addition of a small quantity of chloroform.
2. The addition of chloroform in this amount distinctly saves the work of the heart and lungs in a long or severe operation.
3. The mixture is practically as safe as ether alone.
4. It is valuable as a routine method of inducing anaesthesia, being safe and rapid.
5. A few drops of E_2C_1 mixture are preferable to ethyl chloride as a preliminary to the administration of the mitigated ether.
6. For maintenance of anaesthesia E_2C_1 mixture by the open method is preferable to even mitigated ether, owing to the prevalence of respiratory irritability in soldiers.

The following summary shows the total quantities of anaesthetic used with and without previous alkaloids:

- (a) With alkaloids: 214 operations; average length of operation 30.1 minutes; average quantity used 13.2 drachms; or, for operation of 30 minutes, 13.12 drachms.
- (b) Without alkaloids: 100 operations; average length of operation 29.06 minutes; average quantity used 14.4 drachms; or, for operation of 30 minutes, 14.7 drachms (that is, including the original 1 ounce of ether and half a drachm of chloroform put into the Clover inhaler).

3. Closed Ether.

This was only used in 65 cases, 26 with previous alkaloidal treatment and 39 without.

- (a) With alkaloids: 26 operations; average length of operation 42.03 minutes; average quantity used 17.8 drachms; or, reduced down to an operation of 30 minutes, 12.6 drachms.
- (b) Without alkaloids: 39 operations; average length of operation 35.1 minutes; average quantity used 16.1 drachms; or, reduced down to an operation of 30 minutes, 13.6 drachms.

This method was adopted in several cases of a severe type, such as high amputations, and also in slight cases. In the first it was often accompanied by oxygen and occasionally warmed by placing a little hot water in the bag, as recommended by Beresford Kingsford.³ I abandoned it for general use on account of various well known disadvantages, such as respiratory discomfort, salivation (particularly prevalent in Serbs), and also the objection by some patients to a closed apparatus. The addition of oxygen helped materially in lessening the amount given, and easing induction.

4. Nitrous Oxide.

This was given frequently for minor operations in 111 cases, including some dental ones. The apparatus in use was of the simple ordinary variety, with an arrangement for rebreathing. It was found very efficient, especially if given by the rebreathing method with intervals of air breathing according to stage of narcosis, the aim always being to avoid any cyanosis. The use of a rubber dental prop, as Boyle suggests, is a great advantage; it aids induction and ensures easy ingress for the gas or air, especially if there is the slightest sign of nasal obstruction.

5. Nitrous Oxide-Ether Sequence.

This was adopted in some forty-five cases, and gave very satisfactory results. The type of case generally chosen was the minor or short operation, and in which there had been no antecedent alkaloidal preparation. Here again the rubber dental mouth prop is advantageous.

6. Nitrous Oxide with Oxygen.

This was employed only twice, in an improvised fashion, owing to the lack of any suitable apparatus, such as that recommended by Captain A. S. Wilson.⁴ Rough and ready as the method was, it proved of great value in two cases of amputation of the thigh, in which the patients were very weak from chronic sepsis. In both novocain was injected at the site of amputation, and in one $\frac{1}{4}$ grain of morphine was given one and a half hours before. The operations were performed quickly, there were no signs of shock, and recovery from anaesthesia was rapid and without any incident, such as vomiting.

7. Chloroform.

This was only used in operations on the face and lower jaw by means of a Junker's bottle. The proportion of these cases was not large, and no special difficulties were met with. The chloroform was introduced by means of a soft rubber catheter passed five inches down the nose.

8. Local Anaesthesia.

This was frequently used alone or in conjunction with a general anaesthetic in operations on the head and chest, and for amputations. It certainly aided in diminishing the amount of anaesthetic used, and in limiting shock or disturbance during section of nerve trunks. In thoracic operations the method is of great value.

GENERAL REMARKS.

By the use of alkaloids liability to shock on the table is decidedly diminished, and the amount of anaesthetic required is less. The period of recovery is of a more quiescent character. It is contraindicated in cranial cases, especially where mentality is impaired, and in the recently severely wounded who are already suffering from shock. Care should be taken when any heart muscle weakness exists or is suspected from such causes as malaria or chronic sepsis.

The choice of anaesthetic should be based on such considerations as the following:

1. Whether the wound is of a severe character and accompanied by shock.
2. The period of time that has elapsed since its infliction.
3. Whether haemorrhage has occurred or is likely to occur.
4. Whether an acute infection is present (notably gas infections) and the operation is likely to be of the nature of an amputation.

It is in the last named cases that the greatest dangers are likely to be met, but these are considerably diminished if the patient can have some hours' rest in bed with the application of external warmth. In such cases the best results have been obtained with an induction by McCardie's method, or warmed ether, and oxygen.

In abdominal cases McCardie's method was used with advantage, followed by ordinary closed ether and oxygen, if necessary. The use of oxygen is insisted on, as it acts as a stimulant, improving the anaesthesia and diminishing the amount of anaesthetic used.

I am specially in agreement with Captain Geoffrey Marshall's⁵ remarks on the choice of gas and oxygen in wounds of the limbs requiring amputation, and the withholding of morphine. His recommendation of it for smaller operations as a routine method is very timely.

For the average type of case which has been in hospital a little time and for operations of expediency the best results have been obtained by McCardie's method, and, secondly, by the open administration of E_2C_1 mixture. These have the advantage of simplicity, ease, quietness of induction, and economy.

After-Results.

In some cases in which haemorrhage had occurred the use of E_2C_1 mixture was followed by collapse, which caused anxiety and necessitated the administration of intravenous saline.

Vomiting did not often occur during the course of operation, but chiefly when the patient was moved, in the application of dressings or transference to a stretcher. In the wards it occurred very seldom. There were no cases of delayed chloroform poisoning.

Chest complications were very few in number—not more than four or five in all (two of bronchopneumonia of a mild type, and the rest bronchitis). All recovered.

There were no fatalities.

I have to thank the operating surgeons, Major G. P. Mills and Lieutenant John H. Watson, for their constant help and suggestions, and the other members of the unit with whom I was associated in the work.

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ANTIMALARIA MEASURES IN ENGLAND.

BY

ANGUS MACDONALD, M.D., D.P.H., D.T.M.,
TEMPORARY CAPTAIN R.A.M.C.

THE record of the occurrence and control of malaria, imported and indigenous, in England will be published for the War Office by the consultant in malaria. Permission is granted for a brief summary to be given before the British Medical Association.

Carriers.

From various seats of war cases of malaria in all stages of the disease have returned to England during the years 1916-19. Necessity for control was anticipated, and was inaugurated by the War Office from the date of first return of infected troops. As malaria infection is consistent, both in officers and men, with "carrying on," infected troops returned to their units, where they were dealt with as variously required, and were thus distributed throughout the country.

Dangerous Areas.

Historical evidence and indigenous occurrences in 1917 determined the institution of special measures of control in areas of great anopheline incidence, especially in Sheppey, Sandwich, Romney Marsh, and Essex. Local conditions modify the effect of anopheline incidence; but in Sandwich and Sheppey abundance of anophelines coincided with large aggregation of troops and intimacy of infectivity.

*Indigenous Malaria.**Incidence and Distribution in 1917 and 1918.*

Situation.	1917. No. of Cases.	1918. No. of Cases.
Sheppey	68	31
Sandwich	69	6
Elsewhere	26	24
Total	163	61

Seasonal Distribution of Malaria Occurrence and Infection in 1918.

Occurrence.		Infection.	
Date.	No. of Cases.	Probable Date.	No. of Cases.
1918.			
May	3	May	4
June	2	June	2
July	1	July	3
August	22	August	47
September	29	September	4
October	4	October	1
Total	61		61

All cases in 1918 were specially investigated. Malaria was authenticated of all. Indigenous origin was established by the absence of possibility of foreign infection. The locality of infection was assumed by the demonstration of (1) the disease, (2) intimate contact with carriers, (3) the presence of anophelines.

In nine cases assumed to be indigenous and contracted in May, June, and July, protozoal incubation of resting mosquitoes (a notorious anopheline habit) in artificially heated premises, is postulated, to account for infection at a date when atmospheric temperature was probably not sufficiently high to cause "natural" infection. The other infective conditions were present. One occurrence in June it was preferred to accept as a latent infection from 1917. Some conditions were present, all were possible, in June; but undoubtedly all conditions had been present in August, 1917. The majority of infections, as might be expected, occurred in early August.

General Antimalaria Measures.

The general antimalaria measures were as follows:

- (a) Supervision by malaria expert.
- (b) Blood examination of doubtful pyrexia.
- (c) Supervision of troops from overseas.
- (d) Segregation and screening of carriers.
- (e) Special instruction of medical officers.
- (f) Quinine treatment of case and carrier.
- (g) Entomological investigation.

Of these provisions, (a), (b), (c), (e), and (g), aided detection and stimulated control and treatment; (d) and (f) are of direct preventive value, the former in diminishing the chances of biting and transmission, the latter by reducing the infective power of the individual, who in the vast majority of the cases dealt with was a carrier of the *Plasmodium vivax*.

Antilarval and Antimosquito Measures.

These measures, definitely sanitary, were adopted mainly in the "dangerous areas"—Sheppey, Sandwich, Romney Marsh. Labour difficulties were general, but least felt in Sandwich, where the most accurate work was accomplished.

Destruction of Mosquitos in their Winter Quarters.—*A. maculipennis* is the main domestic danger in England. She winters where the conditions obtainable are warmth, freedom from draught and disturbance, shade, and food. These are to be found within buildings where cattle (kine, horses, pigs, etc.) are housed. During summer months these conditions are to be found more readily in relation to human dwellings; cattle are rarely or but temporarily housed; *maculipennis* wanders and finds rest, shade, warmth (at natural temperature), quietness, and food in man's sleeping quarters. Farm steadings—stables, cowsheds, pigsties—have been cleared of mosquitos in winter months. Those not killed directly could not live exposed to winter temperatures outside. Repeated operations in these buildings were aided by thorough whitewashing, which enables ready detection. The common dense shroud of cobwebs conceals the mosquitos. The effect of this destruction has been obvious in districts operated. Where "myriads" were recorded on March 4th, 1918, six were with difficulty found on March 4th, 1919. In districts under observation, not operated, *maculipennis* prevalence in 1917, 1918, and 1919 has not varied.

Prevention of Larval Development.—For every wintering *maculipennis* destroyed there are probably hundreds of larvae kept from existence. But direct attack on breeding places so supplements the process of limitation that elimination locally is feasible. *Maculipennis* larvae depend for their chances of existence on the presence of vegetation in and on the surface of the waters. The whole aim of antilarval measures has been so to treat all breeding places as to maintain a clear exposed water surface, bottom and sides free of vegetation, and banks trained and devoid of overhanging growth. In Sandwich, besides operations on notoriously infested waters at wider range, more than twenty miles of dykes have been kept trained and free of weed, all within the camp area and in intimate relation to an aggregation of some 30,000 men, harbouring a carrier volume not readily ascertainable. The result of the combination of operations has been rarity of *maculipennis* within military quarters, absence of larvae from treated dykes, and a record of six indigenous cases in 1918 as against sixty-nine in 1917. These six also resulted from a local defect in detail. In Sheppey, where circumstances did not allow of so thorough measures being carried out, there is reduction from sixty-eight to thirty-one military cases, and from thirty-five to fourteen amongst civilians, owing to the protection of military operations.

GENERAL CONSIDERATIONS.

Attempts at the practical prevention of malaria have been threefold, and all over the world they have been tried separately and in combination.

1. Quinine treatment and prophylaxis.
2. Personal protection—by screening, netting, and repellants.
3. Direct limitation of mosquitos.

Notwithstanding theoretical and real minimal value, quinine as a preventive of malaria is practically valueless. For the individual nothing is a sheet anchor; for the community it is valueless.

The direct limitation of mosquitos is the only proven measure of practical value; its application is direct and local, not vague and distributed; it is inexpensive, and can be effected by the existing personnel, rightly directed, of any and every sanitary establishment, and in sound practical hands its results are absolute. Its value has been demonstrated in the past twenty years all over the world, and is not to be set aside by the imaginative predictions of administrative propagandists and the unpractical *ipse dixit* of students of the *in vitro*. And now from the different seats of war reports show the valuable work done and obvious good results obtained. Every

practical sanitarian (and many health officers from this country have had their opportunity and made good) who has handled malaria prevention has received results, and knows that thus only is success to be achieved.

It may seem somewhat parochial in a subject of such universal interest to bring forward evidence from limited operations in England; but they have been unique, in that it is the first opportunity that has existed of studying indigenous malaria in England with the knowledge of its entity.

I briefly sum up the evidence of recent occurrences in England in proof of the value of definite sanitary operations in the prevention of malaria. And as far as England is concerned, while it would be absurd and uncalled for to institute antimosquito measures throughout the entire area of anopheline distribution, there may be parts of the country where the coincident distribution of vehicle and carrier may be intense. In these it may be incumbent on authority to adopt the proven measures of malaria prevention.

Summary.

1. Mosquito prevalence was similar in 1917 and 1918.
2. Conditions for indigenous infection existed both in 1917 and 1918.
3. Carrier population was increased in 1918.
4. Where general measures were adopted, but when control was more accurate, the scattered occurrences in 1918 were 24, as against 26 in 1917.
5. Where sanitary measures were added to the scheme of prevention, as in Sheppey, the cases in 1918 number 45, as against 103 in 1917.
6. Where more accurate operations were attained in Sandwich the number of indigenous cases fell from 69 to 6.

THE ELECTRICAL CHANGES IN ACTIVE TISSUES.

ABSTRACT OF THE SILVANUS THOMPSON MEMORIAL LECTURE GIVEN BEFORE THE RÖNTGEN SOCIETY ON MAY 6TH, 1919.

BY

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The phenomena of electrical changes in active tissues have been a favourite subject of investigation by physiologists, no doubt greatly on account of the accurate methods of measurement available, even at a comparatively early date. Although electric fish were known to the ancient world, and the effects of their discharges were described by Aristotle and Pliny, it was not until about 1780 that Galvani discovered similar properties in ordinary muscle, naturally much less intense, and requiring delicate methods to detect them. Matteucci in 1833 appears to have been the first to use the galvanometer in their investigation, and the work of Du Bois-Reymond was only a little later. Before long, these properties were shown to exist in nerve, in glands, and in smooth muscle.

It is not my intention to discuss the details of all these cases, but rather to direct attention to certain facts which throw light on their manner of production and their significance. It may be pointed out that electrical changes are not in themselves of great importance, but rather as indicating the existence of phenomena otherwise difficult or impossible to investigate.

Since the introduction of the theory of electrolytic dissociation of conductors in watery solution, it has been realized that we must look for the explanation of the facts before us on the basis of the movement and redistribution of ions. The body may be regarded as a framework of non-conducting material, immersed in and soaked by solutions of electrolytes. Evidence derived from many and various sources shows that living cells are surrounded by delicate membranes, which allow water and certain solutes, such as urea and the lower alcohols, to pass through freely, but refuse passage to the majority of salts, to sugars, etc. It was pointed out by Ostwald in 1890 that if a membrane is impermeable to one of the ions into which a salt is dissociated, it is indifferent whether the oppositely charged ion can get through or not, because this latter can only leave the neighbourhood of its fellow for a very small distance on account of the great magnitude of the electrostatic attraction between them. It will therefore form a layer on the outer side of the membrane,

while the opposite ions form a layer on the inner side. This is the "electric double layer" described by Helmholtz, and is clearly the cause of a difference of potential between the two sides of the membrane.

Now Bernstein in 1902 showed that if we suppose the membrane of the muscle cell to be impermeable to certain anions but permeable to certain cations, the latter will form an outer layer with a positive charge, while the interior of the membrane will have a negative charge. He showed, moreover, how all the facts of "muscle electricity" are explicable on this view. What the particular ions are it is as yet impossible to state; but those of potassium phosphate seem to be the most probable.

What, then, are the facts to be explained?

1. Since the whole of the surface of the cell is supposed to be possessed of the membrane in question, it is easy to see that application of electrodes connected to a galvanometer should show that it is equipotential at all points. This is the case with uninjured muscle and also with nerve.

2. Suppose that the two electrodes are placed at different points and that we injure the membrane under one of the electrodes, so that it becomes freely permeable to both ions. The double layer ceases to exist at the injured point, the ions freely mix, and the electrode is in connexion with the interior of the cell—that is, the negative component of the double layer at the normal parts of the surface. We have what is called the "current of injury" or "demarcation current," in which the injured spot is negative to the uninjured parts. It is to be noted that the older theories regarded the changes at the injured spot as the source of the current, while the new view regards the uninjured surface as the source. Bernstein was able to decide the question in the latter sense by warming locally. The demarcation current was unaltered by warming the injured spot, increased by warming the normal place. The effect of temperature was also used to decide between a physical theory, such as that spoken of, and those theories which attributed the phenomena to chemical reactions at the injured spot. The magnitude of the current of injury was found to be proportional to the absolute temperature and not to have the high temperature coefficient of a chemical reaction.

3. The current of injury disappears more or less quickly, as it should do if the electrolytes within the cell diffused away at the permeable injured place.

4. There is evidence that increase of permeability is a general characteristic of the state of activity. Details of this evidence are beyond the limits of this account, but, accepting them, we may examine what would happen if we led off from the normal surface and from an injured spot and then stimulated the muscle to contract. The normal surface would approximate more or less completely, as regards its permeability, to the injured spot, the double layer would disappear and with it the source of the current of injury. This was called the "negative variation," that is, the decrease, of this current.

5. If both electrodes are on uninjured spots and a wave of excitation passes along the muscle, as it passes one electrode it makes this one negative to the other, and then, leaving the former, it reaches the second and makes this negative to the first. We have a current first in one direction, immediately followed by one in the opposite direction. This is the "diphase variation."

Their impermeability to ions makes cells bad conductors of electrical currents. Their resistance thus decreases in the state of activity or when the membranes are destroyed. This is the basis of Stewart's method of determining the proportion between the corpuscles and the plasma in the blood. It also accounts for the high resistance of nerves in the transverse direction.

The main fact that an active spot in muscle or nerve is negative to one at rest is therefore accounted for satisfactorily on the "membrane theory" of Bernstein.

As instances of the use of the fact may be mentioned Lewis's localization of the pace-maker in the mammalian heart and the extensive use of the electrocardiogram in practice. It is beyond the object of this lecture to discuss the meaning of the components of the latter, but a word of warning should be given against hasty interpretation of details in the curve. Slight changes in the duration of the excitatory state at one electrode may produce fundamental alterations in the electrocardiogram, while the heart beat, as far as its essential mechanical effects are

concerned, shows no change of practical importance or detectable by any other method.

The passage of impulses along a nerve cannot be detected directly in any other way than by the electrical effect. Einthoven has been able to show the passage of impulses in the vagus nerve when the lungs are distended or collapsed, and also in the depressor nerve when the blood pressure rises in the aorta. Piper has determined the rate of discharge of motor innervation. The method is capable of further extension to reflexes, and possibly the vexed question of the analysis of sounds by the cochlea may be decided.

The electrical changes in secreting glands are more complex than in nerve and muscle, and are not yet completely understood. The main component is undoubtedly connected with the flow of water, as shown by Bradford and myself, and to explain it we may consider briefly the nature of the secretory process in general. The cells possess the same kind of membrane as muscle has, but their impermeability appears to be to certain cations of the cell contents, not to anions, as judged by the sign of the electrical effects. This is, however, a matter of detail. During rest there is formation of complex substances to be used in the act of secretion. This is an automatic process, requiring the supply of energy by oxidation, and comes to an end by mass action of the products. When secretory activity occurs, two things happen. The stored products are split into smaller molecules, so that the osmotic pressure of the cell contents rises and water is attracted. But simultaneously that end of the cell in relation to the duct becomes permeable. Water flows out, carrying the secretory products. The electrical effect is accounted for in a way similar to that in the case of muscle. But there is also another component of the electrical change, smaller in magnitude and opposite in sign to that associated with the permeability effect. This is seen when the sympathetic supply to the submaxillary gland of the dog is stimulated. Its origin is unknown.

Sweat glands in the skin show the phenomenon of an electrical change. They are readily excited reflexly and, as Tarchanov and Wells and Forbes have shown, also by psychical events. It seems practically certain that the "nerve-leaks" of Baines are due to local activity of sweat glands. These may possibly be of use in the location of pathological processes in the central nervous system, but there are simpler means of detecting local sweating.

Waller has investigated the changes of resistance in the skin, which are associated with mental states, and proportional to the degree of the emotion. The phenomenon is called by him the "emotive response," and he is inclined to doubt its origin from sweat glands. But the evidence derived from atropine is not very satisfactory. The way in which the decreased resistance is produced in active cells has been described above. The reaction may be found useful in the process of "psycho-analysis" and has been used by Wells and Forbes in psychological investigations.

Photochemical reactions are associated with electrical changes, and the phenomena in the retina have been the object of much attention. They are complex in the vertebrate retina, probably on account of its mixed structure. In the cephalopod the effect of light is simple. When better understood, they will doubtless help to explain the retinal processes. The action of light on the green leaf has been shown by Waller to be accompanied by electrical effects. This again requires further work.

Finally, the process of inhibition in heart and smooth muscle may be referred to. Since increased activity means increased negativity, it is clear that decreased activity should be associated with decreased negativity. This was shown by Gaskell to occur in the tortoise auricle on stimulation of the vagus. "In the ureter, it appears that a wave of inhibition precedes that of contraction, which propels the drops of urine downwards, a process similar to that described by Starling and myself in the case of the intestine. This would naturally result in a double electrical effect at each electrode and a complicated curve of the total effect, such as is described by Orbeli.

At the twenty-ninth annual meeting of the Association of Medical Colleges in Chicago a new constitution and by-laws were adopted, the principal modifications being in the high school and college requirements for admission to medical schools.

Lettsonian Lectures

ON

JAUNDICE: WITH SPECIAL REFERENCE TO TYPES OCCURRING DURING THE WAR.*

By WILLIAM HENRY WILLCOX, C.B., C.M.G.,

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LECTURE III.—PART I.

EPIDEMIC CATARRHAL JAUNDICE.

THIS disease was very frequent in the Dardanelles campaign, in Egypt, and in Mesopotamia, and there is no doubt that it occurred frequently also in other war areas. The symptoms and course of the disease form a characteristic clinical picture, and undoubtedly constitute a special type of jaundice the exact pathological cause of which has not been ascertained.

I have had the opportunity of studying closely a very large number of cases, particularly in the Dardanelles and Mesopotamia, and the advantage of the co-operation of distinguished bacteriologists who have made the most painstaking and thorough examinations. From my own clinical observations, and from the results of these bacteriological examinations, I have not the slightest doubt that the epidemic catarrhal jaundice was a special entity, entirely distinct from spirochaetosis icterohaemorrhagica.

The first published clinical description of the disease was by Lieutenant E. B. Gunson, R.A.M.C., and Lieutenant I. W. C. Gunn, R.A.M.C.,¹ who gave an interesting and accurate account of a series of cases in British troops at Alexandria in June, July, and August, 1915, nearly all from a single camp. In July, 1915, at a general hospital in Alexandria, the late Lieut.-Colonel Lister, R.A.M.C., who was in command of the Medical Division, kindly showed me a number of these cases, and I had the opportunity of examining them. I should like to take this opportunity of expressing the great admiration and regard of all who knew him for the skill, sympathy, and devotion shown by Lieut.-Colonel Lister in the splendid medical work which he carried on unremittingly in Egypt even when stricken himself by an incurable malady which later called him from us.

On February 26th, 1916, an account of the epidemic jaundice in the Dardanelles was published by myself.²

In 1916 Major R. S. Archibald, R.A.M.C., and his fellow workers, Captains Hadfield, Logan, and Campbell, in their bacteriological reports³ from the Mudros laboratories, gave a full account of a great deal of careful work carried out on the cases of jaundice at the Dardanelles. On April 7th, 1917, a paper on the pathology and etiology of this disease was published⁴ by Lieut.-Colonel C. J. Martin, A.A.M.C. Hurst also refers⁵ to the disease in his book on the *Medical Diseases of the War* (1917).

In Mesopotamia I have studied closely a very large number of cases of this type of jaundice, and the most thorough and exhaustive bacteriological investigations have been carried out by Major Mackie, I.M.S., Major Gloster, I.M.S., Major Stevenson, I.M.S., and Captain Short, I.M.S.

SYMPTOMS.

The patient had usually some abdominal discomfort for a few days, associated with anorexia, nausea, perhaps occasional vomiting, and either diarrhoea or constipation. Sometimes there was a history of diarrhoea or dysentery during the previous few weeks.

Pyrexia of a mild type would now generally set in, associated with some chilliness and occasionally some shivering. The tongue was moist and often furred, but might be quite clean. Vomiting often occurred at this stage, and slight headache was common. "Pains all over" were sometimes mentioned in the early stage of pyrexia. Abdominal discomfort was usually present in the hepatic and epigastric regions. The pyrexial period in some cases lasted only one or two days, but was generally

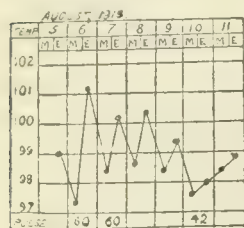
* Delivered before the Medical Society of London, April-May, 1919.

from two to four days; rarely it lasted longer. (See charts.)

About the third or fourth day from the onset of pyrexia jaundice occurred; it was slight at first, but gradually deepened and became of the ordinary obstructive type, with pale stools and bile-stained urine. The jaundice usually attained a maximum in about ten days and then gradually subsided, but the duration and intensity of this symptom varied.

Definite uniform enlargement of the liver could be made out by palpation as the jaundice developed, slight tenderness being present. Some cases showed definite swelling in the gall

CHART 1.—Jaundice appeared on August 9th.



bladder region, and in about 10 per cent. of cases palpation afforded indications of enlargement of the gall bladder.

Enlargement of the spleen accompanied that of the liver, and the organ could usually be felt extending on inspiration for half an inch or more below the left sub-costal border. With the subsidence of the jaundice the enlargement of the liver and spleen gradually diminished.

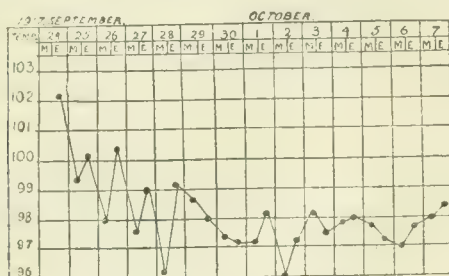


CHART 2.—Jaundice was present on September 24th; on the 26th, liver and spleen enlarged, right heart dilated.

During the pyrexia the pulse was quickened to 80 or 90, but with the onset of jaundice it became slow—about 50 in some cases.

With pyrexia lasting three or four days or more a definite increase in the deep cardiac dullness could be made out about the third day, and the interesting feature was that the dullness was mainly on the right side; on percussion in the fourth intercostal space to the right of the sternum the dullness extended one or two inches to the right of the sternal border. The late Dr. D. B. Lees, to whose masterly teaching of physical signs so many of his pupils will ever be indebted, pointed out this phenomenon in cases of acute rheumatism many years ago. I know of no acute disease other than these two in which specific dilatation of the right side of the heart occurs without any lung involvement or mechanical causes to produce back-working. This cardiac condition in epidemic jaundice was first pointed out to me by Lieut.-Colonel Lister in Alexandria, and I have since confirmed it by observation in a large number of cases both in the Dardanelles and Mesopotamia. With rest in bed no symptoms of cardiac embarrassment occurred. The cardiac dilatation usually lasted for four or five days only, and then subsided.

The urine in the jaundice stage showed the presence of bile as in obstructive jaundice. Albumin and casts were absent, save in those exceptional cases developing icterus gravis. The duration of the obstructive jaundice stage was not sufficiently long for such skin complications as pruritus, boils, etc., to appear. Anaemia, herpes, congestion of the conjunctivae, and haemorrhagic symptoms were not observed, and special nervous symptoms other

than asthenia and depression did not occur in the ordinary type of case. A secondary rise of temperature in the course of the illness was very uncommon.

It is important that a correct perspective should be obtained of the disease "epidemic catarrhal jaundice." I have very careful notes of sixty-four consecutive cases at the Officers' Hospital, Baghdad, made by Captain Woodhouse, R.A.M.C., who was in charge of them. I saw these patients in consultation with him many times, and can confirm the careful accuracy of his records. Of these cases sixty-three were of the mild type described above. I will quote the notes of three of them taken at random.

CASE I.

Lieutenant F. Diarrhoea and abdominal discomfort for four days, then slight fever, reaching 102.5° F. on the sixth day, and since then normal temperature. On the eighth day tongue lightly turred; icteric tint of skin and sclerotics now noticed. The deep cardiac dullness was increased to right, liver enlarged, tenderness over gall bladder. Urine contained a considerable amount of bile, stools clay coloured. He made an uninterrupted recovery and was convalescent on the twenty-sixth day.

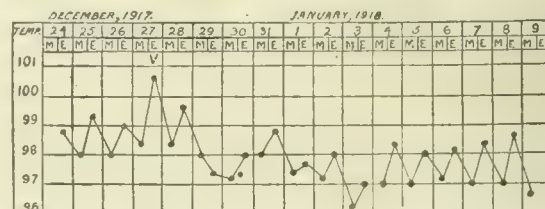


CHART 3.—Jaundice appeared five days before admission to hospital. V. Vomited.

CASE II.

Lieutenant G. Nausea and feeling of illness with slight diarrhoea for seven days; he passed some mucus on the seventh day, but no dysentery organisms were found on examination. Jaundice appeared on the sixth day. On examination on the tenth day liver enlarged and tender with tenderness over gall bladder, spleen palpable, urine contained bile, and stools were pale. Marked anorexia, depression, and pain and tenderness over the liver continued up to fourteenth day; on this day he vomited after an enema. The liver and spleen now gradually diminished to normal size and he made an uninterrupted recovery, being transferred down stream on the twenty-sixth day of the illness.

CASE III.

Captain J. Nausea and occasional vomiting, with constipation for four days, then slight fever. Jaundice appeared on seventh day. The liver and spleen were slightly enlarged (tenth day). Heart not dilated. Jaundice commenced to disappear on the thirteenth day and on the twenty-third day patient was convalescent.

Usually cases of epidemic catarrhal jaundice gave rise to no anxiety, though I have occasionally seen much hepatic enlargement in which most persistent vomiting occurred from the eighth to the twelfth day, and in one case rectal feeding had to be adopted.

In patients with marked hepatic and splenic enlargement convalescence was slow, and they were not usually fit for duty within two or three months.

TREATMENT.

The treatment of the ordinary type of case consists of rest in bed and light diet, with saline aperients and an alkaline mixture of potassium citrate and sodium bicarbonate. It is advisable to give oranges, and drink made from fresh lemon juice as antiscorbutics. In the treatment of such conditions as jaundice, the enteric group, or dysentery requiring special diet for a long

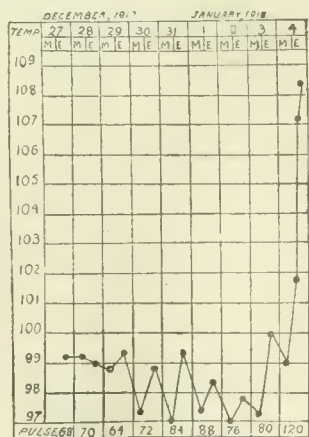


CHART 5.—Jaundice before admission. Patient vomited on December 31st; the following day he was dull and morose; was delirious on January 2nd; coma supervened on January 3rd, and he died on January 4th. Post-mortem: Acute yellow atrophy of liver.

period in hot climates, the rapidity with which scurvy or vitamin deficiency diseases will develop must always be borne in mind.

In the Dardanelles I called attention⁶ to the development of multiple neuritis of beri-beri type in several cases of epidemic jaundice. This was undoubtedly due to the rigid dieting on sterilized foods, no fresh food being available for such cases. Calomel in small repeated doses should never be given in cases of epidemic jaundice, because, as was, I think, first pointed out by me,² there is here a great liability for the development of severe mercurial stomatitis. I saw several such cases in the Dardanelles. A single dose of calomel may be given without danger, but it and other powerful purgatives are best avoided.

Development of "Icterus Gravis" Symptoms.

Although, as already described, epidemic catarrhal jaundice usually runs a mild course without any serious symptoms, one can never be quite free from anxiety as regards a patient. In rare cases at some period of the jaundice stage acute toxic symptoms may develop exactly as in "icterus gravis," and almost invariably death ensues within about two or three days of the onset of the grave symptoms. I have seen several such cases and have notes of fifteen, on most of which careful *post-mortem* examinations were made.

The grave symptoms usually occurred a few days (about ten) after the appearance of the jaundice, in one case two days, in another four, while in one case the interval was as long as twenty-nine days.

There appeared to be no relation between the depth of the jaundice and the development of the grave toxæmia. Some cases were not deeply icteric at the onset of the toxæmic symptoms, but the jaundice increased as these developed. The preliminary symptoms of the illness were exactly like those of the ordinary type of the disease and gave no warning of the future grave development. In one case the symptoms of the preliminary stage of the jaundice were so slight that the patient did not report sick.

CASE I.

In January, 1917, when our troops were busily engaged in the fighting around Kut, preceding the crossing of the Tigris at Shumram and advance to Baghdad, an Indian soldier was sent from the front line to a field ambulance because of the development of curious mental symptoms. He had been found wandering about naked though the weather was very cold, and his mental condition was quite abnormal. I saw him on admission when he was markedly jaundiced; he had slight delirium and the liver dullness was considerably diminished. He rapidly became comatose and died in forty-eight hours, from typical symptoms of acute yellow atrophy of the liver.

This was undoubtedly a case of epidemic catarrhal jaundice in the course of which icterus gravis developed. I quote three other very interesting cases on which careful pathological examinations were made:

CASE II.

Gunner R. had had jaundice for eight days with the usual symptoms of the epidemic catarrhal type, temperature normal.

At 10 a.m. on the ninth day, coffee-ground vomit with streaks of blood, tremors, and drowsiness. At 5.30 p.m. he was delirious and shrieking; at 6 p.m. comatose, Cheyne-Stokes breathing, knee-jerks present, extensor plantar reflex, and incontinence. The liver dullness was much diminished, measuring only 2½ in. vertically; deep coma persisted. On the morning of the eleventh day the temperature rose suddenly from normal to 104°, and death occurred.

Post-mortem Examination.—Liver small, yellow, with small dark-reddish areas. Kidneys: epithelial degenerative changes. Petechial haemorrhage in the pyloric portion of the stomach, and small haemorrhages on the wall of the intestine, in the pleura, pericardium, and lung tissue.

Major Gloster, I.M.S., made careful microscopic examinations and animal experiments for spirochaetes, with negative result.

CASE III.

Lieut. S., taken ill December 24th, 1917, with slight fever and the usual symptoms of epidemic catarrhal jaundice. On December 28th temperature normal, liver enlarged and tender, spleen palpable and slightly tender, tongue furred, constipated, definitely jaundiced, urine bile-stained, mental condition normal. Several attacks of vomiting without blood occurred during the next three days, but on January 2nd, 1918, the vomit contained streaks of blood and was bile-stained. Jaundice was now deep. He was very restless and maniacal during last night and this morning. On January 3rd the vomit was the same. Epistaxis in morning, liver dullness much diminished, being only 2 in. vertically; knee-jerks increased. Very restless and noisy. Next morning he became comatose, urine contained albumin, bile, and a few red corpuscles; no spirochaetes found in urine or blood. At 5 p.m., Cheyne-Stokes breathing, extensor plantar reflex; at 10 p.m. the temperature rose suddenly to 109°, and death occurred at 10.30 (Chart 5).

Post-mortem Examination (by Lieut.-Colonel Ledingham, R.A.M.C., and Major Gloster, I.M.S.).—Liver 3½ oz., stained yellow. Spleen enlarged and soft; kidneys yellowish. Small haemorrhages in pleura, pericardium, omentum, mesentery, and in lungs. The wall of stomach and duodenum contained petechiae, and their contents were blood-stained. The liver showed almost complete destruction of hepatic cells in blocks; only isolated islets of cells remained; in parts total necrosis of all but trabecular tissue. The kidney showed extensive degeneration of tubular cells; the pancreas, early but definite cell necrosis, with shrinkage and loss of outline of the cells that remained; in some places great reduction in number of cells.

Microscopical examination and animal experiments for spirochaetes of liver, kidney, and spleen were negative.

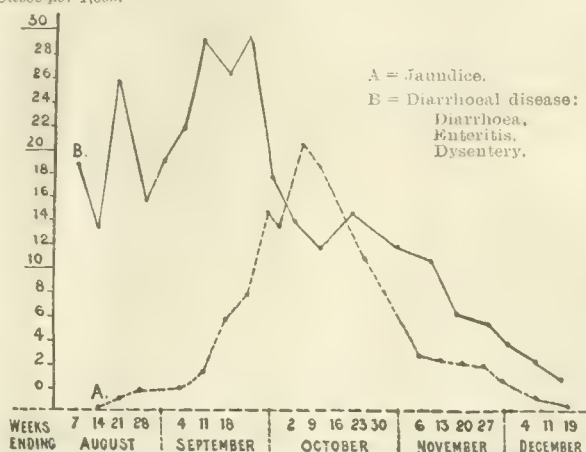
CASE IV.

I am indebted to Captain F. B. Ambler, I.M.S., for the clinical and *post-mortem* notes of this case.

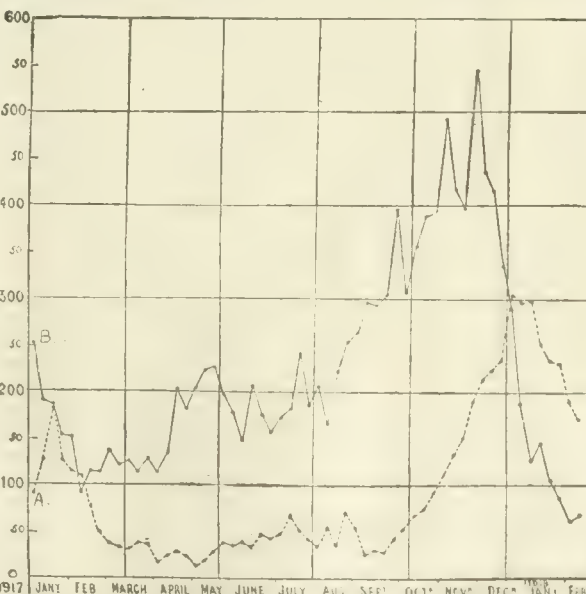
An Indian was admitted to hospital on October 6th, 1917, with jaundice of the usual type; temperature remained normal until just before death. On October 10th he was constipated, the liver enlarged, tongue furred. Next day he had incontinence, was noisy and irritable, and vomited some blood-stained fluid; pulse 92; blood culture negative; became unconscious in the evening; knee-jerks now increased. Ankle clonus and extensor plantar reflexes present. On October 12th the jaundice was deeper; liver dullness very much diminished; coma continued. Temperature rose to 101° at 6 p.m., pulse 140. Death occurred at 7 p.m.

Post-mortem Examination.—Petechial haemorrhages in gall bladder, mesentery, and omentum. Spleen slightly enlarged. Liver very small; the surface on section was of dirty khaki colour, with small raised reddish patches like cirrhotic areas scattered through. Some larger reddish patches were also present.

Cases per 1,000.



CURVE 1.—Showing the incidence rate of epidemic jaundice and diarrhoeal diseases in the Dardanelles, per 1,000 troops in one division, for the period August 7th to December 19th, 1915.



CURVE 2.—Showing incidence rate of epidemic jaundice and dysentery in Mesopotamia, 1917-18. A. Jaundice. B. Dysentery.

From these accounts it will be seen that the terminal fatal symptoms in epidemic catarrhal jaundice are closely identical with those of delayed chloroform poisoning and of the other toxic liver poisons. The *post-mortem* signs also are exactly identical. Atrophy of the liver or extensive degeneration are the pathological results of either condition.

Etiology.

Epidemic catarrhal jaundice had its maximum incidence in Mesopotamia in December and January; in the Dardanelles in October. In both areas there was a close association with the incidence of "dysentery"—that is, enterocolitis affections. Thus the charts for the two diseases in both areas indicate that the jaundice curve attained its maximum about three weeks after that of dysentery. (See Curves 1 and 2.)

There must be an etiological association between the two diseases—for example, food or water infection—and it is likely that the enterocolitis resulting from a "dysenteric" affection in some cases prepared the way for the infection causing epidemic catarrhal jaundice. This view is borne out by the symptomatology of the disease, for, as we have seen, there was commonly a previous history of diarrhoea or dysentery in the jaundice cases, and also it was not uncommon for jaundice to develop in patients actually suffering from dysentery in hospital.

The epidemic character of the disease is beyond doubt, and in the Dardanelles and in Mesopotamia there were numerous instances of a large percentage of cases occurring in one unit. The danger of infection from person to person does not seem to be greater than in enteric fever, for instances of infection from patient to patient in hospital were not common. The epidemic character appeared to be due to a common cause rather than a spread from person to person. No evidence of air-borne infection was obtained from the study of the disease in the Dardanelles and in Mesopotamia.

The association of the curves for epidemic catarrhal jaundice with those for dysentery, diarrhoea diseases, and enteric group infections, indicate an intestinal origin for the infection.

In Mesopotamia jaundice was wisely made a notifiable disease, and records have been kept for 1917 and 1918. In 1917 there were 1,538 cases with 0.6 per cent. deaths in British troops, while in Indian troops there were 2,634 cases with 0.3 per cent. deaths, the gross mortality being 0.41 per cent. These low mortality figures are in striking contrast to the similar figures from spirochaetosis icterohaemorrhagica, or the so-called Weil's disease.

It is interesting to note that an epidemic of jaundice closely identical with the epidemic catarrhal jaundice above described was reported⁷ by Captain G. C. Gray, R.A.M.C. In the Cambridgeshire area between April and November, 1917, seventy cases were investigated. In one instance four cases occurred in the same house, in another three, and there were four instances of two cases in the same house. No deaths occurred. Also Dr. S. Harthill described⁸ a similar epidemic occurring in Hertfordshire between October, 1917, and March, 1918. He gives details of fifteen cases, none of which were fatal.

Bacteriology.

In the Dardanelles cases Lieut.-Colonel C. J. Martin, Major Archibald, and Captain Campbell, R.A.M.C., made numerous blood cultures in cases of jaundice. In no case of clinical "epidemic catarrhal jaundice" was any specific organism found. Several cases yielded enteric or paratyphoid organisms, but these subsequently ran the typical clinical course of these diseases. Examinations of the faeces and urine gave no definite results. Similar investigations were carried out in Mesopotamia by Major Mackie, I.M.S., Major Gloster, I.M.S., and others, with like result.

Martin and Hurst investigated some of the Dardanelles cases by withdrawing fluid from the duodenum with Einhorn's evacuator, but no definite results were obtained.

In six out of eight cases of jaundice a bacillus of the *faecalis alkaligenes* group was obtained, but this organism was obtained also in three out of four from healthy patients. Some of the cases showed other bacilli and cocci in scanty numbers.

In the Dardanelles Sarraillé and Clunet⁹ found on blood culture organisms of the paratyphoid group in the jaundice cases. In some of these paratyphoid B was

found; later they found an organism which did not give the agglutination reactions for paratyphoid A or B, and which they named paratyphoid D. These observations have not been confirmed by our bacteriologists.

In the Dardanelles Martin made numerous examinations for spirochaetes with negative result, but was unable to carry out animal experiments as guinea-pigs were not available.

In Mesopotamia the most careful observations on cases of epidemic catarrhal jaundice in all stages of the illness were made by Lieut.-Colonel Ledingham, R.A.M.C., Consulting Bacteriologist to the Force, Major Mackie, I.M.S., Major Stevenson, I.M.S., and Captain Shortt, I.M.S.

The blood was examined in the early stages, and the urine also in the later stages. Liver punctures were made during life, and the organs were examined *post-mortem*. In no case was the *Spirochaeta icterohaemorrhagiae* found, though guinea-pig experiments were freely made in addition to the other methods of investigation. In two cases during life Mackie found organisms of the *B. coli communis* type—in one from liver puncture, in the other from a catheter specimen of urine. In fatal cases organisms of *B. coli communis* type were frequently found in the liver, but may have been *post-mortem* contaminations.

It has been conclusively proved that in the epidemic catarrhal jaundice of Mesopotamia the disease was not caused by a spirochaetal infection, and the exact similarity of the Dardanelles cases to those in Mesopotamia justifies the same conclusion for them.

Neither in the Dardanelles nor in Mesopotamia was there any association whatever between occurrence of the disease and the presence of rats. Indeed, in Mesopotamia numerous cases of jaundice occurred in camps in the desert where no rats existed for miles around. Major Mackie collected with some difficulty a number of rats from towns in Mesopotamia, and conducted careful guinea-pig experiments with them, but in no case did he find any evidence of a spirochaetal infection.

A specific organism causing "epidemic catarrhal jaundice" has not yet been found. The symptoms and etiology point to an infection by the intestinal tract, and there is, no doubt, a general blood infection the duration of which is probably very short.

It is not surprising that blood culture examinations have been negative, because, as has been pointed out, when jaundice develops—that is, the earliest time at which a diagnosis can be made—the temperature is either declining or has fallen to normal, and a blood culture examination would be expected to prove negative. In enteric it is well known that positive results from blood culture are usually yielded only in the early period (first eight days or so) of the pyrexia, so that in these cases of jaundice with a short pyrexial period it is probable that blood cultures have been taken too late for a positive result. So few cases prove fatal that opportunities of *post-mortem* examinations are rare, and in the few cases in which death occurs it is usually at such a late period of the illness that bacteriological examinations are rendered difficult by death agony and *post-mortem* contaminations.

I believe that epidemic catarrhal jaundice is probably due to an intestinal infection causing duodenitis and a catarrh of the bile ducts. The area around the ampulla may be mainly affected, and in some cases there may be produced an ascending catarrh causing cholangitis. In either case obstructive jaundice may result.

The above train of events is no doubt associated with a transient general blood infection, of which the causal organism has yet to be proved. It is possible that, in some cases at any rate, the catarrhal condition of the duodenum and bile ducts may be caused by organisms which are found in health in the intestinal tract, of the type of *B. coli communis* or *B. faecalis alkaligenes*.

It is well known that a common "cold in the head" or "nasal catarrh" may be caused in an individual by organisms which are found in his nasal passages in conditions of health. Thus one of the organisms present—for example, the pneumococcus or the influenza bacillus—may become for a time pathogenic and set up nasal catarrh and cause nasal obstruction. It is quite possible that a similar condition of things may occur in epidemic catarrhal jaundice.

Epidemic catarrhal jaundice as above described is not a new disease. It has probably occurred in most campaigns.

Thus in the American war 22,509 cases of jaundice occurred with 161 deaths, and in the South African war 5,648 cases with a small mortality. It is probable that these cases were mainly of the epidemic catarrhal type.

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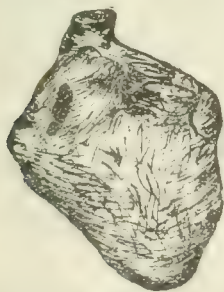
Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TRAUMATIC RUPTURE OF THE HEART WITHOUT FRACTURE OR EXTERNAL LESIONS.

A GURKHA rifleman, aged 19, previous chest measurements 32 to 34, height 5 ft. 1 in., was brought in dead to hospital on account of the following accident: Whilst engaged in fire practice in the regimental lines he was pulling the wheeled fire pump when, coming downhill, it ran away with him, and he was crushed between a stone wall and the cross-bar handle of the pulling shaft, which apparently caught him across the middle of the chest. He was seen to fall dead at once.

Post-mortem Examination.—Externally there was some congestion of the right eye, and a small cut and contusion on the right side of the forehead. No other contusions or lesions were found anywhere and no fractures or haemorrhages, though the saliva was tinged with blood, possibly from some undiscovered cut in the mouth. The base of the skull was not fractured; there was marked pachymeningitis along the superior longitudinal sinus. The abdomen was natural; the ribs were unfractured, but were very pliable, so that the chest could be easily compressed. The



lungs were natural. The pericardium was full of blood but undamaged.

The heart was very small, being only about 3½ in. long and 3 in. broad. No scales were available at the time for weighing. The valves and heart muscle were apparently natural, and there was no trace of aneurysm or old disease. In the wall of the right auricle, between the right coronary artery and the entry of the inferior vena cava, was a small rent measuring about ¾ by ½ in., as shown in the diagram.

The only explanation I can offer of this curious accident is that at the moment of impact the man may have taken a deep inspiration, engorging the right auricle, which then burst on sudden compression through the costal wall by the cross-bar of the shaft of the fire pump.

A. C. L. BILDERBECK,
Captain I.M.S.

INTRAUTERINE CRYING.

A FEW days since I was called to attend a case of labour in a multipara. Progress was slow, and I injected pituitary extract twice—1 c.cm. doses two hours apart. I then dilated the os as fully as possible, and as the head still remained above the outlet of the brim I decided to use forceps.

Having punctured the membranes the fluid escaped

freely, and a short time afterwards I was surprised to hear muffled but unmistakable crying. The patient being uncovered and already prepared and under chloroform, I applied forceps, but the head being high and moving freely the blades slipped off. During the interval before the forceps were reapplied the crying was again heard quite clearly, and was remarked upon by the husband and nurse.

It was about six minutes from this time that the head was finally delivered, the blades having been previously removed to prevent laceration. The cord encircled the neck twice. The child—a girl—gasped, was easily resuscitated, and cried lustily. Later considerable fluid was removed from the air passages. The child did well.

Ponoka, Alberta, Canada.

MELVIN GRAHAM, M.B.

Reports of Societies.

THE BACTERIOLOGY OF PYORRHOEA.

At the meeting of the Section of Odontology of the Royal Society of Medicine on May 26th Mr. J. G. TURNER, F.R.C.S., and Mr. A. H. DREW, D.Sc., gave an account of an experimental inquiry into the bacteriology of pyorrhoea. It was described as a continuation of a previous communication on the general microbiology of pyorrhoea, and the further results were now reported because Dr. Drew was about to resume his duties as bacteriologist to the tuberculin department of the Federal Serum Institute, Melbourne. The methods by which the microscopical preparations were made during the present research were fully described, and the results were stated under the following headings:

1. *Living Pulp.*—The living pulp appeared to become readily infected, and such infection was not necessarily associated with caries in the ordinary acceptation of that term. A preparation from the pulp of a bicuspid was demonstrated, showing a diphtheroid infection; in this case there was associated chronic pyorrhoea, but it was thought improbable that it was concerned in the pulp infection. In another case infection by two distinct types of diphtheroids was demonstrated, in others mixed infections by diphtheroids, streptococci, and at times staphylococci, and spirochaetes. Mixed infections were always associated with caries to a greater or less extent, and in at least one instance the vessels of the pulp were found to contain organisms (diphtheroids and cocci).

2. *Dentinal Tubules.*—It was certain that the dentinal tubules were frequently infected from the pulp cavity. While probably any organisms in the mouth could infect pulp, those most usually associated with dentinal infections seemed to be comparatively few in number—namely, diphtheroids, cocci, and spirochaetes.

3. *Cementum.*—Infection of the cementum was frequent, and three routes could be distinguished—(a) from the pulp cavity and tubules; (b) through the periodontal membrane; and (c) from surface caries. There was evidence that cementum could be infected from a living but infected periodontal membrane. No section showing actual invasion of the cementum by bacteria from the dentinal tubules had been obtained, but one showed its near approach. Another showed surface caries of the cementum, with a thick growth of bacteria on the surrounding cement surface. This layer of bacteria was always found on the denuded roots in pyorrhoeal pockets, and explained the difficulty of treating pyorrhoea without thorough cleaning of all such denuded roots.

4. *Gums.*—In chronic cases bacteria were invariably present in the gums; the most frequent were diphtheroids, streptococci, and staphylococci. In one instance a heavy infection with a sporing bacillus was observed; the gum showed chronic fibrous thickening; there was no pocketing by destruction of the alveolar dental membrane but only by swelling of the gum, nor was there any ulceration; apparently the bacteria gained entrance through a merely inflamed surface. A section from the gum flap overlying an erupting wisdom tooth in a man of 48 showed dental sepsis at its earliest moment—namely, just as the gum uncovered the tooth and left the crypts open to infection. Here a pure diphtheroid infection was to be seen running up the lymphatics.

5. *Granulomata*.—Sections of granulomata from the apices of teeth invariably showed the presence of micro-organisms.

6. *Bone*.—Sections through the jaws with teeth *in situ* from cases of advanced pyorrhoea showed heavy infections of the bone, a striking fact being the presence of organisms within the Haversian systems. In several such cases the same organisms (diphtheroids and cocci) were demonstrated in the stomach wall, but the total number of cases examined was not yet large enough to allow it to be stated that the condition was invariably present.

The authors held that the result of their investigation was to establish the immense importance of the mouth as a potential source of disease, but as the research was incomplete they did not presume to draw definite conclusions. They called attention to the striking fact that in all chronic cases any indication of phagocytosis was absent.

Reviews.

INDUSTRIAL PHYSIOLOGY.

IN his book on *The Human Machine and Industrial Efficiency*,¹ Professor F. S. LEE publishes the substance of two lectures recently delivered at the Harvard Medical School on "Industrial efficiency and the war." Professor Lee is well known in this country for his investigations into the physiology of fatigue, and he is likewise the chairman of the subcommittee on fatigue in industrial pursuits of the National Research Council, which has been making inquiries into the conditions of labour in certain of the munition factories on behalf of the public health service of the United States. He is therefore exceptionally qualified to instruct us on the subject of industrial fatigue and the methods of avoiding it. His book does not attempt much detail; it is a brief summary of available information, put together in a very readable form, and if only the managers of all industrial concerns in this country could be induced to read it, and mentally digest its contents, they could not fail to acquire information and guidance of the utmost value to them in the treatment of their employees.

Professor Lee's main thesis is best indicated by the parallel which he draws between industrialism and medicine. He points out that in both subjects there is a conflict between the old and the new—between empiricism and tradition on the one side and science on the other. In the study of medicine science has been rapidly coming to the fore, owing to the development of the experimental method, but industrialism is far behind in this respect. Still, it is becoming increasingly clear that in all that pertains to the efficiency of the worker the physiological point of view is the only correct one, and that industry must be organized on a physiological basis before the highest degree of efficiency can be secured. A science of industrial physiology must come into being—a science of the human machine in industry—and this science must be largely developed in the factories and workshops themselves. They must constitute the laboratories in which much of the observation and experiment of the future must be made, though supplementary investigations will have to be carried out in our regular physiological laboratories.

In seventeen brief chapters Professor Lee indicates the various directions which, in the light of recent research, lead towards increased efficiency and productivity and diminished fatigue. He points out, first, that the qualifications of workers should be determined so far as possible by exact tests, and workers should be assigned to tasks in accordance with their qualifications. He describes recent investigations, by a spring balance test, of the muscular strength of various groups of munition workers, and shows that the average industrial woman has less than half the physical strength of the average industrial man. The women employed on the heaviest job investigated averaged only two-thirds the physical strength of the men employed on their (the men's) lightest job. In other words, women are very seldom adapted to the types of work usually assigned to men, though in certain other qualities, such as delicacy of the senses, they excel them. The

spring-balance test was likewise used for investigating fatigue, and it showed that workers engaged in the more strenuous operations suffered some diminution of strength at the end of the day's labour, though in operations requiring moderate exertion only the weaker workers showed an effect.

Other methods for investigating the onset of fatigue are described, but the only one of practical value at present available is the determination of output. Measurements of hourly output usually show that during the first hour or two of work there is an increase of output which is usually considered a "practice-effect," or increase of working power due to better neuro-muscular co-ordination. This is followed by a declining output, the result of fatigue. Very striking evidence of such fatigue was obtained by Professor Lee in certain of the night workers at a munition factory. The men, who were drilling a hole in fuses, worked continuously for 5½ hours, and then, after a twenty minutes interval, for 6½ hours. Their output kept up well until the last two hours, when it fell gradually almost to zero. This was due largely to the workers being so fatigued that they had to knock off work altogether, and in fact at one time a fifth of them were found to be actually asleep. There can be very little doubt that if the working hours of these men had been reduced by at least two per shift, and their meal interval had been increased to an hour, their total output would have been increased rather than diminished, and much unnecessary fatigue have been avoided.

The length of the working day is discussed in some detail, though the discussion is confined to the limits of twelve and eight hours. The statistical evidence adduced is all in favour of the shorter hours as against the longer, and points to the eight-hour working day as offering the best condition for high productivity, but Professor Lee is careful to indicate that the facts at present available do not justify the conclusion that an eight-hour day is advisable universally in the industrial world. It is a scientific question to be decided only by prolonged observation and experiment. It is bound up with other matters, such as the determination of the most suitable length of work spells and of rest periods.

The much-debated subject of "scientific management" is discussed, and Professor Lee concludes that whilst this principle is to be highly commended for what it has accomplished in organizing the administration of industry and improving the material equipment with which industry works, it falls far short of an ideal in its dealings with the human machine.

Other chapters in the book deal with limitation of output, overtime, industrial accidents, labour turnover, food, and welfare work, and afford an admirable summary of our present-day knowledge of these subjects.

H. M. V.

FEVERS IN THE TROPICS.

IN the preface to the third edition of his work, *Fevers in the Tropics*,² Sir LEONARD ROGERS states that the section on kala-azar has been largely rewritten, and that nearly every section has been extensively revised, and most of them arranged so as to give the history, geographical distribution, etiology, and prophylaxis before the clinical section. Special attention has been devoted to the treatment of those diseases for which drugs, believed with more or less justification to be specific, are available, including kala-azar, trypanosomiasis, malaria, and amoebic hepatitis. Recent work on typhus has been included, and there are short articles on Oroya fever, on infective jaundice, and on "trench fever," regarding which important advances have recently been made. The historical introduction and the article on epidemic dropsy, which is now generally considered to be beri-beri, have been omitted, and the section on blood examination has been reduced and distributed under the appropriate sections, because the author believes that the improved teaching of tropical medicine has rendered a separate section no longer necessary. The section on liver abscess has also been omitted, as it has appeared in the author's book on dysenteries, where it finds a more appropriate place.

The great value of the book is due to the fact that it is

¹ *The Human Machine and Industrial Efficiency*. By Frederick S. Lee, Ph.D., LL.D., Dalton Professor of Physiology in Columbia University, etc. London: Longmans, Green and Co. 1918. (Cr. 8vo, pp. vii + 119; 14 figures. 6s. net.)

² *Fevers in the Tropics*. By Sir Leonard Rogers, Kt., C.B.E., M.D., F.R.C.P., F.R.O.S., F.R.S., Lieut.-Colonel I.M.S. Third edition. London: Henry Frowde, and Hodder and Stoughton. 1919. (Cr. 4to, pp. xii + 404; illustrated. 30s. net.)

largely a record of Sir Leonard Rogers's own work. As was to be expected, kala-azar is very thoroughly treated and due stress is laid upon the value of intravenous injections of tartarated antimony in the disease; a summary of the history of the introduction of this drug by the intravenous route is given. Credit is rightly assigned to Broden and Rodhain, who got over the great difficulty caused by the extremely irritant effect of the salt on the tissues by giving it by the intravenous method. The results obtained by Rogers and others are excellent and appear to justify the application of the term specific curative to the salt. The author expresses the opinion that the soluble potassium and sodium antimonyl tartrates should be given a more extensive trial in trypanosomiasis, but they have as a matter of fact been used extensively, especially in Europeans suffering from that disease; in many instances beneficial effects have not been noticeable and death has not been averted. Most of the Rhodesian cases that have come to England have had this drug, and yet all but one have died. As a warning to those who may consult the book for references on kala-azar and trypanosomiasis, we think it well to say that the lists are defective, owing, perhaps, to omission from the library in which the author has worked. We note also, in the section on amoebic hepatitis, the absence of any remarks on the large amount of work done in dysentery and amoebic disorders generally with the new drug emetine bismuth iodide. The reports of the Medical Research Committee on the subject should be consulted. It is extraordinary how long fallacies and erroneous statements survive, once they have passed into the literature of the subject. For example, Seidelin's bodies still find a place in the chapter on yellow fever, though Wenyon and Low sounded their death-knell as long ago as 1914. Noguchi's latest work on the finding of spirochaetes was published too late for inclusion, but if confirmed it will prove to be very important. The new chapters on trench fever and infectious jaundice, founded on the literature existing at the present time, are good and carefully put together. The name of the spirochaete is *S. icterohaemorrhagiae*, not *icterohaemorrhagica*, by the way. A perusal of the different articles will well repay practitioners of tropical medicine, who will find much to interest them in its pages, and will derive much advantage from coming into contact with the thoughts and methods of so accomplished an investigator as Sir Leonard Rogers.

REVOLUTION BY SYMBIOSIS.

In *Les Symbiotes*³ Professor PORTIER puts forward some rather revolutionary ideas in physiology. All living things, plants and animals, are, he maintains, constituted by the association of two different beings. The mitochondrial filaments and granules found in all cells are, according to him, symbiotic bacteria or "symbiotes." The symbiote has two remarkable properties—first, an extreme plasticity which allows an adaptation to very varied conditions, and, secondly, very extensive powers of synthesis, which vary according to the conditions in which it is placed. Bacteria are the only simple beings, all other living things are an association of two. The symbiote comes from without and in certain cases it may be cultivated in external media. As it has become adapted to a living cellular medium it is difficult to accustom it to the ordinary laboratory culture media, at least as far as the higher vertebrates are concerned, but the cultivation is comparatively easy in certain insects. As his whole thesis rests on the cultivability of mitochondrial bodies his bacteriological method must be beyond reproach, and though he is at pains to state his methods fully, yet a sceptic would be more convinced by an ocular demonstration than by the most detailed account of the method.

Certain burrowing larvae of micro-lepidoptera having perforated the cuticle of leaves live in the parenchyma in an absolutely aseptic condition, and their alimentary tube contains neither unbroken cell masses nor bacteria, but when the metamorphosis comes the insect adopts other means of nutrition, and its alimentary canal is full of bacteria and unbroken cell masses. The conclusion is drawn that the bacteria assist in rendering soluble substances refractory to the action of the digestive juices.

³ *Les Symbiotes*. By Paul Portier, Maître de Conférences à la Faculté des Sciences de Paris, etc. Paris: Masson et Cie. 1918. (Cr. 8vo, pp. xx + 315; 63 figures, 1 plate. Fr. 5 + 10 per cent.)

Again, in xylophagous larvae the pabulum is quite refractory to digestion, but the bacteria found in them can live on this, and it is the bacteria that are the food of the larvae. The micro-organisms penetrate the cells of the canal, some undergo intracellular digestion and form the food for the cells of the different organs; others are found in the blood; and others, again, in the various cells of the body; but the striking fact is that most of these bacteria are found in the fatty tissue annexed to the genital organs. In such a situation these cultivable symbiotes are to be observed in the whole series of vertebrates up to and including mammals. In the higher vertebrates his cultures prove fertile when made from testicle, ovary and pancreas, especially when the particular organ has undergone a period of intense physiological activity. The organisms obtained have remarkable biological properties: they can be educated to resist dry heat even at 140° C.; they can be dehydrated and heated to 120° C. in sealed tubes of acetone and still be capable of subcultivation; they will resist 1 in 20 carbolic acid for fifty hours, and so on. They are pleomorphic, but can be obtained in coccal or bacterial form according to the medium in which they are grown. They can analyse most complex bodies or synthesize simple substances according to the conditions under which they are put to work.

Portier considers that all mitochondrial bodies, blood platelets, and the bacteria of root nodules of leguminosae belong to the same class of living beings. They constitute the apparatus of elaboration. In metabolism they take the undifferentiated rough products of alimentary digestion, and within each cell elaborate them into the products the cell requires. They allow also of the fecundation and division of cells. By their action, or want of action, may, he thinks, be explained such widely different problems as parthenogenesis, beri-beri, and cancer. Of course, it all turns on the question of the identity of mitochondrial bodies and the resistant sporing bacteria that he finds in his culture tubes. According to the reader's temperament the book will render him anxious to pursue the same experimental investigations or will leave him quite cold.

NOTES ON BOOKS.

DR. RUSK has studied the observations of the best educationists, and has based upon them his system of teaching. In his book on *Experimental Education*⁴ he starts with the physical and mental development of children, and although the power of apprehension and discrimination of colours exists already in infants, he defers his lessons till a later period, when there is evidence of the mental growth of children. That growth, as in the physical state of children, differs according to ages and proceeds in fluctuating periods. With some it is very rapid, then it becomes slower, and there may be even regression. The rate of growth is dependent on innate dispositions, and is as a rule greater in girls than in boys. The nearer the individual approaches to maturity, the more perfect is the mental capacity. Dr. Rusk has studied also the best time and means for learning. The best periods for teaching and learning approximately coincide. The state of the general health is an important factor in both these processes. Dr. Rusk has laid down certain rules which in his opinion facilitate the mastery of school subjects.

⁴ *Experimental Education*. By Dr. Robert Rusk. London: Longmans, Green, and Co. 1919. (Post 8vo, pp. 346. 7s. 6d. net.)

PORTRAIT OF SIR CLIFFORD ALLBUTT.

As announced a few weeks ago, Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the members of the

Association, and subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is prepared to receive subscriptions of one guinea or less.

The first list of subscribers was published in our issue of last week. The following further subscriptions have been received down to Monday evening:

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CORRECTIONS.—The following names were incorrectly printed in the list of subscriptions published last week: Dr. Peter H. Abercrombie (London), Dr. Denis A. Sheahan (Portsmouth), Dr. Graham Steel (Manchester).

British Medical Journal.

SATURDAY, MAY 31ST, 1919.

SCIENCE AND THE STATE.

PROFESSOR KARL PEARSON has done well to reprint an introductory article from a volume of the *Encyclopædia Britannica* (tenth edition) and a lecture delivered in Newcastle eighteen years ago,¹ for these writings contain the message which he delivered to his fellow citizens at the end of the Boer war, the inferences he drew from statistical researches into heredity already executed at that time, his forebodings of evil and his proposals for averting it. To consider how far the accumulations of sixteen years' research and the experience of a greater struggle than that in South Africa confirm or modify his diagnosis, prognosis, and suggested treatment will not be without instruction.

Professor Pearson maintained in 1900 that both physical and intellectual characters of man were inherited, that the fertilities of different stocks were affected by voluntary restriction to different degrees, and that on the average the less worthy members of society alone contributed without reserve to the increase of population. Each of these propositions has been confirmed by subsequent inquiry. Current views as to the mechanism of heredity differ from those of 1900, the method of selecting breeding stock in plants and animals other than man has been affected by recent research; but, so far as human qualities are concerned, nothing has occurred to diminish the value of the statistical conceptions which we owe to Sir Francis Galton and Professor Pearson. The differential fertilities of various stocks, the extreme limitation of fertility amongst those middle class stocks (such as the families of women graduates and most members of the educated classes) which have for long contributed the bulk of our national leaders, has been demonstrated by such data as those of the census of fertility in 1911, the results of which, so far as Scotland is concerned, were published before the war, or the material submitted to the unofficial commission on the birth-rate which reported a few years ago. It is probably true that the birth-rate of all classes has declined, but the class differentiation still exists.

Upon the basis of these propositions, which have since been fully established, Professor Pearson urged that it was important to organize the nation upon a scientific basis, that encouragement should be given to the fitter stocks to multiply, that both general and technical education should be devoted to training the natural powers of observation and reasoning and become more an instrument of drawing out what was best in the pupil and less an affair of cramming him with extrinsic knowledge. For the encouragement of the fit stocks something has been done in the shape of a more enlightened administration of the scholarship system and by a small relief of parenthood in the income-tax-paying classes; but the contribution of the State in these directions has been modest indeed. The able man who devoted himself to pure science or any form of literature other than the production of popular novels and plays during the last sixteen

years received scant encouragement to be fruitful and multiply.

The general defects of our educational system, so far at least as the profession of medicine is concerned, the steady multiplication of subjects to be "got up," the steady diminution of the possibility of acquiring a general view of any subject owing to its entanglement in a thicket of details—these are displayed in Sir George Newman's *Memorandum*. The two portraits in *Hamlet* hardly differ more than the picture of a medical man as Sir George Newman (and all other intelligent men) wishes to see him and the type which the present curriculum tends to produce. Sir Clifford Allbutt's recent remarks upon this point express the opinion of the most experienced and sagacious teacher of medicine in this country, and agree with Professor Pearson's diagnosis in 1900.

Professor Pearson warned the nation—his audience in 1900—that a greater crisis than that then endured might again find us ill fitted to meet it; in the preface to his new edition he observes: "When Armageddon was upon us ignorance in authority had no better use for trained minds than to send them to handle cannon with uncomputed range tables, to fire guns without sights, to man-carry rations where it should have run a light railway, or to speak over single-wire field telephones because it knew nothing of induction. When the history of the present war is really written one of the most curious chapters will be the marvellous manner in which in almost every field the scientific layman has come to the aid of executive ignorance."

Professor Pearson asks whether we are "to return to the old order of things now the war is over, or shall science continue to exercise its proper function in the state in the harder contests of the coming peace?" That in medicine there can be no return to the position of 1914 is evident; economic conditions alone would preclude this. Whether a better system will be evolved depends upon the fulfilment of many conditions, and this is certainly not guaranteed. The recent incident of the professional committees is a straw which shows that we are not sheltered from winds of ignorance which may become tempests.

Men of science have often complained, with reason, that the public press and politicians ignored their doings; but King Stork might not be a good successor to King Log. We find in the columns of the press and in the speeches of politicians unlimited expressions of confidence in the conquests of disease which are to be made by State-endowed research, investigation and organized campaigns; we do not find any enthusiasm for the laborious process of so reconstructing our social life that in medicine, as in other fields of human endeavour, education shall perform the duty which Professor Pearson justly assigns to it—that of drawing out and rendering serviceable to mankind the best intellectual qualities of our youth. Yet upon doing this depends the best, nay, the only hope of the future. The submergence of the ancient civilizations has been thought to be due to the concentration of educated ability within a narrow caste; the collapse of our highly organized and technically efficient foe was hastened by the same fault. Any state system which encourages the withdrawal of the best men from contact, in technical school and university, with the rising generation has the seed of death in it. Those now entrusted with the state control of medical research are we believe fully alive to this fact, but they will need the steady support of the profession as a whole if the just claims of medical education are to be wisely met. A politician who could say that he had secured the whole-time services of a dozen men with popular reputations

¹ *National Life from the Standpoint of Science and The Function of Science in the Modern State*. Cambridge: University Press. 1919. (Or. 8vo, pp. 106 and 97. (Is. 6d. and 2s. net.)

to wage war against cancer would be far more secure of newspaper support than if he devoted the same sum of money to the provision of university scholarships for young biochemists: yet the second course might be much more conducive to ultimate success than the first.

PROPHYLACTIC VACCINATION AGAINST PNEUMONIA.

IN America, where vital statistics show that more persons die from pneumonia than from any other infection and that the rate is slowly increasing every year, the disease has naturally been the subject of very active investigation. In 1913 Douchez and Gillespie by serological methods established the now well known four types, I, II, III, and IV, of pneumococci, of which the first three are spoken of as fixed, though there are atypical forms of type II. As a practical outcome of this work a curative antipneumococcic serum against pneumonia due to pneumococcus type I has been successfully employed,¹ but the immune serums homologous for the other types of pneumococcus have not proved effective. Somewhat different and more numerous types of pneumococci were soon after described in South Africa by F. S. Lister, whose work, probably because it appeared in a not very accessible publication, has perhaps been rather overlooked. In addition he elaborated the prophylactic vaccination against pneumococcic infection among the native workers in the Rand mines, originated by Sir A. E. Wright before the various types of pneumococci were recognized. The good results obtained by Lister from prophylactic inoculation with a vaccine of the three types responsible for 69 per cent. of the cases of pneumonia among the Transvaal natives were referred to in this JOURNAL more than a year ago.²

More recently prophylactic vaccination against pneumonia has been extensively adopted in the army camps in America, and as a majority of the cases of pneumonia in civil life there are of the primary lobar type, which is the form most amenable to prophylactic inoculation, it is probable that there is a wide scope of usefulness before this means of prevention. Early in 1918 Cecil and Austin³ published the results of the prophylactic vaccination of 12,519 men at Camp Upton with pneumococcic types I, II, III. No cases of pneumonia due to these fixed types occurred among the vaccinated men, and the incidence of pneumonia due to pneumococcus type IV and of streptococcus pneumonia was much less in the vaccinated than in the unvaccinated troops. There were, however, two minor drawbacks about the process of vaccination. The first was the necessity, in order to obtain satisfactory protection, of giving three injections to men who had already received the triple vaccine against enteric fever, and ordinary vaccination against small-pox. The second drawback was the occasional appearance of small sterile fluctuating infiltrations at the site of injection, which appeared to be an expression of cutaneous hypersusceptibility. In a report of a special commission appointed by the Surgeon-General to investigate the value of pneumonia vaccine at Camp Wheeler in Georgia, Cecil and Vaughan⁴ point out that these objections can both be obviated by the use of a lipo-vaccine, or an oily, instead of a saline medium of suspension of pneumococci, on the lines of the

antityphoid lipo-vaccine initiated by Le Moignie in France and subsequently adopted in the United States army. As the oily emulsion is absorbed more slowly than the saline, it is possible to give a single large dose without any fear of reactions. Eventually Whitmore, who applied this principle to numerous vaccines, including the pneumococcic, employed cotton-seed oil with 2 per cent. lanolin as less irritating than olive oil to the subcutaneous tissues, and showed that protective bodies do not begin to appear in the blood until the eighth day after vaccination. The dose of the lipo-vaccine is 1 c.cm.; this quantity contains 10 billions each of pneumococci, types I, II, and III. This pneumococcic lipo-vaccine was given to 13,460 men, or 80 per cent. of the strength, at Camp Wheeler in the autumn of 1918. Only 104 men, or 0.7 per cent., had a constitutional reaction necessitating admission to hospital, and 68 per cent. of these were negroes, who seem more susceptible to the pneumococcic toxin, though they only numbered 22 per cent. of the vaccinated. The local fluctuating infiltration at the site of injection was noted in 5 cases only, thus contrasting with its incidence in 152 cases at Camp Upton, where the saline suspension was employed.

The test of this pneumococcic lipo-vaccine turned out to be much more severe at Camp Wheeler than at Camp Upton, for not only were many of the troops raw recruits and negroes, instead of well seasoned soldiers, but an outbreak of influenza commenced about nine days after the administration of the protective pneumococcic vaccine was begun. For this reason 2,226 recruits received in addition an injection of influenza vaccine (1 billion influenza bacilli). The results of pneumococcic vaccination, though not so striking as those at Camp Upton, were sufficiently encouraging to justify its further application in civil as well as in military life; and there was not any evidence that pneumococcic vaccination disposes the individual even temporarily to either pneumococcic or streptococcic pneumonia.

THE MINISTRY OF HEALTH AND THE MEDICAL PROFESSION.

CERTAIN statements have appeared in the press during the last few days to the effect that the President of the Local Government Board proposed to introduce a medical services bill during the present session. It is obvious from the wording of the paragraphs that the writers laboured under some confusion in their endeavour to piece together the public statements of the Government with regard to the reform of the Poor Law and some oddments of "lobby" gossip. On this point our Lobby correspondent writes: "It will be seen from the answer (p. 683) Dr. Addison gave to a question in the House of Commons on May 28th by Dr. A. C. Farquharson, that the rather nebulous statements made in the press paragraphs were founded on misapprehension. It was to be anticipated that the Minister, as soon as the Consultative Council upon medical and ancillary services was set up under the Ministry of Health Bill, would refer to this body questions in respect of the development of local health services, but he does not intend to submit to the Government any proposals until he has had the advice of the Council. The assumption may be made that while the value of a small advisory council for the preparation of a bill can hardly be over-estimated, the Government and the Council will welcome the discussions which are about to take place at a large number of centres as affording an indication of the desires of the profession. It may be added that lobby gossip suggested widely different Government proposals—such, for instance,

¹ See BRITISH MEDICAL JOURNAL, 1918, i, 58, 61.

² BRITISH MEDICAL JOURNAL, 1918, i, 351.

³ R. L. Cecil and J. H. Austin: *Journ. Exper. Med.*, Baltimore, 1918, xxviii, 19.

⁴ R. L. Cecil and H. F. Vaughan: *Ibid.*, 1919, xxix, 457.

as an improvement in the position of panel doctors, and State aid for hospitals, with a limited measure of State control. But neither of these matters has actually been considered by Dr. Addison at present." We may recall the announcement made in the *JOURNAL* of May 17th with regard to the Group Conferences which have been arranged by the Insurance Acts Committee in conjunction with the Local Medical and Panel Committees. We understand that a series of eighteen such conferences are being arranged throughout England and Wales to discuss the reports recently issued to every member of the profession concerning changes which may be expected to occur in the National Insurance agreements for next year and the suggestions for developments of medical services. At these conferences a representative of the Insurance Acts Committee will be present to introduce the reports, and representatives of the Commissioners will be present to assist in the elucidation of any points which may arise in the discussion. We hope to be able to publish reports of these meetings shortly, but meanwhile we may point out that, however valuable the Minister may find the advice of a small advisory council in the preparation of a bill, it cannot, as an indication of the desires of the profession, take the place of the results of the discussions at a large number of centres which every member of the profession has been invited to attend.

THE DOGS' BILL.

A FULL report of the discussion in the House of Commons on May 23rd on the report stage of the bill introduced as the "Dogs' Protection Bill" by Sir Frederick Banbury is printed at page 684. The second reading of the bill slipped through at the end of a day in the House of Commons, and then went to the Standing Committee, where, owing to the form of procedure, it was not materially modified, although Sir Hamar Greenwood (Parliamentary Under Secretary to the Home Office) introduced the amendment, now carried, providing that experiments on dogs should be permitted subject to the provision that an additional certificate should be provided, setting out that, for reasons specified in it, the object of the experiment would necessarily be frustrated unless it were performed on a dog, and that no other animal was available for such experiment. Science in general, and medical science in particular, is greatly indebted to Sir Hamar Greenwood for the stand he took, and the general tone of the speech in which he commended the Government amendment to the House. The opponents of the progress of medicine by research may be assumed to have made out the best case they could for resisting the Home Office amendment, but they were met on every point, and defeated by a majority of 78 in a House of 216. The bill now awaits third reading, and this has been provisionally put down for June 27th. As was said in an earlier article, while recognizing the value of the stand made by the Home Office, we should prefer to see the bill negatived on the third reading, and we understand that the medical members intend to move its rejection. Sir Auckland Geddes, in the course of the debate on May 23rd, made a speech which in substance, though not in form, gave ample reason for rejection. He dwelt on the absolute necessity to foster in every school of science if it was to be efficient, and in every nation, the desire for knowledge for its own sake; there was no stronger way, he insisted, of destroying that spirit than by putting up artificial legal barriers against it. He struck the right note when he said that everything that interfered with knowledge and the development of science must be opposed, and that while adequate supervision was desirable, it must be supervision designed to help and not to hamper. This puts the matter on high ground of public policy, and exactly expresses the desire of the various antivivisection societies, which is, in fact, to hamper the advance of knowledge.

THE WOMEN SURGEONS AT ROYAUMONT.

INSTEAD of the usual monthly meeting of the London Association of the Medical Women's Federation a dinner was given at Gatti's Restaurant on May 22nd in honour of Miss Frances Ivens, M.S., and her medical colleagues who had received the Croix de Guerre in recognition of their services at the Abbaye du Royaumont Hospital in France. About 140 members and guests were present. Among the guests were Dr. E. Courtanild, Dr. Ruth Nicholson, and Miss Edith Stoney (from the Abbaye du Royaumont Hospital), Sir William Barrett, Mr. James Berry, Dr. J. Walter Carr, Mr. Joseph Cuning, Mr. Willmott Evans, Colonel Elliott, Dr. Eichholz, Sir Walter Fletcher, Mr. J. Gay French, Mr. Joll, Dr. Neal, Senhor de Navarro, Mr. Norman Patterson, Sir Humphry Rolleston, Dr. Sainsbury, and the Hon. Crawford Vaughan. The President, Lady Barrett, in proposing the healths of Miss Ivens and her colleagues, referred to the fact that Miss Ivens had received the Decoration of the Legion of Honour as well as the Croix de Guerre. In reply, Miss Ivens described some of their experiences at the Abbaye du Royaumont and at Villers Cotteret. The French Red Cross authorities accepted the services of a Scottish Women's Hospital Unit early in the war, and they went out to find the Abbaye not prepared for occupation as a hospital. After some delay and much difficulty in rendering it suitable they began work with six patients, but this number soon increased to 300. For some time a branch hospital was carried on very near the fighting line, but when the Germans at last broke through it had to be evacuated quickly, amputation and other serious cases being moved the day after operation. Miss Ivens said that the work she had done had been done because she liked it, and that they had all tried to make the French soldiers feel that the English and Scottish women were their friends.

MEDICINE AND LETTERS.

MEDICINE and letters have at all times had close bonds; it would be strange if it were otherwise. Among the immortal writers of our country Sir Thomas Browne, Tobias Smollett, Oliver Goldsmith, and John Keats can be claimed by the medical profession. Sir Thomas Browne practised physic first in Oxfordshire, and then for many years at Norwich; his eldest son was President of the Royal College of Physicians. Smollett's writings owed something to his experiences as surgeon's mate in H.M.S. *Cumberland*, and after quitting the sea he practised for a while in Downing Street. Keats, after an apprenticeship of four years at Edmonton, became a student of the United Hospitals in the borough, was a dresser at Guy's, and became a Licentiate of the Society of Apothecaries in July, 1816; he is said to have practised surgery, but any ambitions he had in this direction were abandoned in less than a year. Goldsmith, who took the degree of B.A. at Trinity College, Dublin, in 1749, is said to have graduated in medicine during his wanderings on the Continent somewhere about 1755, but authorities differ as to whether it was at Louvain or Padua. On his return he set up as a medical practitioner in Bankside, Southwark, but without success, for he tried to get a medical appointment to a factory on the coast of Comandol; having been plucked at Surgeons' Hall in 1758 at the examination for "hospital mate" he seems to have finally abandoned medicine. At the present day St. Bartholomew's Hospital counts among its sons the Poet Laureate—student of classic models and experimenter in new rhythms—and its historian, whose great work will rank beside masterpieces. The Regius Professor of our art at Oxford and at Cambridge, each in his own way, adorns the world of letters. Dr. Mercier is a force in literature no less than in logic and in medicine; and Mr. Stephen Paget is known to be the author of polished essays. There are three living members of our profession who left practice at an early age to make

their names as novelists—Conan Doyle, de Vere Stacpoole, and Somerset Maugham. The last named, indeed, has won greater fame as a playwright, and during the last ten years the London stage has seldom been without one of his comedies; as many as three or four were running in London in the same season. Each of these writers of fiction has here and there drawn upon his medical knowledge for incidents, character studies, or settings. The editor of a great medical journal has written a good biography, an ingenious novel, and a book of sparkling short stories. Dr. Andrew Balfour earned considerable reputation as an historical novelist before he began to devote his energies to the study of the parasitic diseases of the tropics. Major Johnston Abraham and (we believe) Captain Maurice Nicoll also admit the authorship of amusing novels. Dr. Ronald Macfie has more than one volume of verse to his credit, and Dr. Habberton Lulham's poems are known to many lovers of Sussex. During the war one of our younger members, who bears an immortal name, published, while serving in France, a slender book of verse showing much promise. The list could be extended without difficulty, but it will serve to show that we have now among us writers of the most varied kind—from those whose active profession is no longer medicine but literature, to those who have found time in the rare intervals of a busy medical life to add something worth remembering to the stock of English prose or verse.

METABOLISM OF FEMALE MUNITION WORKERS.

At the meeting of the Royal Society on May 22nd M. Greenwood, C. Hodson, and A. E. Tebb presented a report on the metabolism of female munition workers founded on observations made upon forty-three women engaged upon twelve different processes in the manufacture of projectiles. The rate of metabolism was determined by the method of indirect calorimetry. Making the allowance for metabolic needs during non-working hours recommended by the Royal Society Food (War) Committee, the workers were found to fall into four classes, for each of which the daily net requirements per average woman were 2,530 calories, 2,810 calories, 3,200 calories, 3,425 calories. The results were concordant with the inferences drawn from a study of food consumption in a large explosives supply factory during the war. The figures obtained in this experimental work were somewhat larger than those reached by Becker and Härmäläinen. At the same meeting O. Rosenheim reported the results of direct determinations (by the Douglas-Haldane method) of the energy expenditure of women during periods of rest, recreation, and work (on the lathe). By means of the data obtained, an approximate estimate of the daily food requirements, expressed in calories, was reached, the results agreeing with those of previous workers obtained by indirect statistical methods.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

THE annual general meeting of the above society was held at 11, Chandos Street, Cavendish Square, on May 15th, when Sir Alfred Pearce Gould, President, was in the chair. The report for 1918 showed that the invested funds of the society now amount to £144,250. The sum of £4,288 5s. was distributed amongst the widows and orphans in receipt of grants. The expenses of the year were £273 9s. Attention was drawn at the meeting to the difficulty of getting new members; at the present time the society consists of 159 life and 132 ordinary members, which is a very small proportion considering that membership is open to any registered medical practitioner who at the time of his election is resident within a twenty mile radius of Charing Cross. The annual subscription for a member who at the time of his election is under 40 years of age is £2 2s., if over 40 but under 50 £3 3s., and if over 50 £4 4s.

There are special terms for life membership. Relief is only granted to the widows and orphans of deceased members. A widow of a member who is left with an income of £100 per annum or under, as a rule receives from the society a grant at the rate of £50 per annum from the ordinary funds and one of either £10 or £25 per annum from the special funds, according to her age; in addition a Christmas present of £10 is usually made to each widow. The grant to an orphan from both ordinary funds and special, as a rule, amounts to £43 a year. The society is both provident and beneficent; should a member die and leave his widow well provided for he nevertheless by his subscriptions will have helped the widow and orphans of a necessitous fellow practitioner. The invested funds of the society can never be touched, and only the income derived from such funds may be used for the payment of grants. All life subscriptions and legacies must be funded. Further particulars of the society may be obtained from the secretary at the offices of the society, 11, Chandos Street, Cavendish Square, W.1.

THE ROYAL SOCIETY'S CONVERSAZIONE.

It has long been the custom of the Royal Society to give two conversazioni in the early summer. This custom, suspended during the war, was resumed on May 28th, when a series of demonstrations illustrating recent advances in science were given. Their number seemed rather smaller than usual, but their interest was certainly not less. Of those concerned with biology, that which stimulated curiosity most was given by Mr. E. S. Goodrich, F.R.S., and Mr. A. F. Coventry. In 1910 Professor Bataillon discovered that the unfertilized eggs of a frog would develop if removed from the oviduct and pricked with a very fine needle. The exhibitors found that some 80 per cent. of the eggs so pricked underwent cleavage, a much smaller number passed through later stages of embryo formation, and a very small percentage developed into tadpoles, and some even succeeded in metamorphosing into frogs. Several tadpoles thus obtained were shown swimming vigorously, and one very diminutive but apparently perfectly formed "fatherless frog," which had not survived. Sir Almroth Wright, Mr. L. Colebrook, and Mr. A. Fleming demonstrated methods employed in the study of wound infections which we would despair of making intelligible without diagrams. It may be stated briefly that the experiments showed that white blood corpuscles collected from the blood *in vitro*, or freshly arrived in the wound, were capable of killing great numbers of microbes, but failed if injured by drying, or if an excess of fluid enabled the microbes to keep out of their reach. In the course of the investigation the part played by the blood fluids was also examined. It appeared that the unaltered blood serum provided a very favourable medium for the growth of most of the types of bacteria (sero-phytic) met with in wounds, but that a few, notably streptococci and staphylococci, could grow in it quite unchecked. On the other hand, if the blood serum was "corrupted" by the abolition of its antiproteolytic property, as it is in a wound, all the other types of bacteria (sero-saprophytic bacteria) were enabled to grow freely. If the alkalinity of the blood serum was "blunted off," as in acidosis associated with shock, the gas gangrene bacilli were enabled to grow freely. Two lantern demonstrations were given, the one by Major Kaye and Dr. R. Knox illustrating the use of x rays in examining aeroplane timber and aeroplanes. The fluorescent screen readily revealed bad workmanship and hidden defects in the interior of spars and struts which could not be seen by ordinary visual examination. The other lantern demonstration was given by Dr. R. T. Leiper, who showed a series of photographs illustrating the experimental transmission of the bilharzia infections of man, and incidentally gave an account of the investigation carried out for the War Office and the Medical

Research Committee when he went to Egypt in 1915. It was shown that the vesical and dysenteric lesions of bilharziosis were caused by two different species of worms, that the intermediate host was a different freshwater snail, and that the bilharzia entered the body of man through the skin or through the mucous membrane of the mouth. Dr. Leiper discussed briefly the measures of prevention which seemed feasible and pointed out that advantage might be taken of the peculiar physical and meteorological conditions of Egypt. In that country there was practically no rainfall during the year, and absolutely none during the summer months. The whole of the water of Egypt was derived from the Nile and distributed under the control of the Irrigation Department of the Government. In some districts irrigation water was supplied all the year round, in others only periodically; in these latter districts the ground fell out of cultivation during the summer months and the incidence of bilharziosis was very low, whereas it was high in the districts in which the land was irrigated perennially. Water was absolutely essential to the life of the snail—the intermediate host—and also for that of the bilharzia itself outside the human body. The great increase of the disease in Egypt appeared therefore to be associated with the introduction and extension of perennial irrigation since the beginning of the nineteenth century. The perennial irrigation channels provided suitable places for the snails and enabled them to survive from year to year, when formerly they would have been killed off in enormous numbers by the drought which every year follows the fall of the Nile flood. In some parts of the districts which are irrigated all the year round the water was cut off from the channels for periods of three weeks in every month; with the disappearance of the water from the channels large numbers of the snails perished, as they had no opercula and could not withstand prolonged desiccation like operculated forms. Owing to irregularities in the beds of the canals, however, pools of water were left in which enormous numbers of the bilharzia-carrying snails were found to congregate; there they survived until the next period of flow. As molluscs are relatively slow breeders it seemed feasible to eliminate the molluscan hosts of the bilharzia by a temporary adjustment of their environment, either by drying the pools or by treating them with an acid solution, to which the cercaria, the free swimming stage of bilharzia, was very sensitive. The tablets of acid sodium sulphate used for sterilizing water were efficient; chlorine as used for sterilizing drinking water was useless. As the cercariae entered through the skin it was necessary to destroy them in water used for ablution; this could be done by the addition of lysol, creolin, or army cresol. The strength should be 1 in 10,000 for immediate use, or 1 in 50,000 if the water could be allowed to stand for some hours before use. Ordinary sand filters were useless. Dr. Leiper concluded by a brief reference to the political and social significance of the matter, and spoke of the importance of early Government action, since the frequency of the disease had greatly increased in Egypt, and was producing a high mortality, especially among children. We seem to remember that one of the reasons assigned by Egyptians for recent unrest was that their children were dying in large numbers, and that this was the fault of the Government. Perhaps it is.

TUBERCULOSIS IN THE WEST INDIES.

THE death-rate from tuberculosis in some of the West Indian islands has in times past been exceedingly high. The persistent efforts of European residents in Trinidad, Tobago, and the Guianas have succeeded in materially reducing it by means of dispensary, sanatorium, and hospital treatment. The thirteenth annual meeting of the Association for Prevention and Treatment was held at Port of Spain in Trinidad last Christmas, and by the report recently received it would appear that mortality has

been reduced by nearly 50 per cent. since the work of the association was started in 1905. Such a result is all the more satisfactory because a variety of mixed races has had to be dealt with, living under conditions of overcrowding and general lack of domestic hygiene. But it would appear that such people, if taken in hand sympathetically, have been fully appreciative of the importance of the advice given to them, and have been quite willing to act upon it. As in other places where consumption is rife, there is a tendency to conceal the real nature of the complaint, and unless notification is enforced there must always be a considerable amount of latent disease in such communities. The West Indian native, if treated on rational lines in the early stages, seems to be quite as capable of recovery as is the British patient, and hence the accepted theory of the special susceptibility of such natives is somewhat discounted. Although so greatly reduced, the death-rate from consumption in Trinidad is still far too high, being little short of 3 per cent.

LONDON CLINIC FOR TROPICAL DISEASES.

THE Seamen's Hospital Society has now acquired premises in Euston Square, formerly named the Endsleigh Palace or University Hotel and known during the war as the Endsleigh Palace Hospital for Officers. It is proposed to open the premises shortly as a hospital for the treatment of tropical diseases. The Red Cross has generously contributed towards the new scheme, and has endowed thirty beds for the use of sailors and soldiers who have contracted tropical disease on active service abroad. The hospital will be intimately associated with the London School of Tropical Medicine. In the past the Seamen's Hospital Society has played an important part in the development in London of graduate facilities for medical men. The establishment of a special teaching hospital for tropical medicine in the heart of London should powerfully help the present movement to make London the great centre of study for overseas graduates.

THE King has appointed Colonel W. T. Lister, C.M.G., F.R.C.S., ophthalmic surgeon to the London Hospital, to be surgeon-oculist to His Majesty's household. Colonel Lister has been consulting ophthalmic surgeon to the armies in France since 1914.

THE Croonian Lecture on the biological significance of anaphylaxis was delivered on May 29th, before the Royal Society, by Dr. H. H. Dale, F.R.S., director of the biochemical and pharmacological department of the Medical Research Committee.

Medical Notes in Parliament.

Ministry of Health: Future of Medical Service.

DR. A. C. FARQUHARSON, on May 28th, asked the President of the Local Government Board whether he was intending to introduce a bill this session which would establish a new system of general medical services for the population, and, if so, whether such bill will provide a whole-time salaried service of doctors, including hospitals and clinics. Dr. Addison, in a written answer, replied as follows: No, sir; immediately the Ministry of Health Bill becomes law, I intend to set up the Consultative Councils under the bill, including one to advise upon medical and ancillary services, as I have already explained to the House. To them I shall at once refer various questions in respect of the development of local health services, as I am anxious to proceed as speedily as possible with these matters; but I shall not submit any proposals to the Government on those matters until I have obtained their advice.

Dogs' Protection Bill.

The Dogs' Protection Bill, introduced by Sir Frederick Banbury, came, as amended by a Standing Committee, before the House of Commons on May 23rd. The main debate on the Government amendments took place on a preliminary qualifying amendment to the first clause. This clause as presented on report was as follows:

Notwithstanding anything in the Cruelty to Animals Act, 1876 (hereinafter referred to as "the principal Act"), it shall be unlawful to perform any experiments of a nature calculated to give pain or disease to any dog for any purpose whatever, either with or without anaesthetics, and no person or place shall be licensed for the purpose of performing any such experiments.

The amendment by Sir Hamar Greenwood, Under Secretary for the Home Department, was to add the words, "except as hereinafter provided." The subsequent amendment to be proposed was to omit from the clause the words following the word "anaesthetics" and to add instead the following words:

except on such certificate being given as is mentioned in the principal Act stating, in addition to the statements required by Section 3 of that Act to be made in such certificate, that for reasons specified in the certificate the object of the experiment would necessarily be frustrated unless it is performed on a dog, and that no other animal is available for such experiment.

Sir Frederick Banbury, in asking the House to accept the bill as it stood, referred to a letter which had been written by Sir Edward Schafer to *The Times*, and reproduced as a leaflet by the Research Defence Society. Therein it was said that no operation whatever could be performed on a dog without the express sanction of the Home Secretary. He submitted that this statement was absolutely inaccurate. It was true that an applicant for a certificate had to forward a copy, signed by one or more of certain persons of eminence named, to the Home Secretary, but if he were occupied with other things, it would, according to the law, become valid without his sanction. The section dealing with the matter said it "shall not be made available until one week after a copy has been so forwarded."

Captain Elliott, interpolating, said that there was printed on the certificate in red ink: "Experiments are not to be performed under this certificate until the licensee has been informed that it has not been disallowed by the Secretary of State." That seemed to him to be an absolute protection.

Sir Frederick Banbury, continuing, said he was talking about the law, and the law did not compel that those words should appear. Sir Frederick went on to refer to the evidence given before the Royal Commission, quoting in the first instance that of Dr. Pembrey to the effect that experiments which caused pain were in his opinion necessary, and that it was necessary to have them without anaesthetics. Sir Edward Schafer had said that dogs were absolutely protected from suffering, but Sir Frederick asked whether the House thought garrotting was not a painful experiment, and again quoted Dr. Pembrey, who, after saying that garrotting was not in his opinion a painful experiment if done properly, had added, "I consider it perfectly right to inflict pain upon animals." Sir Frederick next quoted from a speech by Dr. Wilson, who was a member of a commission appointed in 1906. He cited from Dr. Wilson's address to the British Medical Association at Portsmouth in 1899 wherein he said "there should be some pause to these ruthless lines of experimentation," and protested against the after-effects of the injection of virus—"a long-drawn-out agony." Sir Frederick next read a letter he had received from Sir William Collins, M.D., formerly M.P. for Derby, which was as follows:

Allow me to congratulate you on the success which has so far attended you on the Dogs' Bill. You will, of course, have noticed paragraph 95, page 57, in the report of the Royal Commission, which, if I remember rightly, I drafted.

He had, he said, letters from other doctors to the same effect, and the petition prepared by the Royal Canine Defence League had been signed, he thought, by something like 1,300 doctors. The opposition from the medical men to prohibition had always existed; they opposed the Act of 1876. The Home Secretary had stated that these matters were dependent on certificates, but it was the Act they had to look to, and not to any Home Secretary. Sir Frederick then quoted the law as follows:

If an animal, by reason of any of the said experiments, under the said certificate, is found to be suffering pain which is severe, and likely to endure, and if the main result of the experiment has been attained, the animal should be forthwith killed. . . . If an animal, after the said experiment, is found to be suffering from severe pain likely to endure, such animal should be killed.

The two statements were, he urged, absolutely contradictory. The first said that the dog should be killed if the main result had been attained, and the second that it should be killed only if it were suffering severe pain likely to endure. Who was to judge? Those gentlemen who said that they did not think it harmful to give pain if it was necessary to give pain. In conclusion, Sir Frederick, dealing with the question of the value of experiments, quoted Dr. Douglas Cowan, who, after giving a description (in the *Journal of Physiology* of March 21st, 1914) of sixty-five observations on three dogs, wrote: "The success of the matter (the experiments) is largely a matter of chance . . . no positive result was ever obtained following injection."

In evidence of the extent of the experiments and the time taken, Sir Frederick quoted from the *Journal of Physiology* for February 27th, 1899, the following: "Terrier: Right kidney mutilated 27th June, 1890; left kidney removed 8th August, 1890; killed 27th August, 1890."

Mr. Rawlinson was glad that the Government had put forward the amendment, but said he should still object strongly to the bill on the third reading. He asked whether there was any other country in the world where men of science were confronted with the pains, penalties, and restrictions to which they were subjected already in this country in following out research. Men of science who were attempting to do work of the greatest possible use to humanity, instead of being regarded as benefactors of the human race, were subject to licences which some in that House looked on as unnecessary insults. In view of the fact that experiments of this kind must be made, were they to be made upon animals or upon human beings? Was this the only country pharisaical enough to impose these restrictions upon medical men? But the matter did not stop there. Were the antivivisection societies merely to be content to save the dog? They would go on to prevent vivisection on every kind of animal, and that, after all, was the only logical outcome. There were very few doctors in favour of this bill—most agreed that it would do a great injury to medical research. Those who were opposing this measure represented a large profession. In family crises the doctor was trusted to perform operations and for other responsibilities. Ought he not to be trusted on this question also? Was it really believed that the medical members of the House who were opposing this bill favoured operations on dogs for the sake of cruelty? They pledged their professional reputation that it would be wrong to pass this bill, because it would be a serious injury to medical science. Could they have any motive for deceiving the House?

Captain Elliott said there were some things in Sir Frederick Banbury's speech which could not go unchallenged. He had traversed what Sir Edward Schafer had said. He spoke of "all suffering" when he should have said "all unnecessary suffering." Captain Elliott next took up Sir Frederick's reference to the Home Secretary. Clause 8 of the Act of 1876 was:

The Secretary of State may license any person whom he may think qualified to hold a licence to perform experiments under this head.

In these circumstances it was fallacious to try to get the House to believe that the governing thing was a certificate from doctors. The statement that an experiment could not be conducted except under licence from the Home Secretary was absolutely correct. Moreover, doctors objected to the name of this bill. The Dogs' Protection Bill was not a bill to protect dogs. They might be mutilated, and were, without any anaesthetic, by all sorts of people, so long as these people were not qualified scientists. The operation of docking a dog's tail was a case in point. It was done by hundreds of thousands of people every year. If a Dogs' Protection Bill was the right title, the measure ought to protect dogs even against the dog fancier and the man in the back shop with the rusty knife. There were 3 or 4 million dogs in this country, and of these a few scores were operated upon by scientists, while hundreds of thousands were operated upon by sporting gentlemen. The bill said it should be unlawful to conduct any experiment calculated to give pain or disease to any dog for any person whatsoever. Experiments were now being carried on of the utmost promise to the human race, which this bill would bring to a dead stop. Supposing that a feeding experiment might produce a diseased condition, but one which was not necessarily painful, the experiment would be prohibited under this bill. One of the gravest diseases affecting the children of industrial towns was rickets. It caught the child at its most delicate moment when its bones were soft, and when very often there was ignorance on the part of the parents as to what was happening. On account of

some deficiency, some little minor constituent, either in its environment or diet, the bones of the child remained soft, its backbone was bowed, its legs were bent out, and it was diseased and crippled for the rest of its life. Ten years ago Dr. Leonard Findlay and Professor Paton of Glasgow initiated experiments to find out what they could about this disease. There were experiments going on also in Cambridge, London, and other parts of England. Sir Frederick Banbury made play with the nobility and devotion of dogs, but what about those qualities in children? Margarine was a perfectly good food, excellent for fully grown up people, but experiments and research were tending to show that it was deficient in vitamins. This constituent was very small in amount. Vitamines occupied no more bulk in the food than did glue in the construction of a chair, yet they were vital to the creature fed on this food. If it were found that margarine was deficient in this respect, it was not fit for consumption by a growing child. Butter did contain vitamins, and here was an immediate case of research bearing actual proof at this moment. They saw that to these vegetable oils in margarine must be added some animal fats—suet or butter—so that the margarine might be safe for consumption by growing children. Would they wipe out an experiment like that, and bring it to a dead stop? These feeding experiments could be conducted only on dogs. Was it seriously said that they should conduct these experiments on growing children? He had a record of experiments conducted on growing children in the United States. In one case thirty-two children had a supply of these vitamins, and only two developed rickets. In the other case sixteen did not get any of the vitamins, and fifteen developed rickets. Ninety-four per cent. were diseased in one case, and 7 per cent. in the other. Surely when these children grew up they would look that experimenter in the face and ask him what right he had to condemn them because he would not carry on the experiments on animals. He was not quite sure whether the Speaker ruled out of order all amendments put down relating to cruelty to dogs in other cases.

Mr. Speaker: In my judgement, none of these amendments are applicable to the bill. The title of the bill is to "prevent the vivisection of dogs." Vivisection is a term which is well known, and any curtailment to increase the selling value of a dog, or anything of that nature, is beyond the scope of the bill.

Sir H. Craik: On a point of order. Surely vivisection is in no way confined to operations which are carried on for scientific purposes. Vivisection surely means the cutting of live creatures. In what possible way could vivisection be confined solely to operations of cutting which have for their object scientific ends?

Mr. Speaker: If the hon. gentleman will look at the Act he will find that it relates to the "discovery of physiological knowledge or knowledge useful for saving or prolonging life and alleviating disease." That I take to be the definition of vivisection for this purpose. It is the object of the bill, and it is what the House meant when it agreed to the second reading. What I conceive to be that object was that the vivisection of animals for purposes of medical research was not to include the vivisection of dogs. That was the meaning at the second reading of the bill, and consequently the discussion must be confined within the four corners of that. The very first words related to the Act of 1876. It was an amendment of that Act.

Captain Elliott, continuing, said that the bill as it went up to Committee did not contain any such reference, and he did not suppose that its amendment altered the original form of the bill, but he was glad to receive instructions. Referring to the list of persons supporting the bill, Captain Elliott chaffed Sir John Butcher upon finding himself in strange company, prominent on the list being the name of her Serene Highness Princess Ludvig von Lowenstein Wertheim.

Sir John Butcher protested that he had never heard of the name of the lady before.

Captain Elliott, summing up his argument for the amendment, said the case in favour of experiments on animals was overwhelming. No evidence had been received in that House to rebut the points made by every learned society in Great Britain. The Statutory Committee which was set up by Parliament for the purpose of alleviating pain and assisting research made a unanimous report against the proposals in the bill. He had referred to feeding experiments which he happened to know himself. They were entirely painless, yet they required a certificate signed by two eminent gentlemen, and must subsequently be allowed by the Home Office. He left other members to deal with the surgical experiments; in nine cases out of ten these were not only conducted but were concluded under full

anaesthesia, and the animal had no feeling of pain throughout the operation.

The Speaker said that perhaps the House would allow him to say that since Captain Elliott had called his attention to it he had looked at the bill as originally produced. His attention had not been called to the change which had been made in Committee. On looking at it closely, he thought that he was rash and wrong in saying that the amendments mentioned went outside the bill. He thought that some of them did come within the limits of the bill as passed on the second reading.

Lieut.-Colonel Spender Clay, after referring to the shoals of letters he had received asking him to support the bill, said that, while he should like to do all he could to alleviate the sufferings of dogs, he felt bound to support the amendment. He thought, however, that something might be put into the bill to strengthen the position of the inspectors who examined the conditions under which the animals were experimented on. He understood that they were few in number. He believed that if the number were increased, and that they were given a better position and paid surprise visits, the situation would be more satisfactory.

Colonel Burn supported the bill. He had not found any convincing proof that the dog was the only animal from which these results could be obtained. Under the Act it was legal to keep a dog alive after an operation for observation, and even to experiment upon it a second time. He brought up a few years ago in that House the case of a dog in Edinburgh, if he remembered rightly, that had been operated upon, and this dog was found running about the streets of Edinburgh with an open wound. It was the abuse of vivisection in places like that which made members feel that the bill was necessary. There might be difficulty in feeling sure that those results were applicable to human beings. He could only speak for himself, but if it were his fate to be stricken with a fell disease he should be only too delighted to bequeath his body to the surgeons to do whatever they liked with in the interests of research.

Sir Auckland Geddes (Minister of Reconstruction), speaking as a teacher in medical schools, said he had great sympathy with a man who said, "The dog has been my best friend; I cannot picture that dog being subjected to an operation in order that knowledge may be required." He understood that man's point of view, and had taken many such round the university to show them what was meant by vivisection. The question that presented itself to the physiologists was, "What animal can I use that is accustomed to a diet like a man's diet, that is accustomed to a living environment like a man's, unless I take a dog?" It was no use saying, "Take a monkey"—a monkey was not accustomed to live with men. Cats were to some extent, goats were not, pigs were not, guinea-pigs were not, and so on through the whole scale. Thus there were certain types and classes of experiments which could only be carried out either upon a cat or a dog. The cat was peculiarly unsuitable in many ways for experiments. It was a smaller animal. It had retained more of its carnivorous characteristics, it was less humanized in its diet. For certain classes of experiments it was absolutely essential to choose the dog. Many things could be learnt from the body of a dead child, a dead woman, or a dead man, but some things could not be learnt from dead tissues, but only from living tissues, and the only tissues available in such cases were those of dogs. Many people said they would rather not have the knowledge than cause any suffering to a dog. He did not think that was really in the highest sense a moral point of view, because by withholding man's right to find out, they were dooming man's children to pain and suffering. But that was not all. There were many things that had to be done in the course of an operation, and to those who had not seen many operations, or perhaps had seen none, there could be no understanding of the delicacy of touch and the fineness of manipulation required for success. They had allowed themselves, and were perhaps in danger now of allowing their surgeons, to be swayed by sentiment. This was not a thing where sentiment could rule. It was justice guiding the intellect, a profound sense of justice; it was necessary and right, and it was only just to the people and to the children of this country that our surgeons and physicians should be fully trained and fully educated, and it was upon that ground that he claimed the right for the teachers of science—and in Canada it was fully exercised—to have the power to equip with knowledge, with manual skill, and with dexterity the practitioners of medicine and surgery who passed from the university to practice. But education was something more than technical training. Unless there was behind the education the whole spirit of research, the will to

know the truth for truth's sake, the education would be sterile. It would not be education, but merely technical instruction. Therefore it was really in the most vital interests of this country that her schools of science should be empowered to investigate and to impart instruction about those mysteries which proceeded within the body of living things. It was absolutely necessary that there should be in every school, if it was to be efficient, and in every nation, if it was to be efficient, that desire for knowledge for its own sake, and there was no stronger way of destroying that spirit than by putting up artificial and legal barriers.

Sir Frederick Banbury, interposing, asked whether the Minister was against restrictions.

Sir Auckland Geddes replied that he was against everything that interfered with knowledge and the development of science. He considered that the Act of 1876 had done more harm to British interests than almost any other Act passed in that House. He was not against adequate supervision. He knew from what he had seen on the continent of Europe that supervision was necessary, but it must be supervision designed to help and not to hamper. He appealed to those who felt there was something cruel in experimenting on dogs to think of the children. During the two years of the war in which he was responsible for medical examination of recruits it was driven in with greater and greater force that the population of this country was suffering from a high degree of physical inefficiency, from causes wholly preventable if science were given fair play and allowed to develop. There was no more pathetic debate in his recollection than this: that in a matter like this they should be appealing to feelings of sentiment when they were dealing with the highest physical interests of the country. He asked the House to see that before this bill left its hands everything was removed from it which would hamper the development of science and of knowledge.

Mr. C. White, in supporting the bill, asked the House to remember that there were medical men in this country, distinguished and of great experience, who were against the arguments just put forward, and quoted the opinion of Dr. Robert Bell and of the late Mr. Lawson Tait of Birmingham. He further quoted what had been said by Sir Frederick Treves, who was not an antivivisectionist but had declared that he had found himself much hampered by experiments which he had carried out on the Continent on the intestines of dogs. He asked further who was to be the judge as to whether the experiments were carried out as they should be. It was impossible to give anaesthetics in some experiments.

Mr. McMicking asked for information as to the meaning of the new certificate. Would it reduce the number of experiments or the suffering to which dogs were exposed in experiments? Certificates A and E were given for operations without anaesthetics on dogs, and coupled with them there was what was known as the "pain condition," which was a condition that if the animal was suffering severe pain it had to be destroyed. With regard to Certificate A, Mr. McMicking quoted from the Royal Commission on Vivisection (p. 58, para. 88) to the effect that even if the initial procedure under the certificate might be regarded as trivial, the subsequent results must, in some cases at any rate, be productive of great pain and much suffering. This, he wished the House to appreciate, was signed by all the signatories to the report. Under Certificate B operations took place under anaesthetics, but the animal was allowed to recover from the effect of the anaesthetics, in order that the result of the operation might be observed. That, again, was coupled with the pain condition. How was it possible for anybody to tell what pain the dog had? Mr. McMicking quoted from the *Journal of Experimental Physiology* certain cases of experiments. In one case it appeared that an anaesthetic was administered to a cat, that the experiment lasted for several days, and that apparently no other anaesthetic was administered. He quoted another from the *Journal of Experimental Physiology*, p. 204, as to an operation on a dog. This experiment lasted about seven days, and apparently anaesthesia was induced on the first, third, and seventh days. He also referred to the sensitiveness of the dog, and to the evidence of Sir William Thornley Stoker, the late Inspector for Ireland, who said that experiments on dogs ought to be allowed only with the greatest possible care, because they felt so much.

Sir W. Whitla, in supporting the amendment, said he would much rather oppose the bill altogether. He absolutely and utterly denied the allegations of cruelty. He accepted the definition that cruelty was unnecessary suffering. They had heard a great deal from Sir Frederick Banbury about the law. He (Sir W. Whitla) could assure the House, from his own personal experience in research in the laboratories of this country and in the laboratories

on the Continent, that he had never seen any real unnecessary suffering; he had never even seen any evidence of real pain inflicted in experiments on dogs. Why not go further and say that the lethal chamber should be abolished? Either stop the bill or pursue it to its logical conclusion, and do not allow a dog to die. The doctors asked for a few of these dogs that gravitated to the lethal chamber in order to put them under chloroform, and they asked permission, while these dogs were under chloroform, to watch the effect of some drug on their blood pressure, and as soon as that was determined they gave the dogs a larger dose of chloroform, and sent them to the happy hunting ground. As for the beneficial results, he would take the case of hydrophobia. Nothing could be worse than the prevarication which went on as to that matter. They were told that so many people were known to have died of hydrophobia after treatment at the Pasteur Institute, and that so many people had died of diphtheria; never a word was said about the thousands and thousands of lives saved. The mortality from hydrophobia in people bitten by rabid dogs had fallen from 16 per cent. to less than 1 per cent. Pasteur once showed him a map in which he pointed out that the mortality cases rose with every few hundred miles from Paris. No human being need die of hydrophobia if the treatment were used in time. The same remark applied to diphtheria. On the question of Pasteurism he had a word to say in favour of the dog itself. He saw in the distance a vision of the absolute annihilation of hydrophobia and rabies by the protection of inoculation, and this could be achieved only by experiments properly carried out. No dog should be allowed to be kept unless protected by inoculation, and in time probably every dog would be saved from rabies. He believed that in the future they would be able to combat the greatest enemy of mankind—the white plague of tuberculosis—by the protective power of the dog's serum. He had followed the effects of experiments on tuberculous ulcers. In one case he wished to prepare some of this serum, and found he had to get Certificate A and Certificate B, and had to get this and that from so many people that he was disgusted, and went off to a Paris laboratory, where he could work without all these restrictions. He supported the amendment, not because he loved the dog less, but because he loved man more.

Sir John Butcher, supporting the bill, said there was profound and unexplainable ignorance on the part of many gentlemen who were opposing it. He quoted from Professor Starling's letter to *The Times* on April 19th, wherein it was said that, according to present regulations, the animal had to be fully under the influence of an anaesthetic during the whole of the operation and to be killed before recovering consciousness. That was not so. Professor Starling further said that if the object of the experiment required that the dog should be allowed to survive, it must be killed at once under an anaesthetic should pain supervene at any time after the operation. That was not so. It was perfectly true that practice was milder than the law, but it did not eliminate pain. There was really no safeguard that the present practice of the Home Office would be continued. The present safeguards might be destroyed by any future Home Secretary. The practice with regard to killing the dog after an operation was this: that if the object of the experiment had not been obtained, the operator or experimenter was entitled to keep the dog alive, although there was severe pain of a temporary character, or considerable pain which was likely to endure. It was only when there was a combination of the two conditions, severe pain which was likely to endure, that the dog must be killed. If there was temporary severe pain or continuing considerable pain, then in either of those cases the man was allowed to keep the dog alive. Sir John Butcher next recalled Captain Elliott's references to a lady with a German title, whom he spoke of as a leader in the antivivisectionist movement. He, Sir John, had now ascertained that this lady was a British-born subject, belonging to a very old British family, that it was her misfortune to marry a German prince some years ago, and that he had been dead for some years.

Sir Hamar Greenwood, the Under Secretary for the Home Department, replying to the debate on behalf of the Government, said that the object of the bill was the absolute prohibition of experiments on dogs, but the amendment he proposed would give an additional precaution and further supervision on all experiments on this animal, and so make it impossible, as indeed it already was, to inflict upon a dog during the course of any experiment anything but the most limited and short-lived pain. The Government, while prepared to protect the few dogs experimented upon, were not prepared to go against the overwhelming mass of experience and scientific opinion and prohibit absolutely experiments on dogs. He might further say

that the word "vivisection" was not a word of the Home Office. That word did not occur in the original Act of 1876, nor in any document issued under that Act. Vivisection was restricted to comparatively few dogs. The great majority of the operations were simple inoculations or the cutting of small veins, which did not, in the majority of cases, interfere with the comfort or health of the dog. He must protest against the allegation, made more widely outside the House than in it, of cruelty by medical men and indifference by the Home Office and the Government in carrying out this important duty. The total number of persons who held licences during 1917 was 671. Each of those licensees furnished a report, and it was found that only 279 acted under their licences and performed any operation whatever. Out of 55,000 experiments conducted in the year 1917 a few hundred only were experiments on dogs, and most of these were feeding or harmless inoculation experiments that did not hurt the dog. The great majority of these experiments were on rats, mice, guinea-pigs and rabbits. Of these experiments 19,000 were performed on behalf of Government department and public health authorities throughout the country, and 22,600 were for the preparation, testing, and standardizing of serum, vaccine, and other drugs. The dog was used only in those cases where no other animal was available. The conditions issued with the licence, and the certificates issued for certain special purposes, were as much the law of the land as the written word of the statute. If the Home Secretary did not obey the spirit of the Act as well as the letter, he could be challenged in the House of Commons. The House was as much responsible for administration as for legislation. When a person made an application for a licence or certificate, it was referred to the inspector of the district in which he lived. The inspector visited the applicant, made inquiries, reported the facts to the chief inspector of the Home Office, who had spent long and useful years in the sympathetic administration of the law. The chief inspector made his observations to the Home Secretary, and when a severe operation was to be performed, cutting with a knife, the application for a licence was referred to a committee of seven of the most distinguished scientific gentlemen in the realm, each distinguished for his services in the war. When the application had passed through all these stages the licence was sanctioned by the Home Secretary himself, and it was for one year only. It might be renewed from time to time, but the annual application for renewal enabled the Home Office to review conduct. No experiment could take place except in a registered place, except in those rare instances where an outbreak of disease had occurred in animals where no laboratory was available. The registered places were very carefully inspected. The Home Secretary fixed a series of conditions, most of which were drastic, dealing with the antiseptic treatment of wounds, and no operation more severe than simple inoculation, or superficial vivisection, which simply meant the tapping of a vein, might be performed in any experiment, under any of the certificates, without an anaesthetic. The amendment which stood in his name was based on the report of the Royal Commission of 1912. He was quoting from the report signed by all the Commissioners. It was true that three of them made subsequent recommendations, but the paragraph on which his amendment was based carried with it all the members of the Commission. The paragraph was as follows:

In view of the variety of practice and the divergence of opinion as to the necessity of employing dogs for experimentation and demonstration, we find some difficulty in deciding upon this important question. Some of us regard the provisions of the existing law as sufficient, some of us would prefer that in the case both of experimentation and demonstration the further special protection given to horses, asses, and mules should be extended to dogs, while some of us would exclude the use of dogs altogether. But if any alteration is made in the existing procedure, the majority of us would agree that the special enactments now applicable to horses, asses, and mules might be extended to dogs, and also to cats and anthropoid apes.

Every recommendation in that report, except the one in the amendment now proposed, had been adopted by the Home Office, including the establishment of an Advisory Committee. As for results from experiments, he held that the report of the Medical Research Committee, which had been circulated to members, ought not to be ignored. One of the results had been the localization of the functions of the brain, and by further experiments—on apes—the profession had been able to fix the exact position in the brain of certain diseases, and as a result large numbers of lives had been saved. Pasteur's early work on the nature and transmission of rabies had been carried out on dogs, but there were many questions about which information was

still required—as, for instance, the period of incubation. A case had been reported in which a dog developed rabies two hundred days after it had been bitten by another dog. If rabies was to be stamped out it was essential that the longest possible incubation period should be established in order that measures of quarantine might be effective. Any research into the method of treating rabies in the dog and the human being would also have to be worked out on the dog. This country had run out of the supply of Pasteur lymph because the French could spare no more. The President of the Local Government Board had at once started measures for the production of the lymph, which, in spite of all statements to the contrary, was the only known remedy for the prevention of the most horrible disease that could afflict a dog or a man. In this matter of rabies, as in other matters, the dog and the man stood together, and both benefited from the experiments on the dog. Again, distemper, the commonest disease in the dog, could not be remedied except by experiments on the animal itself; that seemed common sense as well as a scientific view. The real divergence of opinion in this controversy was whether they would exalt the man above the dog or the dog above the man. He put the man first—he put the child even before the man. The cures and preventives obtained as a result of the experiments on dogs were innumerable. At this very moment experiments were going on under the Medical Research Committee which would be stopped by this bill, though they had the object of alleviating suffering in the human race.

Mr. Bottomley (interposing): Why not experiment on human criminals if it doesn't hurt them?

Sir Hamar Greenwood replied that that suggestion had, he believed, been carried out on the Continent. In appealing to the House to support the amendment, he spoke not only as representing the Government, but was the willing champion of the honour of the noble profession of medicine, which included tens of thousands of men and women whose mighty work of healing and saving in the war should free them from reproach as fellow citizens from any accusation of cruelty. The passing the bill into law would cast an undeserved stigma on that profession, and he asked the House to enable experiments to be continued, because in the past they had done great good, and would in the future, he believed, do even greater good.

Sir Frederick Banbury then moved the closure, and this was agreed to.

Sir Hamar Greenwood's amendment to Clause 1, that the words "except as hereinafter provided" be inserted was next put. On a division 147 members voted for the amendment, and 69 against.

Sir Hamar Greenwood next moved the principal amendment, as stated at the beginning, setting forth the terms of the grant of certificates. This was then agreed to. Sir H. Greenwood afterwards moved several drafting amendments, and an alteration of the title of the bill from "A bill to prevent the vivisection of dogs," to "A bill to impose further restrictions on the vivisection of dogs." This amendment was agreed to, and the bill was put down to be read a third time on June 27th.

Ministry of Health Bill.

The Ministry of Health Bill was taken for third reading in the House of Lords on May 22nd.

Patent Medicines to come within the Bill.

On Clause 2, stating the general powers and duties of the Minister in relation to health, the Lord Chancellor moved two amendments in order to meet the appeal made in earlier debates, that the Ministry should be responsible for prosecutions for patent medicine frauds. The substance of these amendments was, first, that the "preparation" as well as the "carrying out" of measures as to health should explicitly fall upon the Ministry of Health, and secondly, that amongst the measures in regard to which the Ministry should thus be responsible should be included a measure for the avoidance of fraud in connexion with alleged remedies for the prevention and cure of diseases. In order that the matter may be clearly understood, it may be well to reproduce the clause as presented on report.

It shall be the duty of the Minister, in the exercise and performance of any powers and duties transferred to or conferred upon him by or in pursuance of this Act, to take all such steps as may be desirable to secure the effective carrying out and co-ordination of measures conducive to the health of the people, including measures for the prevention and cure of diseases, the treatment of physical and mental defects, the treatment and care of the blind, the initiation and direction of research, the collection, preparation, publication, and dissemination of information and statistics relating thereto, and the training of persons for health services.

The amendments provide that the word "preparation" shall be inserted before the words "effective carrying out," and that the words "the avoidance of fraud in connexion with alleged remedies therefor" shall be inserted after the word "diseases." The Lord Chancellor said that he had had long consultations on the previous day with the Director and Assistant Director of Public Prosecutions and with other persons, and his proposals represented a unanimous conclusion. Patent medicine frauds could, under the existing law, be attacked only upon the charge of obtaining money by false pretences. These were very difficult prosecutions, and more often than not failed. The course which ought to be adopted was to strengthen our legislation, and in this connexion he reminded the House of the recommendation of the Select Committee on Patent Medicines in 1914, which was as under:

Your Committee further recommend the following legislative enactments: (1) That every medicated wine, and every proprietary remedy containing more alcohol than that required for pharmacological purposes, be required to state upon the label the proportion of alcohol contained in it. (2) That the advertisement and sale (except the sale by a doctor's order) of medicines purporting the cure of the following diseases be prohibited: Cancer, consumption, lupus, deafness, diabetes, paralysis, fits, epilepsy, locomotor ataxy, Bright's disease, rupture (without operation or appliance). (3) That all advertisements of remedies for diseases arising from sexual intercourse or referring to sexual weakness be prohibited. (4) That all advertisements likely to suggest that a medicine is an abortifacient be prohibited.

These recommendations had quite recently been discussed by the Government, and he was authorized to say that the Government concurred in them. He was further authorized to say that a very early attempt would be made to carry out in a separate bill those specific recommendations. He had also the authority of the Director of Public Prosecutions and of the Attorney-General for saying that if the legislation indicated became law, there would certainly be no remissness on their part in seeing that persons who pursued practices which under this legislation would become criminal should be adequately dealt with.

Viscount Haldane welcomed the announcement because it meant that the bill would be strengthened, as it would become the duty of the new Minister to prepare and procure legislation. There was, however, another difficulty. In Scotland the Lord Advocate had the duty of taking up a prosecution in a matter of this kind. In England there was a Public Prosecutor, but he picked and chose at discretion. He felt the difficulty which the Lord Chancellor pointed out of creating a new department for public prosecution within the Ministry of Health, but he would like something more specific than was contemplated. If an undertaking was given that the Minister of Health would recognize it as his duty to look out for such cases, and to bring them to the attention of the Public Prosecutor, and that the Public Prosecutor would then take them up, the position would be better.

Lord Bledisloe, who had brought the first pressure upon the Government, said he would rest satisfied with the assurance that the promised bill would be introduced at the earliest opportunity.

The Lord Chancellor, in reply to Lord Haldane, said it would, in the opinion of the Government, be a great advantage that the Minister should be able to call in the Attorney-General or the Public Prosecutor on the question of these frauds, and there was no question that the Attorney-General would take a very serious view of his responsibilities.

Both amendments were carried.

The Parliamentary Secretaryship.

Viscount Sandhurst next moved an amendment to rescind the amendment which the Lords had carried in committee—that there should be but one parliamentary secretary, and to provide instead that power should be taken for the appointment of two parliamentary (or under) secretaries. He repeated that in the first instance one of these under-secretaries would be chosen from the Lords. A large amount of work would fall upon the Ministry of Health, and Lord Sandhurst pleaded that the department should be allowed to have the two minor secretaries as well as a chief minister.

The Marquess of Crewe emphasized the objection which was felt in the country to the creation of superfluous ministers.

Lord Downham said that the Government really proposed to create no fewer than five Ministers for Health. They proposed to turn the President of the Local Government Board into a Minister of Health, and to give him two Parliamentary Secretaries for England and Wales, to give an extra Parliamentary Secretary for looking after the health of Scotland, and, as he understood, to give in another bill another Under-Secretary to look after the health of Ireland. He submitted that two Under-Secretaries were not required under the English bill, and he

pointed out that the new department would before long be freed of responsibilities connected with the Poor Law.

The Marquis of Salisbury urged that the arguments for having two Under-Secretaries were unsatisfactory.

Earl Curzon renewed the appeal that the amendment should be accepted, but on a division it was rejected by 48 votes to 26.

The amendment came before the House of Commons on May 26th, when Dr. Addison moved that the Commons should disagree with the Lords' amendment limiting the power of appointment of Parliamentary Secretaries to one instead of two as was proposed by the Government. Dr. Addison repeated the arguments already presented in the Upper House, urging that owing to the amount of work to be done two under-secretaries would be needed. Sir Donald Maclean supported the proposal, but asked for an assurance, which Dr. Addison gave, that when the administration of the Poor Law was separated there would be no request for an additional under-secretary. After some discussion the House divided, and Dr. Addison's motion was carried by 170 votes to 25.

Extra Remuneration under the Insurance Acts.—Sir Kingsley Wood asked Major Astor, on May 23rd, the amounts provided during the present financial year as extra remuneration in the nature of a war bonus or otherwise for medical practitioners on the insurance panels, pharmacists on the insurance panels, civil servants and other officials in the employ of the Insurance Commission, and the agents and workers of the approved societies respectively. Major Astor replied that no comparison of amounts provided from Exchequer funds was possible as the number of individuals in the four categories differed widely; one of the four categories received their whole remuneration from Government funds. In the case of the first category the amount to be provided from the Exchequer during the present financial year for war bonus was £300,000; and in the case of the third category it was about £138,000. The increase in the second category could not be easily separated from the total drug fund of which it formed a part. The remuneration of individuals in the fourth category was not met from Exchequer funds except as regards the two-ninths contribution to the administrative expenditure of the approved societies which employed them, and fixed their remuneration; the Commissioners had no information as to extra remuneration given by approved societies to their officials.

Burial of Stillborn Children: Legislation being Considered.—Mr. Gilbert, on May 22nd, asked Major Astor whether the attention of the Local Government Board had been called to an inquest lately held on a stillborn child by the Southwark coroner, when certain practices were disclosed as to the burial certificate given by the midwife; and whether he proposed to recommend the alteration of the law to end the practice of allowing midwives to give certificates for burial. Major Astor said the answer to the first part of the question was in the affirmative. Dr. Addison would consider the advisability of altering the law.

Registration of Nurses.—In the House of Lords, on May 27th, Viscount Goschen moved the second reading of the Nurses' Registration Bill, which proposes that the College of Nursing (Limited) should be entitled to bear the title, "The College of Nursing," without the addition of the word "Limited," and that the college should be administered by the General Nursing Council. The measure further provides that every nurse registered under the Act should be entitled to vote at elections of the General Nursing Council. Lord Amthill moved the rejection of the measure, his principal contention being that the Nurses' Registration Bill, introduced in the Commons on March 28th by Major Barnett and already well advanced in that House, held the field. To the consternation of the officials of the House, there was some clapping of hands by nurses in the strangers' gallery at one of Lord Amthill's observations. On a warning by the Yeoman Usher the demonstration stopped. Viscount Sandhurst, for the Government, favoured the second reading of the measure brought forward by Lord Goschen, and several peers expressed the hope that both Major Barnett's bill and this would be considered by a joint committee of the two Houses. Lord Sandhurst, while unable to give any undertaking on this point, promised to convey the suggestion to the President of the Local Government Board. Lord Knutsford, while attaching little or no importance to registration by itself, gave his support to Lord Goschen's bill as being, in his view, the better of the two. On a division the second reading was carried by 61 votes to 20.

Medical Officers at Batoum.—Mr. Forster, replying to Sir Arthur Fell, on May 27th, on a question whether it was necessary to keep at Batoum with the British forces medical men who were married, over 41, and who had spent fourteen months or more with the Salonica forces, said that medical men were being demobilized as fast as the military situation permitted, but at present it was impossible to demobilize all who were eligible. The importance of relieving medical officers deserving of consideration on the score of age or length of service was fully realized, but at present it was not practicable to send out reliefs.

Hospital Sites in London.—Dr. Addison, replying to Commander Bellairs, on May 27th, said he was not aware that the sites of London hospitals had ever been considered as a whole. The decision of the St. George's Hospital Committee to extend its present hospital was not one on which the Local Government Board had any power to interfere.

India.

GROWTH OF MEDICAL RESEARCH IN INDIA.

In a speech to a recent meeting of the Imperial Legislative Council, Major-General W. R. Edwards, C.B., Director-General Indian Medical Service, spoke of the vital importance of medical research as a part of the activities of a Government.

Work during the War.

He prefaced his remarks with an account of the war work of the bacteriological department in India. The majority of its members had reverted to military duties, where they formed the major part of the staffs of the central laboratories in Mesopotamia, while those who remained in India were mainly engaged on the preparation of vaccines. The enormous demands from Mesopotamia, East Africa, Egypt, and Palestine, as well as India, were met without resorting to the home authorities. The yearly average quantity of vaccines produced at the Central Research Institute, Kasauli, before the war was 18,500 c.cm.; during the war it rose to 2,500,000 c.cm., and included typhoid, cholera, pneumonia, and influenza vaccines. The same institute also equipped three laboratories, two of which were sent overseas. The Bombay Bacteriological Laboratory at Parel, while continuing its customary work of making plague vaccine, prepared one and a half million doses of vaccines for troops in India.

In spite of the deflection of energies to the war a considerable amount of research in various directions was carried on—by Major McCay, I.M.S., and his co-workers in Calcutta, on diabetes; by Lieut.-Colonel Greig, I.M.S., at Karachi, on cholera carriers; by Lieut.-Colonel McCarrison, I.M.S., on deficiency diseases; and by Lieut.-Colonel Clayton Lane, I.M.S., in Bengal and Dr. Bhaskar in Madras, on the incidence of ankylostomiasis.

Need for Education of the People.

General Edwards took ankylostomiasis as an illustration of the need for education of the masses. The parasite, he stated, affected to a greater or less extent the rural population of the whole of India; in many parts as large a proportion as 90 per cent. were infested. This debilitating disease, which rendered the sufferers unfit for hard work and an easy prey to other diseases, could be eradicated by the use of properly attended latrines. Again, the guinea-worm, propagated by minute water insects (cyclops) swallowed with drinking water, was a veritable scourge; it might be entirely avoided by straining all drinking water through a cloth as the Jains had learnt to do. Water might also be made safe by boiling. Speaking of malaria, he asked how many villagers knew that the disease could not be contracted except through the bite of an infected mosquito, and that the systematic use of mosquito nets and surface drainage would have an enormous effect on its incidence. Villagers ought to know also that typhus fever, which recently ravaged the United Provinces, was spread by lice and could be avoided by cleanliness, and that the germs of cholera, dysentery, and typhoid were derived solely from human excrement, and reached man either through foul drinking water or contaminated food or milk, usually by flies. He referred also to the fact that bubonic plague was disseminated by the infected rat-flea, and might be checked by keeping rats out of houses and grain stores.

Tropical Schools and Institutes of Medicine.

It was essential to have tropical schools in India where men could obtain training in medical research. Thanks to the energy of Sir Leonard Rogers, I.M.S., a school of tropical medicine, with a special hospital attached to it, would shortly be opened in Calcutta, and there was every prospect of another school of tropical medicine and medical research being opened shortly in Bombay, based on the Parel laboratory, and having a special hospital attached to it. Sir Dorab Tata, by a munificent gift of a lakh a year, had enabled the Bombay Government to proceed with the school, which would be well equipped and have a number of valuable scholarships, including travelling scholarships. In addition, it was necessary to have at least two institutes of medical research. He hoped to see an imperial institute, comprising a library and bureau of medical research, opened in Delhi, and another in

Southern India. For the first, dependence was placed on the Government of India; as to the second, he had reason to believe that reliance could be placed on the munificence of the Tata family and other wealthy philanthropists of the Presidency of Bombay.

PROPOSED INDIAN INSTITUTE FOR MEDICAL RESEARCH.

The scheme referred to by General Edwards in the last sentence was initiated in a memorandum prepared about a year ago by Lieut.-Colonel Robert McCarrison, I.M.S.

In some introductory paragraphs he said that the introduction of the Western system of medicine was one of the greatest boons British rule had conferred on India, and its practice in India had already been the means of securing for mankind benefits of inestimable value. In India the practice of ophthalmology had attained its highest perfection; in India litholapaxy had its birth; in India the mosquito was shown to be the vector of malaria and the flea the vector of plague; in India methods of cure of the dysenteries and of cholera were devised; in India the prophylactic use of vaccines was inaugurated. These and many other notable achievements had secured for India a prominent place in the van of medical progress, but, as was to be expected from the evolutionary history of medicine in India, this honourable place had been won by others than her own sons. The time must shortly come when the major part of the burden and responsibility of maintaining and exalting this place amongst progressive nations would be borne by India's own men of science. The future of Western medicine in India depended not so much on this or that state service, as on the Indian people themselves and on the Indian medical profession. There were in every country many impediments to progress. The professional outlook was often too narrow, and the nations failed to recognize and utilize to the full the profession's enormous potentialities for good. The true ideal of every medical man should be to achieve mastery of his art, or some branch of it. Another hindrance to medical progress was a tendency to regard the acquisition of a medical degree or qualification as the high-water mark of endeavour, and an indication that further study was not needed. In India this tendency was aggravated by the paucity of facilities for post-graduate study, and a lack of opportunities for Indians to pursue the higher branches of medical knowledge.

An Appeal to Indians.

Lieut.-Colonel McCarrison then put forward a scheme, carefully worked out in detail, for the provision in India of greater facilities for higher medical education in such subjects as biochemistry, protozoology, and the other sciences correlated to medicine. India should not look only to the Government for a solution; in no country did a government provide so liberally for medical education and at such comparatively trifling cost to the individual. The additional facilities for which he asked should be provided by the people of India themselves. The Rockefeller Institute for Medical Research, established by the generosity of a single individual in America some years ago, was the most perfect organization in the world for the study of disease, and Japan afforded an example of the rapid growth of Western medicine in a country into which it was introduced much more recently than into India.

Lieut.-Colonel McCarrison then proposed the foundation by the people of India themselves of an Indian Institute for Medical Research on the lines of the Rockefeller Institute. Medical research held a high position among forms of human endeavour, and in the tropics especially was an essential preliminary to industrial advance; indeed, on it largely depended the success of commercial enterprise. Many industries in India were handicapped by the unrestrained ravages of disease—malaria, plague, ankylostomiasis, and leprosy. He then described the composite character of medical science to-day, and continued:

The modern tendency exhibited in Western countries to isolate the various branches of medical knowledge into watertight compartments and to separate them from the wide outlook of medicine as a whole is greatly to be deprecated. To attain the maximum of result there must be collected together into one institution masters of each subject, each fitting into his own place, and thus making smooth the running of the whole mechanism. Only in this way can the study of disease be satisfactorily and speedily carried out. It is necessary to establish a "company" or "team" of research workers for its

successful execution. In its efficient conduct medical research differs but little in principle, though it differs vastly in complexity, from the conduct of any constructive business enterprise—for example, that of mechanical engineering. Just as no single medical research worker can in his own person bring all that diversity of knowledge to bear on a difficult problem which is necessary for its complete elucidation, so no motor engineer is capable of constructing an automobile from the tyres to the engine complete in every detail. The firm of automobile manufacturers employs its designers, its engineers, its electricians, its carriage builders, its tire makers; these together, working under a directing head, produce the perfect whole. The director himself may be technically expert in no single branch of this work. His utility consists in his comprehensive, if general, grasp of the whole range of the processes of manufacture, and in his capacity for suggesting or devising improvements. So it is with the more complex mechanism of the human body. Workers who would study the derangements of this mechanism must include physiologists, pathologists, radiographers, bacteriologists, biochemists, and pharmacologists, the work of all being guided and directed to the perfect end by the imagination and capacity for original thought of a director. Just as in the battles of nations, so the battle against disease must be waged on a wide and comprehensive scale. The "sniper," however useful, cannot win the day; organization, generalship, and co-operation of all arms—these are the requisites of victory.

Research Institute Hospital.

A principle which, he urged, must be accepted at the outset was that the work of laboratories must not be separated from the clinical side of medicine. The research worker, under the scheme proposed, would first and foremost study the disease in the natural laboratory of the human body; consequently the proposed Indian Institute must comprise a large hospital. Such an institute should also afford opportunities for the examination of Eastern methods of therapy in the light of scientific truth. As an illustration of the application of the principle of combined laboratory and clinical study, he chose diabetes, and suggested that for a period the whole or part of the available hospital accommodation of the Institute might be set apart for the reception of cases of the disease from hospitals throughout India. The patients would be treated by the best methods known, and the conditions present would be studied by the physiologist, the radiographer, the bacteriologist, the biologist, and the pathologist. Epidemiological study would be of importance, not only in the infectious diseases, but also in those of the class to which diabetes belonged. An institute of medical research must include clinical, physiological, chemical, bacteriological, metabolic, protozoological, radiographic, histopathological, entomological, and epidemiological investigations, conducted under the direction of one chief of the staff.

Staff of the Institute.

The director in chief should be a physician of high standing and wide culture, having a broad grasp of the whole range of medicine, of vivid imagination, endowed with originality and capable of directing wisely the scientific activities of his staff. At the head of each department should be a director of high repute, and it was essential that no mistake should be made at the beginning in this direction. The director of each department would direct the scientific inquiries in it, facilitate the studies of scholars and research workers, and act as expert adviser of research workers from any part of India. The director in chief and the directors of departments would form a scientific council to determine the scope and character of researches, to collate the results obtained, to estimate the suitability of independent research workers, to appoint scholars and fellows, and to arrange for yearly courses of lectures open to all graduates of medicine, and for the publication of scientific reports.

Scholarships and Fellowships.

Lieut.-Colonel McCarrison hoped that in this way the Institute would so educate Indian-born medical men in all the higher branches of medical science that within a term of years, say fifteen to twenty, the higher appointments and the direction of departments might be held by Indian medical men. The endowment of the Institute should provide for scholarships to be offered for competition amongst Indian-born graduates of medicine of either sex. The length of time for which a scholar should hold office would be determined in each case by the scientific council, with a maximum of three years. If a scholar did not

disclose capacity for research, he might yet be permitted to retain his scholarship long enough to enable him to follow his particular subject with the view of becoming a specialist in general or consulting practice. From among the scholars selections would be made for fellowships tenable for three years; if these showed capacity for original work, they would then become eligible for the appointment of assistant director when a vacancy occurred. The Institute would also afford laboratory facilities to a limited number of research workers, neither scholars nor fellows, who were pursuing independent investigations.

In this way young physicians, who aspired to consultant or superior class practice, would find facilities for acquiring that experience and additional education requisite for the highest class of professional work. Three years as a scholar at the Institute and three years as a fellow would give the holder a status and experience which he could not otherwise acquire even in Great Britain. Under this system the young physician would become subject to the discipline of science, would learn to appreciate the difficulties of all scientific pursuits and the "fallibility of the faculties upon which he depends" (Osler).

Organization.

In giving details of the way in which these principles should be applied Lieut.-Colonel McCarrison wrote as follows:

The Department of Clinical Research should include a hospital divided into five wards of twenty beds each. The hospital staff should include scholars or fellows acting as house-physicians for these wards. These appointments should be open, by competition, to graduates of Indian universities, both men and women, the tenure of the appointment being six months to three years as for scholars in other departments of the Institute. During the tenure of the appointment the house-physician would be called upon to assist for a given period in each of the departmental laboratories of the Institute. He or she would in this way acquire a sound and highly practical knowledge of epidemiology, helminthology, bacteriology, protozoology, etc., which would prove of the utmost benefit in the practice of his or her profession on leaving the Institute.

I propose also that the staff should include a chief physician as head of the departments of Clinical Research and Epidemiology, and a second physician who will be in charge of the treatment of patients, and assistant director of these departments. It is hoped that these two appointments may ultimately be filled by selection from amongst the most brilliant of former house-physicians.

The scheme included the provision of an adequate library.

It was suggested that the Institute should be established in a healthy, equitable and bracing climate, with good railway communications, and that it should comprise the following six departments:

Research Departments.

1. *Epidemiology* (included with the Department of Clinical Research).
2. *Physiology*, including *Physiological Chemistry* and *Calorimetry*, and *Dietetics*.
3. *Pathology*, including *Morbid Anatomy*, *Helminthology*, and *Bacteriology*.
4. *Protozoology*, including *Entomology*.
5. *Experimental Pharmacology*, including *Biochemistry*.
6. *Radiography*, *Electro-therapeutics*, and *Photography* (including microphotography).

The departmental laboratories should be situated in separate blocks or wings for each department, arranged in parallel and be readily accessible from the hospital wards. They should be designed on the most modern principles, and equipped in accordance with the most modern standards. Provision should also be made in the plans of the Institute for the addition of such other departments as the progress of medicine may render necessary.

The hospital should consist of five single-storied wards, each with an area of 2,500 square feet, to be utilized as might be found most convenient for the work at the moment in hand. Each ward should contain twenty beds, giving an area of 125 square feet per bed. If found desirable, any required number of special wards could be formed for paying patients, with light reinforced concrete partitions. Such temporary divisions could easily be made also if required for any particular disease under investigation or for caste purposes. Each ward should be provided with its own bathrooms and lavatory accommodation and be built and equipped in accordance with the most approved principles of modern construction.

An operating theatre with the necessary rooms should be provided in a separate block. The administrative

block would provide offices for the staff of the clinical research department, with male and female waiting rooms.

Finance.

Lieut.-Colonel McCarrison gave detailed estimates of the cost of erecting and maintaining such an institute, and proposed that the director in chief should receive 3,000 rupees a month and the directors of departments from 1,500 to 2,000 rupees a month; the assistant director in each department should begin with 500 rupees and rise by annual increments of 50 rupees to 1,000, with in each case a bungalow or quarters. Fellows, he suggested, should receive 400 rupees a month and scholars 200 rupees, in both cases with free quarters. The final estimate for cost of erection and equipment was £150,000, and for the annual recurring cost of maintenance £40,000; this would involve a foundation fund of £800,000 and a building fund of £150,000. Allowing for unforeseen expenditure the total sum required was estimated to be one million sterling.

Scotland.

ROYAL COLLEGE OF PHYSICIANS.

THE Morison Lectures before the Royal College of Physicians of Edinburgh will be given next week by Lieut.-Colonel A. Ninian Bruce, M.D., D.Sc., F.R.C.P. Edin., R.A.M.C. The subject is the functional nervous diseases of the war. The first lecture, on June 2nd, will deal with conversion hysteria and discuss its prevention, development, and treatment, and the psychic origin of functional paralysis. In the second lecture, on June 4th, anxiety states will be considered, and the significance of repression and dissociation discussed. The third lecture, on June 6th, will deal with mental states, and include the discussion of borderline states produced by the war and a comparison of war psychoneuroses with those of civilian life. The lectures will be delivered in the hall of the College at 5 p.m. on each day.

TREATMENT FOR HYDROPHOBIA.

No case of rabies has yet been reported in Scotland, but the Local Government Board is making arrangements by which persons bitten by animals affected with rabies or suspected rabies will be treated by Professor Ritchie at the Royal College of Physicians' Laboratory, 2, Forrest Road, Edinburgh. Until the arrangements therein are complete any Scottish case will be sent to Dr. Dudgeon at St. Thomas's Hospital. If a medical practitioner is satisfied that antirabic treatment is essential for any case, and the person bitten agrees, a telegram should be sent to Dr. Dudgeon at St. Thomas's Hospital, Westminster Bridge, London, S.E.1.

EDINBURGH ROYAL MATERNITY HOSPITAL.

The report presented to the annual meeting of the Edinburgh Royal Maternity and Simpson Memorial Hospital on May 19th, when Mrs. Chalmers Watson, M.D., C.B.E., was in the chair, brought out the fact that only in one previous year (1911) had the numbers of patients attended through the hospital been larger; but there was a difference in respect of the number of in-patients, who in 1918 were 846 as against 591 in 1911, a circumstance which proved the growing tendency of married women to seek the help the hospital offered. In the outdoor department 569 patients had been attended in their own homes, and 521 at the Leith branch. The total for the year was 1,936. In addition to these cases of delivery 947 expectant mothers had been seen at the antenatal clinic under Dr. Ballantyne's care, of whom no fewer than 478 were new cases. Mrs. Chalmers Watson, in moving the adoption of the report, Councillor Young, the chairman of the health committee of the town council, and Professor Lorrain Smith, dean of the faculty of medicine in the university, all referred to the important part which the hospital was playing in the carrying out of the Corporation of Edinburgh's maternity service and child welfare scheme, and would play in the new scheme for dealing with venereal disease as it affected pregnant women and their infants in Edinburgh, Leith, and the Lothians. On account of the

increased number of women making use of the hospital, and of the part the institution was fulfilling in the city's welfare schemes, the task of building a larger and up-to-date hospital was pressing upon the directors, and the opinion was expressed that a war memorial in Edinburgh could take no more fitting form. Mrs. Chalmers Watson made the interesting and eminently practical suggestion that in the case of primiparous women their stay in the hospital should be lengthened to one month subsequent to delivery, and that during these extra two weeks they should receive instruction in the care and feeding of their infants, and be told of the commoner ailments of children and their simple remedies. She also expressed the hope that before long the directors would be able to complete the necessary arrangements for the occasional appointment of a woman doctor as a resident medical officer in the hospital.

England and Wales.

BUBONIC PLAGUE AT LIVERPOOL.

THE Secretary of the Local Government Board has issued the following statement:

A soldier passenger on board the ss. *City of Sparta*, which left Bombay on April 3rd, was taken ill during the voyage and died of bubonic plague. He was buried at sea. The vessel on arrival at Liverpool on April 29th was treated as a suspected ship and diverted to the mooring station, where all the usual precautions were adopted; portions of the ship were fumigated with sulphurous acid gas, and subsequently sprayed with petroleum emulsion. The Local Government Board have now received an intimation that a native member of the crew fell ill and was removed to the Liverpool Port Sanitary Hospital on May 13th. He developed a bubo on May 16th, and died next day. The illness was diagnosed as plague, and this diagnosis has been verified by bacteriological examination. The Local Government Board are making further inquiry in regard to this case through one of their medical inspectors.

MENTAL DEFICIENCY FROM THE PREVENTIVE ASPECT.

Under the above title Dr. Meredith Young has recently issued an eight-page pamphlet, apparently of the nature of a report to the Medical Deficiency Act Committee of the Cheshire County Council, to which he is medical adviser. Succinctly gathering up under seventeen heads the causative factors to which mental deficiency has been attributed, he considers particularly the physical conditions so frequently found associated with mental defect, as in cases of microcephaly of antenatal toxic origin, of lobar sclerosis, hydrocephaly, acute anterior poliomyelitis, and certain forms of encephalitis and meningitis due to bacterial infection of various kinds. He proceeds to point out how helpful an efficient maternity and child welfare scheme may be in the prevention of mental deficiency, and lays stress on the importance of medical and other workers in such clinics being thoroughly acquainted with its earliest manifestations. To this end he suggests that in every large town there should be a well-equipped psychiatric clinic where young defectives could be studied. The knowledge thus gained, both of children and parents, would become a valuable accessory to preventive treatment, especially in the promotion of improved environmental conditions. The key to the preventive problem lies, however, in the recognition of heredity as the preponderating factor in the production of mental defect, and Dr. Young insists on the importance of the absolute prohibition of the marriage of all persons recognized as mentally defective, and strongly advocates compulsory sterilization in spite of sentimental opposition here, and even constitutional objections such as have been held in America to invalidate legislation on the subject by individual States. As regards compulsory segregation, now authorized under the Mental Deficiency Act in certain cases, Dr. Young condemns the parsimonious inaction of many local authorities in this matter, and also in neglecting the prescribed census of mental defectives in their districts; and he advocates duly remunerated notification by medical practitioners of cases coming under their notice which call for action by the local authority.

Dr. Meredith Young's pamphlet is opportune in view of the need of stimulating public authorities to carry out more efficiently their duties under the Mental Deficiency Act which came into operation over five years ago, but owing to the strain of the war has so far been but very imperfectly administered. It is not true economy to defer the expenditure of funds which, wisely laid out, might be expected to diminish in the near future the burden entailed by feeble-mindedness on the community—a burden likely to increase in geometrical ratio so long as any available means for its elimination is withheld.

RESETTLEMENT OF NURSES.

At the present time there are many nurses needing employment who were fully trained sisters or nurses before the war. Many gave up good civilian appointments in order to nurse the wounded. Now that the fighting is over and the hospitals and nursing homes are filling up their staffs again, it is their duty to fill vacancies from among the women who have risked and suffered much to serve their country. The Ministry of Labour has set up a Nurses' Demobilization and Resettlement Committee, which is prepared to give institutions all information as to demobilized nurses seeking employment. The Committee undertakes to supply at once women whose training has fitted them for responsible posts, and whose services have given them a claim on the consideration of their countrymen. Applications should be made to the Secretary of the Committee, 16, Curzon Street, Mayfair, W.1. When demobilization is complete it is estimated that there will be 3,000 trained sisters and nurses desiring work. The Committee is prepared to act as an intermediary between them and the hospitals, nursing homes, and public institutions whose staffs have been depleted by the war. As announced in our issue of May 17th, the Minister of Labour has appointed a subcommittee for Scotland of the Nurses' Demobilization and Resettlement Committee to deal with the resettlement of Scottish nurses in civil life, with special reference to those who desire to find post-war employment or undertake some form of training.

Correspondence.

VOLUNTARY HOSPITALS.

SIR.—The air is full of reforms—many good, some indifferent, and not a few bad—and not least amongst these reforms is the reorganization of the medical service in this country. That such a reorganization is desirable is recognized by the medical profession not less than by the Government, though it is to be feared that the latter do not view the matter entirely from the same standpoint as the former. One of the chief reasons for this movement is the great advance in medical science during recent years and the highly complex and specialized treatment resulting: often, to quote the words of another, requiring "team work in specially equipped institutions." And it seems only fair that this should be available to all, rich and poor alike.

How do our voluntarily supported hospitals meet this situation? To begin with, most of them are in straitened financial circumstances, nor is this condition likely to improve having regard to increased taxation and other burdens imposed on those who hitherto have supported them. They minister to the needs of paupers, those of moderate means with an income above a certain limit being looked upon, and rightly so under present conditions, with disfavour. The members of this very large class are indeed in an unenviable position. Suppose the necessity for a severe operation should arise. They cannot afford an expensive nursing home and the fee which a surgeon would be compelled to charge outside of an institution, though they are willing and able to pay moderate fees to both hospital and operator. What happens? They are either smuggled into the hospital and maintained at its expense in a public ward—which, though perfectly good, lacks those refinements to which they should be entitled—or they pass to the nursing home, thereby incurring expenses which cripple them for many a long day. Either way injustice is done. Again, increasing numbers of the labouring classes are now in receipt of wages which can

hardly be said to qualify them as paupers. Are they to be admitted absolutely free to institutions supported by voluntary contributions? I do not think that they themselves desire it, and, on the face of it, it is obviously wrong.

What are the remedies? One is free hospital treatment for all, under Government control with paid staffs. I commend this to those who have had experience of departmental bureaucracies during the war. Another—and to my mind a better—is the admission to our hospitals of paying patients with fees graduated according to their means. Under this scheme pauper cases would be treated gratuitously; for those whose income exceeded a certain fixed limit a sliding scale would be in operation according to the accommodation supplied—ranging, say, from 30s. to £2 a week in an open ward up through cubicles at three or four guineas to the more expensive private rooms. The medical staff would be allowed to charge fees to the paying patients, on a graduated scale laid down by the hospital authorities. In this way hospital abuse would be abolished; managing boards would be able to prove to the Government that their institutions were largely self-supporting and on a much firmer financial basis than when wholly dependent on charity; voluntary subscriptions should be the more readily obtainable since the benefactors would know that their gifts were entirely devoted to the absolute poor; and all, rich and poor alike, would have institutional treatment at their command.

I have lately taken the trouble to write to certain representative American hospitals on this subject, and have received some most instructive replies. Nearly all take paying patients, and nearly all derive a very considerable part of their income from so doing. Some have only recently adopted the scheme, but they all agree that it is one which is growing in popularity. To take a few examples:

The Jefferson Hospital, Philadelphia, in 1918 received 3,052 fully paying patients, 1,610 partially paying, and 4,662 free. Its income was made up in round figures thus: From working of hospital (chiefly fees from patients) 240,000 dollars, from bequests and investments 28,000 dollars, and by grant from State of Pennsylvania 99,000 dollars.

The Lakeside Hospital, Cleveland, in another year had 1,263 fully paying patients, 2,844 partially paying, and 1,658 free. Its income derived from operating the hospital was 198,000 dollars, as against 7,000 dollars from voluntary contributions and 100,000 dollars from investments and endowments.

The Johns Hopkins Hospital at Baltimore in 1917 drew no less than 576,000 dollars from hospital receipts, a very large proportion of its total expenses, which were 714,000 dollars.

Similar figures are given by other institutions.

It is good to see ourselves as others see us, and, in conclusion, I should like to quote from the letter which I received from the Superintendent of the Lakeside Hospital, Cleveland. He says:

From the standpoint of an American, English hospitals appear hampered by your traditions, which have kept down the development of hospital work and the development of institutions, owing to the fact that your hospitals are for paupers only. It seems to us that this has resulted in the maintenance of lower levels of scientific and general efficiency in the institutions. At any rate, we like our fundamental principle much better—that is, that the very best and the most effective hospital service shall be available to every person when in need of it, and that the payment therefor shall be made according to means.

—I am, etc.,

Reading, May 18th.

W. BERNARD SECRETAN.

THE TREATMENT OF THE NEURASTHENIC PENSIONER.

SIR.—No one who has had much to do with the examination of soldiers who have been invalided suffering from neurasthenia can maintain that the present state of matters is satisfactory. Very many come up for re-examination after an interval of some months, and it is found that their condition has in no way improved; they would appear to be drifting into a fixed and chronic state. The immediate functional physical symptoms have passed away, but there remains a morbid state of mind which is most intractable. That this is so has been recognized by the authorities, and I understand that it is proposed to establish special hospitals in different areas for the treatment of these cases. From my personal observation I am not convinced that such hospitals are necessary, nor am I convinced that hospital treatment is the best in the

majority of the cases; and before the authorities embark on this scheme I would suggest an alternative method which might be given a trial. Briefly stated, it is as follows: That there should be appointed in different areas a staff of physicians who are familiar with the treatment of these war neuroses, and that the pensioners should be treated privately. This could be done either by domiciliary visits, or by the pensioner visiting the physician in his consulting room. The important point is that he should be seen by the physician in surroundings which in no way suggest army conditions, that his mental symptoms should be analysed, and his condition made clear to him. A few visits and conversations at intervals of a week or two would do much to restore the pensioner's confidence in himself and hasten his recovery. After all, a great many come from comfortable homes—it is not their environment which prevents their getting better. Most of the pensioners I have questioned are strongly averse to returning to a hospital, and unless these cases go willingly the difficulty of their treatment is much increased.

Six months have now passed since the armistice—the type of disorder is approaching more closely the type of neurasthenia one was accustomed to meet with in the civilian. It is possible to cure the civilian at his home, and while he continues to do his work, modified a little, and it should not be impossible to cure the soldier.—I am, etc.,

Bristol, May 20th.

JAMES M. RUTHERFORD.

HYPNOSIS, SUGGESTION, AND DISSOCIATION.

SIR,—Let me say, in reply to Dr. Mercier's last letter, that my views on the value of light hypnosis are based on work done, not in the depths of King's College psychological laboratory, but in hospitals in the field in France and elsewhere during the past four and a half years. Having investigated and treated nearly 5,000 cases of psycho-neurosis during this time, I feel that I have some right to an expression of my own views on the subject.

I have found that in *early* cases of war neurosis showing loss of memory for the incident and other functional symptoms, the reinstatement of these memories under light hypnosis, in such a way that the accompanying emotion of fear is again aroused with hallucinatory vividness, causes the disappearance or amelioration of the other symptoms. Suggestion plays no part in this dispersal of symptoms, although it is, of course, involved in the preliminary process of inducing the hypnosis.

More chronic cases of psychoneurosis do not respond in quite the same way. On these and other observed facts I have based a theory and a therapeutic method which do add something new to the doctrine of dissociation and hypnosis, and which I hope to explain in a forthcoming article in your JOURNAL.

Sir Robert Armstrong-Jones does good service in distinguishing the neuroses from the psychoses as regards reaction to hypnosis. I am not of those who tend to regard hypnotic suggestion as a panacea for mental ills. Light hypnosis is needed in only a very small minority of nerve cases, and in them should be used sparingly.—I am, etc.,

WILLIAM BROWN.

Psychological Laboratory,
King's College, May 20th.

DISAPPOINTMENTS AFTER GASTRO-ENTEROSTOMY.

SIR,—From what I myself have seen, I have no hesitation in saying that many gastro-enterostomies are done when no definite diagnosis has been made. During the past eighteen months I have seen three cases where gastro-enterostomy had been performed when the symptoms had been due to lesions of abdominal organs other than the stomach or duodenum. The first was a case of advanced atrophic cirrhosis of the liver, the second of extreme retroflexion of the uterus with a chronic appendicitis, and the third an ovarian cyst the size of a Jaffa orange, a subperitoneal myoma of the uterus, and haematosalpinx.

The second case had had gastro-enterostomy done with no benefit and two subsequent operations for adhesions. When she came into my hands x-ray investigation showed evidence of a junction ulcer, and no barium would enter

the appendix. Bimanual vaginal examination revealed extreme retroflexion of the uterus.

I did transgastric excision of the junction ulcer, and subsequently removed the appendix and performed a ventro-suspension. She is now in good health after four years of suffering.

Dr. Hutchison, in summing up, advises that great care should be taken in selecting cases for gastro-enterostomy, and that a physician should be consulted as well as a surgeon. I would go still further, and suggest that no patient be subjected to gastro-enterostomy until he has been thoroughly x-rayed by an expert radiographer. This is the only sure means of eliminating the possibility of a hypotonic or atonic stomach or gastropoiesis. Since I have followed this course, thanks to the advice given me by Dr. Spriggs of Duff House, I have seen nothing but good follow my gastro-enterostomies.

Many surgeons in big centres have not the facilities for following up their cases and profiting by their mistakes, but when a surgeon is practising in a district like mine his results have got to be good or he gets no more work.

The Mayo type of gastro-enterostomy gives, in my opinion, the most satisfactory results, and I am sure that fourteen-day catgut is far preferable to either silk or linen for the inner layer of sutures.

The early giving of solid food has no advantage, and is positively dangerous. Why not treat gastro-enterostomy like a recently bleeding ulcer and keep the patient on a Lénhartz diet?

There is not enough co-operation between surgeon and physician in the handling of stomach cases. Many cases undergo unnecessary operations, but there are almost quite as many cases which ought to be operated on and are not touched till too late. Surely, with all the lessons learnt during the late war of the value of team work, we may hope to see some real progress made for the benefit of the middle classes who at present are neither in the hospital class of patients nor among the wealthy, both of which classes can depend upon getting thorough investigation before being submitted to operation.—I am, etc.,

Banff, May 12th.

W. MANSON FERGUSON.

THE ETIOLOGY OF AORTIC REGURGITATION.

SIR,—To those who have had experience in the *post-mortem* room it may appear that in the careful analysis of cases of aortic regurgitation occurring in recruits Dr. Russell Wells and his colleagues have laid too great stress upon the teaching of textbooks regarding the morbid anatomy of cardiac diseases. Morbid anatomists will probably agree that there is no evidence that diphtheria, scarlet fever, or pneumonia cause endocarditis, and gonorrhoea—if ever responsible for such disease—is so only for the malignant form. Neither does syphilis directly attack the aortic valve as an endocarditis. Its influence in producing aortic regurgitation is indirect through the medium of the aorta. Not, however, through the more superficial forms of disease of the artery, which generally go by the name of atheroma. The deeply invading, much less calcareous, and more fibroid form of disease of the aorta, which appears generally to be due to syphilis, frequently extends to the aortic valve, especially when the distribution of the disease is limited—as it often is—to the intrapericardial portion of the arch of the aorta. The resulting fibroid lesion of the aortic valve contracts the cusps and leads to virtually uncomplicated regurgitation—that is to say, there is no associated stenosis. Stenosis of the aortic valve—a disease in which there are marked calcareous changes in the cusps—is scarcely ever associated with disease of the aorta. The writers of this paper ask "What is the cause of atheroma?" There are probably several causes, but apparently the cause of calcareous disease of the aortic valve is quite distinct from the causes of atheroma.

It cannot be said that there is any evidence in the *post-mortem* room that strain causes valvular disease. Retroversion of a cusp of an aortic valve may occur as the result of strain, but the cusp must be diseased first. The belly of the cusp must have been almost obliterated by fibroid contraction, as a consequence of, it may be, the fibroid form of valvular disease which spreads from the aorta. In one case which I met with the retroversion of the cusp occurred in a travelling acrobat, and had apparently taken place while a somersault was being performed in the

air. When the cusp is softened rupture may occur. The chronic form of disease which leads to rupture, like that which may result in retroversion of a cusp, is the disease which spreads from the aorta to the valve—in other words, is the syphilitic form.

As a morbid anatomist, I concur in the opinion that rheumatism has certainly been the cause of aortic regurgitation in the great majority of instances met with before the age of 40. After the age of 40, cases of death from aortic regurgitation due to rheumatism are rare. Virtually all fatal cases are found to be associated with fibroid disease of the aorta—in other words, are syphilitic.

It should, perhaps, be mentioned that in diseases such as diphtheria, even in children under two years of age, there may not only be scattered patches of disease of the arteries, including the aorta, mainly of the inner coat, but also similar patches in the valves—either the mitral or aortic. Possibly disease of this nature has been called endocarditis, and the statement that diphtheria, scarlet fever, etc., may be causes of endocarditis, copied from textbook to textbook. These small patches may become calcified into very thin calcareous plaques, but there is no indication that they ever hamper the affected valve.—I am, etc.,

Norwich, May 12th.

THEODORE FISHER.

INSURANCE: A FRESH START?

SIR,—The reason why the thought arises in Dr. Hodgson's mind (p. 658) that the report of the Insurance Acts Committee is "an attempt at keeping alive a service that is wrong, in principle, from its foundations," is that he apparently is still content to be paid only for curing his patients, and does not realize that his efforts and advice, which tend to prevent or shorten their illnesses, go unremunerated. "Prevention is better than cure"—this is the principle underlying M.25, and any system of payment by capitation. "Cure is better than prevention" can be the only principle that urges men to ask for payment on an attendance basis.

Granted an adequate capitation fee, surely the profession must soon realize that with the modern trend of preventive medicine an agitation to return to payment by attendance would be a suicidal policy.

Let me shortly explain my point by an example. During the influenza epidemic all my acute cases were treated with vaccines, insured and private patients alike. I am satisfied that by so doing I diminished by about one-half the number of visits I should otherwise have had to pay.

On my insured patients, paid for on a capitation basis, I gained. On my private patients, paid for on the antiquated attendance basis, I lost heavily.

I am convinced that the right policy for the profession is to look more favourably upon possible extensions of insurance practice, always granted that the capitation fees are adequate.—I am, etc.,

Melksham, Wilts, May 25th.

T. WOOD LOCKET.

SIR,—Dr. Stanley Hodgson in his letter under this heading makes several statements that are at least open to challenge. He assumes, which is not true, that adequate return for work done can only be obtained by a "per attendance" payment. He asserts that the amount of services required is governed by no known law, making no allowance for the working of averages. His simile of the battery of field artillery is imperfect. If the whole field artillery of a known average number of guns at risk (that is, at the war) were included and the risk undertaken for a period of years instead of six months it would be quite possible to estimate the average number of shells required per gun per annum and to fix a price per gun for the shells required. A great majority of practitioners are satisfied that the capitation method of payment works quite fairly and is satisfactory, but there are still many who would prefer the payment "per attendance" if payment were made in full.

A great service would be rendered to the profession by any one who could devise a scheme that is reasonably simple and practicable which will provide for payment "per attendance" and be not open to exploitation by the

unscrupulous when the payment is being made by a third party and not by the patient. It is not sufficient to set up machinery to deal with the unscrupulous; exploitation would have to be prevented. With such a scheme a Government could undertake to pay in full. So far no such scheme has been put forward, and even when it is many of us will still prefer payment on the capitation basis as being fair and simple.—I am, etc.,

Birmingham, May 26th.

H. G. DAIN.

THE LAST COMPLAINT OF THE SPECIAL RESERVE.

SIR,—I feel sure you will welcome the last complaint of the Special Reserve. I have at sundry times burdened your columns with figures illustrative of the preferential treatment accorded to temporary officers. The complete figures show that I am about £300 out of pocket by being so foolish as to train for an emergency before the emergency arose. It will be well known to you that Government departments care for none of these things. Since my return to civil life I have been told that I "had to go," with the inference that there could be no credit to me in going so early. May I correct this error for those of your readers who may share it?

The Special Reserve was raised and trained for a definite purpose, namely, to form part of the Expeditionary Force. Nor was there any doubt as to where that force was most likely to be used—it was well known that it was likely to be used as a defensive measure against a Continental power at no distant date. This was in 1909. We joined that force of our own free will, after its purpose had been explained to us by an emissary of the War Office. We could well see what havoc it might play, as it has played, with our private interests. I submit that we are entitled to more credit than those who came later at their own convenience for short periods only. *Bis dat qui cito dat* was truer then than ever in August, 1914.

My final complaint is with regard to my status, now that we are demobilized, compared with that of a temporary officer of thirteen months' service. I have nearly ten years' service, and may get my majority if the Special Reserve is in being another two years (which seems unlikely). The temporary officer with the higher pay and less service is also a captain. I have served under at least one temporary officer of less than one year's service who had been promoted major already, as officer in charge of a medical division, although he was not even a practitioner of medicine, but an M.O.H. No doubt he retired as a major.

We have been told often enough that we get the same pay as regulars (which of course is not the case) and that we are entitled to the same promotion. But the regular captain has had accelerated promotion, while this has not been granted to the Special Reserve.

I suggest to the authorities that as (1) we have been paid less than promised; (2) have suffered more than even the Territorials, although these went out very early—such as wished to, and they were very many; (3) have been stated by a Government-appointed Commission to be suffering from an unjustifiable anomaly; and (4) now find ourselves junior to those who have done less and received more—that all those who were captains in the Special Reserve in August, 1914, should forthwith receive accelerated promotion to the rank of major. The promotion could date from the day after demobilization, for if it dated before it might entail a bigger gratuity, which I am sure the Government would regret.

This concession would entail no public expenditure, and none above the rank of staff lieutenant need be seriously disturbed by the necessary clerical work.—I am, etc.,

May 20th.

GORDON WARD, M.D., G.P.

A TUBERCULOSIS SERVICE.

SIR,—In your issue of May 24th, p. 657, Dr. Halliday Sutherland writes of the "clinical prevention of tuberculosis" as something in addition to diagnosis and treatment, and apparently under "clinical prevention" he would place home visitation and after-care work. He appears to advocate, mainly on the grounds that home visitations are "essentially clinical" duties, that tuberculosis health visitors and nurses should be entirely under

the direction of the tuberculosis medical officer. But even if we agreed with him in principle this rearrangement could not be made general, because the special tuberculosis health visitors and nurses are generally the luxury only of the boroughs and of some county councils. In a great part of Great Britain the health visitor and nurse who do tuberculosis work also perform child welfare work, and discharge other duties which lie quite beyond the sphere of operation of the tuberculosis medical officer.

Dr. Sutherland also considers that the tuberculosis medical officer should report and give advice, direct, to the sanitary authority; but surely the advantages of one chief administrative medical officer, who works in close co-operation with medical colleagues whose official duties are mainly clinical, and who directs and advises upon the whole field of public health activities, are so great that no change is likely to take place. The Society of Medical Officers of Health has many members who are tuberculosis medical officers, and the society is desirous of promoting their interests in every possible way; but it does not believe that either their interest or those of the public health would be served by the adoption of Dr. Sutherland's policy.—I am, etc.,

HENRY KENWOOD,

President of the Society of Medical Officers of Health.

London, May 27th.

Obituary.

FRANCIS JAFFREY, F.R.C.S.,

Consulting Surgeon St. George's Hospital, London.

The news of the death of Francis Jaffrey, at Fowey, on May 20th, will come as a shock to a large circle of friends, for, although he was forced by ill health to retire from practice in London in 1914, he had recovered sufficiently to undertake the duties of honorary secretary to the Fowey Cottage Hospital and surgeon to the Fowey Auxiliary Hospital for Wounded Officers.

Jaffrey was the son of the late Archibald Jaffrey of Adelaide, and was born on February 6th, 1861. He received his education at St. Peter's College, Adelaide, where C. E. Todd, who died last year, and Sir Edward C. Stirling, whose death occurred in March last, were also educated. The fact that these two Australians had entered at St. George's Hospital may possibly have influenced Jaffrey in his choice of a medical school. He took to medicine rather later in life than is usual, having started his career in the city. He entered St. George's in 1885, and while a student was given to athletics; he was captain of the Hospital Rugby Football XV in 1888, and also helped St. George's to secure the Lawn Tennis Cup on at least two occasions. He took the diplomas of the Conjoint Board qualification in 1890. He was house-surgeon in 1891, and in the following year accepted the post of R.M.O. to the Atkinson Morley Convalescent Hospital at Wimbledon. Returning to St. George's in 1897, he was surgical registrar and demonstrator of anatomy, and in that year became F.R.C.S. Eng. He was appointed assistant surgeon to St. George's Hospital in 1898 on the retirement of Mr. Pick, became surgeon in 1905, and consulting surgeon in 1915. Another institution to which he was attached was the Belgrave Hospital for Children, and for some years he was consulting surgeon to the Cripples' Home in Kensington. In the early years of the present century Jaffrey acted as dean of the Medical School of St. George's Hospital, conjointly with Dr. Arthur Latham, while he was also for a time Lecturer on Anatomy.

It would not be right to term Francis Jaffrey a great surgeon, but he was a most efficient hospital officer, and his cases did remarkably well. Regular and punctual in his attendance, careful in his work; as an operator, sound rather than brilliant, absolutely loyal to his colleagues both on the senior staff and also to his house-surgeons, Jaffrey was an ideal man to work with. The writer of these lines was appointed Jaffrey's house-surgeon in 1906, and he can never forget the happy six months that he spent in that office. His death leaves a gap not easily to be filled.

CLIFFORD LUXMORE DREW, M.B., C.M. ABERD.,

Coroner for the Western Division of London.

MR. LUXMORE DREW, Coroner for the Western Division of London, died suddenly on May 26th. When, some years ago, the London County Council took over the appointment of the London coroners, it wisely decided that all future holders of the post should be possessed of both medical and legal qualifications. Mr. Drew, who was a barrister as well as a doctor, was the first coroner so appointed, and his appointment fully proved the wisdom of the County Council in selecting him. When first appointed (in 1892) he succeeded to the district—a rather restricted one—of the late Mr. Diplock; but when, some time later, the districts were rearranged, he was induced to add to his labours, and at the time of his death held courts in no fewer than five large London parishes—Chelsea, Fulham, Hammersmith, Kensington, and Paddington. This heavy work naturally told upon a constitution none too strong, so that, notwithstanding the loyal co-operation of his two deputies, Mr. Douglas Cowburn and Mr. Peter Byrne, he latterly showed signs of constitutional breakdown. On the morning of May 26th, while dressing, he felt a sense of suffocation, went to his wife to complain of it and fell dead, after vomiting about a pint of blood.

Clifford Luxmore Drew was the son of Mr. Charles Drew who held a commission upon the Madras Establishment of the Honourable East India Company, and was with his parents in India during the Mutiny. Upon returning to this country he received his preliminary education from private tutors, and in 1870 entered the London Hospital. After taking the diploma of M.R.C.S. in 1874 he went to Aberdeen, where he graduated M.B. and C.M. in 1876. He never engaged to any extent in private practice, and with a view of becoming a coroner entered the Middle Temple and was called to the Bar in 1890. At first he travelled the Western Circuit, and also took cases at the Old Bailey, but in 1892, on being appointed coroner, this work monopolized the whole of his time. He was much devoted to gunnery and had been captain and instructor of artillery in a brigade of the Royal Artillery. As a result of his experience he published, in 1888, a little manual entitled *Through the Woolwich Courses*.

Mr. Drew was a keen sportsman, and never missed an opportunity of hunting with the hounds in Devonshire or salmon fishing in Scotland. He was a man of amiable and kindly disposition, who found his chief relaxation in his well-stocked library, the walls of which, like other walls in his house, in addition to books, were covered with trophies of the chase.

Mr. Drew, who married in 1880 the daughter of the late Mr. William Yeo of Appledore, leaves a daughter (wife of Captain S. C. Robertson).

The first part of the funeral service was conducted at St. Peter's Church, Bayswater, the body being subsequently conveyed to Brighton for interment in the family grave at Hove.

JOSEPH WIGLESWORTH, M.D., F.R.C.P.,

Late President of the Medico-Psychological Association.

WE regret to record the death of Dr. Joseph Wiglesworth, formerly president of the Medico-Psychological Association and lecturer on mental diseases in the University of Liverpool, and for thirty years medical superintendent of Rainhill County Asylum, near Liverpool. Dr. Wiglesworth was born in 1854, and studied medicine at Liverpool and St. Thomas's Hospital. He obtained the M.R.C.S. diploma in 1876, and graduated M.B. Lond., with first class honours in medicine and obstetric medicine, in 1878, proceeding M.D. two years later. In 1888 he became a Member, and ten years later was elected a Fellow of the Royal College of Physicians of London.

Dr. Wiglesworth was an ardent ornithologist, and became a recognized authority on the bird life of Somerset, upon which subject he wrote a number of papers. He was a member of the British Ornithologists' Union, and president and recorder of the Ornithological Section of the Somerset Archaeological and Natural History Society. In addition to many papers on the pathology of mental disease, including his presidential address in 1903 on heredity and insanity, he was the author of *St. Kilda and its Birds*. His published work on mental pathology, much of which appeared in the *Journal of Mental Science*, has

nowadays, perhaps, lost the significance it had, for most of it was written prior to the time when the relationship of syphilis to all tabetic disease was realized, and before the modern, if unproved, theory was advanced that the pathology or genesis of delusion, and even of paranoia, may be revealed by analytical methods of examination.

About fifteen years ago Dr. Wigglesworth was very seriously assaulted by a patient while on his rounds at Rainhill Asylum, and but for the fact that he was accompanied by one of his medical colleagues he would there and then have bled to death from a murderous wound in his throat. His early retirement from lunacy practice was probably the outcome of shock after that assault. His withdrawal from practice was much deplored by his colleagues in the specialty, who looked upon him as a keen investigator and indefatigable worker in the difficult domain of cerebral pathology.

On his retirement Dr. Wigglesworth went to live at Winscombe, in Somerset. At the time of his death he was engaged on a work descriptive of the birds peculiar to the county of Somerset, and his investigations took him to Hurlstone Point, on the eastern side of Porlock Bay. The circumstances of his death are obscure, but it appears that he may have fallen from the cliff on May 16th. His absence from the hotel caused alarm, and search parties scoured the coast. The body was found on the shore two days later at low tide. The coroner found that death was caused by fracture of the skull and not by drowning.

Dr. Wigglesworth leaves a widow; his only son was killed during the war whilst in the Air Service.

In the obituary notice of Captain J. C. M. BAILEY, O.B.E., R.A.M.O., published in the *BRITISH MEDICAL JOURNAL* of May 3rd, his services during the present war were not given. He was the eldest of six sons, all of whom joined the forces for the war. He served in the Kamerun campaign of 1914-15, when he was mentioned in dispatches, and was afterwards transferred to Salonica, where he served for two and a half years, and was again mentioned in dispatches, receiving the O.B.E. (Military Division) on January 1st, 1919.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Diploma of Psychological Medicine.

COURSES in preparation for Parts I and II of the examination for the diploma in psychological medicine will be held at the Psychological Laboratory, Cambridge, from August 2nd till August 30th. The classes will be conducted as follows:—Part I: Psychology, with practical work, Dr. J. P. Lowson; Anatomy and Physiology of the Nervous System, with practical work, Dr. E. D. Adrian. Part II: Neurology, Dr. Adrian; Psychiatry, Lunacy Law and Administration, Dr. M. H. Archdale, Superintendent of the Cambridge County Asylum; Psychopathology, Dr. W. H. R. Rivers, F.R.S. The inclusive fee for Part I is £4 4s. and for Part II £4 4s. For further particulars application should be made to Dr. C. S. Myers, F.R.S., The Psychological Laboratory, University of Cambridge.

UNIVERSITY OF LONDON.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

The following scholarships will be awarded this summer:

(1) St. Dunstan's Medical Exhibition: £60 a year for three or five years. (2) Mrs. George M. Smith Scholarship: £50 a year for three or five years. (3) Isabel Thorne Scholarship: £30 for one year. (4) Mabel Sharman Crawford Scholarship: £20 a year for four years. (5) Dr. Margaret Todd Scholarship: £37 10s. a year for four years. (6) Sarah Holborn Scholarship: £20 a year for three or five years. (7) Agnes Guthrie Bursary for Dental Students: £50 for one year.

Nos. 1, 2, 5, 6, and 7 will be awarded to candidates who are in need of financial assistance for the prosecution of their medical studies. Applications for Nos. 5, 6, and 7 must be received by July 1st. Forms of application and full particulars can be obtained from the Warden and Secretary, Dr. Louie M. Brooks, Hunter Street, Brunswick Square, W.C.1.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The following gentlemen having passed the requisite examinations have been admitted ordinary Fellows:

D. H. Beth, M.B. Univ. New Zealand, C. Ronek, M.B. Toronto, O. T. Dinick, M.B. Toronto, Haji Hyderali Khan, F.M.S. Bombay, A. V. Meehan, M.B. Sydney, J. T. Wall, M.D. McGill.

The Bathgate Memorial prize, consisting of bronze medal and set of books, was, after a competitive examination in materia medica, awarded to Mr. W. F. G. Radford.

The Services.

ROYAL NAVY.

RETIREMENT OF SIR W. H. NORMAN, K.C.B.

SURGEON VICE-ADMIRAL SIR WILLIAM HENRY NORMAN, K.O.B., who, as already announced, has retired at his own request from the office of Director-General of the Medical Department of the Royal Navy, comes of a naval family. His grandfather and three of this officer's brothers served in the navy during the Napoleonic wars. One—afterwards killed as lieutenant of the *Sirius* when leading an attack on the Ile de la Passe—was present at Trafalgar. Another was killed in action in 1814. Sir William Norman's father, who held the Baltic and China medals, and four of this officer's brothers also served in the Royal Navy, and Sir William's two sons are now serving in the navy. Sir William Norman himself entered the navy in August, 1882, and as surgeon of the *Reindeer* was mentioned in dispatches for his treatment of the wounded after an action with a slave dhow at Zanzibar in 1887. In 1895 he was a member of the party landed at Mombassa for the punishment of a rebellious Arab chief, and received the African General Service medal. He was a member of the committee on naval medical service in 1907, and naval member of the Medical Consultative Board. He was surgeon-general R.N. Hospital, Plymouth, when appointed medical director-general of the navy in 1917. He received the O.B. in 1916 and the K.C.B. in 1918. He is a Commander of the Legion of Honour, of the Crown of Belgium, and of the Star of Rumania, and Grand Cordon of the Sacred Treasure (Japan). During his two years of office as medical director-general he has shown himself an able and sympathetic administrator, devoted to the interests of his service, easily accessible to its officers, and desirous, so far as the times permitted, to advance the cause of medicine afloat. His successor, Sir Robert Hill, K.C.M.G., C.B., will have no light task in attempting to complete the work which has been begun.

HONOURS.

MESOPOTAMIA.

The following awards are announced in recognition of gallantry and devotion to duty in the field in Mesopotamia:

D.S.O.

Captain Heerajee Jehangir Manockjee Cursetjee, I.M.S., attached 14th Sikhs.

For conspicuous gallantry and devotion to duty at Mushaq, October 26th-27th, 1918, and at Sharqat, October 29th. Throughout the operations he displayed the greatest zeal and disregard for danger while tending the wounded under heavy fire, working unceasingly for forty-eight hours. He has previously rendered excellent service, and once was severely wounded.

Military Cross.

Captain John George Bennett, R.A.M.C., attached 20th Brigade R.F.A.

For conspicuous gallantry and devotion to duty at Mushaq, October 26th, 1918. He worked day and night in the open under heavy fire, tending the wounded and superintending their evacuation. His energy and disregard of danger throughout were admirable.

Captain Maurice Dwyer, R.A.M.C.(S.R.).

For conspicuous gallantry and devotion to duty on October 29th-30th, 1918, at Sharqat. He displayed great disregard of danger during an attack on the enemy's position. He remained all day and night exposed to heavy fire searching for and dressing the wounded. In the dark he made his way forward to the firing line to see if his services were required, and stayed there attending to and superintending the evacuation of the wounded.

Captain Harold Jacques, R.A.M.C.

For conspicuous gallantry and devotion to duty at the Lesser Zab on October 25th 1918. When the artillery brigade to which he was attached was in action he displayed great disregard of danger in attending the wounded under heavy fire. Four battery wagons were exploded by shell fire but he continued to work in close proximity, rendering most valuable assistance until all cases were successfully evacuated.

2nd Class Senior Subassistant Surgeon Bhagwan-Singh, I.O.M., Indian Medical Department.

For conspicuous gallantry and devotion to duty at Sharqat on October 29th, 1918. When the regimental aid post came under heavy fire he displayed the utmost coolness in appeasing the wounded and alleviating their sufferings. Throughout the action his conduct was a fine example to his subordinates.

NORTH RUSSIA.

The following are among the recipients of immediate awards for conspicuous gallantry and devotion to duty in North Russia conferred by Major-General W. E. Ironside, C.M.G., D.S.O., in pursuance of powers vested in him by H.M. the King:

Bar to Military Cross.

Temporary Captain John Dalglish Watson, M.C., R.A.M.O.

For conspicuous gallantry and devotion to duty in evacuation of wounded from Toulgas during the period November 12th-14th, 1918, under fire and through drift ice with a panic-stricken crew on the river steamer. (M.O. gazetted January 1st, 1918.)

Military Cross.

Captain (acting Major) Frank Mortimer Taylor, R.A.M.O.(S.R.).

For conspicuous gallantry and devotion to duty on December 30th, 1918, at Kodish, when he urged his sleigh drivers into Kodish through severe fire. He thus established a dressing station, collecting and tending the wounded under difficult and dangerous conditions.

Lieutenant John Peter, R.A.M.C.(S.R.), attached 17th Battalion Liverpool Regiment.

For gallantry and devotion to duty during the attack on enemy positions near Kodish on February 7th, 1919. Under heavy fire he attended to the wounded and placed them on sleds. It was largely due to his fine conduct that the wounded were promptly evacuated and many lives saved.

ORDER OF THE BRITISH EMPIRE.

The following appointments to the Order of the British Empire are announced in recognition of valuable services rendered in connexion with the war:

Officers of the Military Division (O.B.E.).

Surgeon Commander William Rhodes Harrison, R.N.

For valuable services as senior medical officer of the Sixth Destroyer Flotilla.

Surgeon Lieutenant Stanley Samuel Beare, R.N.

For valuable services in attending to the sick and wounded in the Dover Patrol.

Member of the Military Division (M.B.E.).

Surgeon Sublieutenant Donald Eadie Brown, R.N.V.R.

For valuable services in attending to sick and wounded of the Dover Patrol.

The Meritorious Service Medal has been conferred upon Surgeon Lieutenant Samuel Franklin Abbott, R.N., for services in ocean escorts between July 1st and November 11th, 1918.

FOREIGN DECORATIONS.

The President of the French Republic has conferred the silver Médaille d'Honneur des Epidémies upon Surgeon Commander Charles R. Sheward, R.N., and Surgeon Lieutenants Abel Evans and Richard Wilkins, R.N., for distinguished services rendered during the war.

The King of Hellenes has appointed Surgeon Lieutenant Commander Douglas A. Mitchell, R.N., to be an Officer of the Order of George I in recognition of distinguished services rendered during the war.

The President of the French Republic has appointed Surgeon Captain George T. Broatch, C.B.E., R.N., to be an Officer of the Legion of Honour; and Surgeon Lieutenant Michael E. T. D. Vlasto, R.N., an Officier d'Instruction Publique, for distinguished services rendered during the war.

Medical News.

MAJOR-GENERAL SIR ANTHONY BOWLBY, K.C.M.G., K.C.V.O., C.B., having relinquished the appointment of consulting surgeon to the British armies in France, has returned to London.

SIR W. ARBUTHNOT LANE, Bt., C.B., is leaving for New York this week to attend the conference of the American Medical Association (Victory meeting) as the representative of the Royal Society of Medicine.

THE library and offices of the Royal Society of Medicine will be closed for the Whitsuntide holidays from Saturday, June 7th, to Monday, June 9th, both days inclusive.

AT the forthcoming eighty-seventh meeting of the British Association, which will be held at Bournemouth on September 9th-13th under the presidency of Sir Charles Parsons, Professor Arthur Keith, M.D., F.R.S., will preside over the section of anthropology, and Professor Noël Paton, M.D., F.R.S., over the section of physiology.

THE Cavendish Lecture before the West London Medico-Chirurgical Society will be given at the West London Hospital on Friday, June 20th, by Sir George Makins, G.C.M.G., C.B., P.R.C.S., the subject selected being the part of the consulting surgeon in war. The annual dinner of the society will be held at Pagani's Restaurant, Great Portland Street, W., on July 10th.

THE Royal Institute of Public Health will hold a conference in London at the end of June at the Guildhall.

SIR JOHN COLLIE, C.M.G., has been appointed deputy coroner for the Hatfield district of Hertford.

AT a penal meeting of the Central Midwives Board for England and Wales on May 22nd, with Sir Francis Champneys, Bt., in the chair, three women were struck off the roll, two of them principally on charges of neglect of ophthalmia neonatorum; both were very advanced in years. After the conclusion of the penal board the ordinary monthly meeting was held. The report of the standing committee included a letter from the British Medical Association with reference to the fees to be tendered by the Board to medical practitioners asked to give oral evidence in penal cases. Eighteen midwives were accepted by the Board by reason of their having obtained the certificates of the Central Midwives Boards for Ireland and Scotland respectively.

ON April 27th Dr. J. A. Turner, C.I.E., sailed for England on his retirement after nineteen years' service as municipal executive health officer for the City of Bombay. The *Times of India* for April 26th gave an appreciative review of some of the chief features of Dr. Turner's work in Bombay—more especially in the organization of measures against plague, malaria, and cholera, and the systematic registration of births and deaths in the city—and paid a tribute to Dr. Turner for his extra-official and honorary work on behalf of the Bombay Sanitary Association and the Bombay Sanitary Institute. The foundation of the King George V Anti-Tuberculosis League was also due to his initiative. An entertainment was given in honour of Dr. Turner and Dr. N. H. Choksy, the assistant health officer, on the eve of their retirement, when the chairman, Sir T. B. Nariman, presented them with silver bowls as mementos of their work in Bombay.

THE annual meeting of the Asylum Workers' Association, held at the house of the Medical Society of London on May 21st, was overshadowed by a consciousness of the severe loss the association had sustained by the recent death of its president, Sir John Jardine, Bt. Lieut.-Colonel D. G. Thomson, M.D., R.A.M.C., who occupied the chair, referred in sympathetic terms to the invaluable services of Sir John Jardine during his seven years' presidency, and Sir William Collins, M.D., testified to his benevolent efforts in the cause of asylum workers, both in assisting to pass the Asylums Officers' Superannuation Act, 1909, and in placing before Parliament amendments subsequently found desirable. The report for 1918 having been adopted (showing a membership of 2,171) the re-election of the Vice-Presidents and Executive Committee was carried, on the proposal of Sir F. Needham, M.D. (Commissioner of the Board of Control), and other necessary business transacted.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

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1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Aitology*, *Westrand*, London; telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, *Westrand*, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 15, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

THE ROAD SIGNAL.

A MIDDLE-AGED doctor who drives his own car (a closed coupe) asks whether there is any contrivance for signalling to traffic that he is going to turn; being rheumatic he is afraid to keep the right window open to signal with the raised arm in the usual way.

ARRANGEMENTS FOR DISPENSING BY CHEMIST.

"M.D." writes: In a mixed country and small town practice we wish to hand over our dispensing to a chemist, and desire information as to the best methods to adopt in order to avoid complex bookkeeping and to ensure easy reference to previous prescriptions, fair dealing and prices, with proper checking of accounts. Information as to prices already in force would be very acceptable.

LETTERS, NOTES, ETC.

FAILURE TO NOTIFY OPHTHALMIA NEONATORUM.

DR. J. A. NEILAN (New Seaham, co. Durham) writes: I notice in the *BRITISH MEDICAL JOURNAL* of May 24th a report of a case in which a doctor at Newcastle-on-Tyne was fined £50 for failing to notify a case of ophthalmia neonatorum. I enclose notification form for this disease, supplied to me by the M.O.H. of this area, on which it is stated, in footnote, that the penalty for failure to notify this disease does not exceed forty shillings. If the law allows the imposition of a larger penalty, it would be interesting to know why this misleading statement is printed on these forms.

* As stated in the note last week the charge was of unlawfully and wilfully neglecting to obey a regulation of the Local Government Board. The charge was made in

pursuance of Section 130 of the Public Health Act, 1875, and the Public Health (Ophthalmia Neonatorum) Regulations, 1914. The regulations were made under the Public Health Act, 1875, amended by the Public Health Act, 1896. The Public Health Act, 1875, provided that "any person wilfully neglecting or refusing to obey or carry out, or obstructing the execution of any regulation made" by the Local Government Board "shall be liable to a penalty not exceeding £50." The Act of 1896 rendered such person "liable to a penalty not exceeding £100, and in the case of a continuing offence to a further penalty not exceeding £50 for every day during which the offence continues." The Infectious Disease Notification Act, 1899, provides that a medical practitioner on becoming aware that a patient he is attending, or is called in to visit, is suffering from an infectious disease to which the Act applies, shall forthwith send a notification certificate to the medical officer of health. The penalty for failing to give such a certificate is a fine not exceeding 40s. Whether the charge at Newcastle could have been framed under the Infectious Disease Notification Act or not we are not prepared to say, though from the terms of the Order it would appear that it could not have been so framed. Nor are we prepared to say whether the footnote to the certificate enclosed by our correspondent is in order or not.

THE NEUROLOGICAL HOSPITALS OF THE MINISTRY OF PENSIONS.

As part of the scheme of reorganization of the Ministry of Pensions it is intended to open neurological hospitals in various parts of the country for the care and treatment of pensioners suffering from war neuroses. About ten of these institutions are in contemplation, each with a medical staff of one senior and two or more junior medical officers. Applicants are required for these posts. The head quarters of the Medical Department of the Ministry are at Cromwell House, Westminster, S.W.1.

THE SCIENTIFIC MEETING.

DR. JOHN HADDON (Denholm, Hawick, Scotland) has sent a letter in which he makes the following observations: Having read the report of the proceedings at the Scientific Meeting of the Association, I cannot help writing to express the pleasure I felt and the memories it recalled of such meetings in my youth, before the democratization of the Association and its embarkation on trade union lines. I cannot help thinking that, unless the British Medical Association confines itself to the scientific interests of the profession, "Ichabod" may be put above its portals. There were few of my contemporaries at that meeting, nearly all of them having "crossed the bar," but I feel sure that the few that are left will, along with me, regret the change of policy which the reorganization of the Association heralded, and long for the days when we met without any thought of remuneration for our services in connexion with the Association or of fees for practice. Science ought to be our aim. Professor Syme, in his opening lecture on clinical surgery, every year told us to make the good of our patients our first consideration, and never think of the fees. If Government is determined to exploit the medical profession, let it do so with those who are willing to be enslaved; but, from my experience in practice among patients in clubs, who could have had advice and medicine through their clubs without coming to me, I feel sure that a good man will be able to make a good income apart from the panel. Nevertheless, I am quite aware that, in the present state of the licensing corporations, there are many who, apart from the panel, would never make a living, with whom the profession is a mere trade. If the new medical union can combine such members of the profession into a trade union, so as to fight the Government, let it do so, but it is to be hoped that the British Medical Association will return to the methods under which it attained unrivalled success. It would be far better for us as a profession to be poor and self-respecting than to be rich and be reduced to the level of a trade. Let the JOURNAL and the scientific meetings, with the social attractions of the annual meeting, be, as they used to be, the bonds of union among the members, and many will return.

CIVIL SURGEONS ON TRANSPORT LINERS.

"SEAFARING SURGEON" writes: Your correspondents "Malta, 1915," and "Aggrieved" (May 17th, p. 630), do not state whether they are service men or not, but it is to be presumed this is so. In any case they are quite justified in their claims for recognition. I should like to point out that a fairly numerous body of medical men do not appear to have any prospect whatever of notice being taken of their services. I refer to civil surgeons on transport liners. Their work has been silent, arduous, and unrecognized. In emergencies their ships have been filled with wounded, whom they tended in some instances singlehanded. Personally this has been my own experience. In addition I have been sniped at, shelled, had bombs dropped round from aeroplanes, and been chased by submarines. I hope the British Medical Association will have

room on its broad back to shoulder the aspirations for the 1914-15 ribbon and other decorations for patriotic seafaring surgeons.

INJECTION OF WHOLE BLOOD IN INFLUENZA.

THE note by Dr. Huff-Hewitt in the JOURNAL of May 10th, p. 575, on four cases of influenza treated by him with human serum has induced Dr. P. M. Carlyle, H.M. Factory, Gretna, to send a note on a severe case of influenza in a youth who, in spite of various remedies, including a serum, grew worse and appeared to be about to die. Blood was obtained from a male patient, convalescent from influenza but otherwise in good health. The amount withdrawn from the donor's arm was 15 c.cm., and this was immediately injected hypodermically into the arm of the semi-comatose patient. That night his condition remained unchanged, but next day he seemed slightly better, though there was no marked change until the third day; then the temperature rose quickly to nearly 106° F., but fell steadily until it reached 99.5° F. in the evening. Eventually the youth made a good recovery. Whole blood was used because there was no time to prepare serum. The blood produced no untoward symptoms or rash and was all absorbed in twelve hours.

ADSORPTION.

A CORRESPONDENT who was a student a quarter of a century ago finds some of the terms now commonly used in physiology and pathology perplexing, and asks in particular for a definition of "adsorption." It is unfortunately impossible to give an intelligible definition in a few words. The subject is fully discussed by Professor Bayliss in his *Principles of General Physiology*. We shall not, we hope, misrepresent him in what follows. The surface of contact between a liquid and another phase—solid or immiscible liquid, or gas—has properties differing from those of the main body of either phase. The surface film behaves as if stretched, so that it is the seat of a special kind of energy. This "surface tension" has its origin in the forces of attraction between the molecules of the liquid, and its amount varies with the chemical nature of the liquid. At the interface there is a local accumulation of free surface energy, which is altered in amount by the deposition of substances at the interface. It follows, by one of the laws of energetics, that dissolved substances which lower surface tension will be concentrated in this situation. Any substance, in solution in a liquid, in contact with the surface of another phase, will be concentrated on that surface if by this the free energy present there is decreased. This process is called "adsorption." Its characteristic is the relation to surfaces of contact. Whatever further process may follow, whether chemical reaction or diffusion into the body of the other phase, the first thing to take place is this local concentration. "Adsorption" plays an important part in physiological phenomena. Although not instantaneous it takes place very rapidly when the components are approximated. Finally, Professor Bayliss says that adsorption cannot be completely or satisfactorily explained by chemical combinations nor by partition between phases. It is still under investigation in many directions.

MENINGISMUS.

DR. A. G. C. POCOCK (Shotley Bridge) writes: Male infant, aged 14 months, became ill with high temperature and bronchial symptoms on March 3rd; on March 6th a patch of pneumonia was diagnosed. From March 9th to March 13th the temperature kept at 105°. There was photophobia, nystagmus, and *tache cérébrale*, but Babinski's sign was negative. The abdomen was distended with constipation. On March 13th the temperature fell to 103°, and there was improvement; but the temperature was again 105° on March 14th, when the child was comatose and the pupils inactive. On ophthalmoscopic examination (difficult on account of the oscillatory movement of the eyes) nothing abnormal was detected. On March 16th the temperature fell to 100°, and on March 18th was normal and the child convalescent. Lumbar puncture was projected, but not done as the child had improved. The treatment mainly was phenacetin and calomel, aa gr. j , every six hours.

THE appointment of certifying factory surgeon at Maryborough (Queen's County) is vacant.

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Remarks ON BRACHIAL "NEURITIS" AND ITS TREATMENT.

BY

R. T. WILLIAMSON, M.D., F.R.C.P.,

CONSULTING PHYSICIAN TO THE ROYAL INFIRMARY, MANCHESTER.

The term primary brachial "neuritis" may, I think, be fairly applied to certain cases in which the chief symptom is severe aching pain in one arm. Paralysis and well marked anaesthesia never occur; generally sooner or later the patient recovers. No signs of organic disease can be detected, and no organic disease of the nervous system follows. The symptoms are subjective, but we can have no doubt as to their severity in many cases.

No paralysis or atrophy of the muscles of the arm can be detected. The wrist jerk and other arm reflexes are obtained. The patient can recognize sensations of touch, pain, temperature, and the vibrating sensation (tested with a large tuning-fork) on the affected arm. The pupils, the legs, and the reflexes are all normal. Usually only one arm is affected. Occasionally both suffer, but not usually at the same time.

The nerve roots in the posterior triangle of the neck are often tender on pressure. The pain is of an aching character and often severe; acute attacks of great severity often occur, but the pain is not of the completely intermittent character of neuralgia. Sometimes it keeps the patient awake at night; in exceptional cases it is so severe that morphine is required. It may affect the whole arm down to the fingers, often chiefly the upper arm; it is usually not strictly localized to the distribution of a single nerve or nerve root. It is not localized to the joints. Often it is more severe when the arm hangs down by the side, and is less when the arm is supported by a sling so arranged that the elbow is supported and slightly raised. Movement, especially elevating the arm very high, increases the pain.

Paraesthesia in the arm is a symptom in some cases, and the patient may complain of "pins and needles" sensation when the hand is placed in water.

The symptoms of brachial neuritis are described in detail in the larger textbooks. Briefly stated, it is an affection of the arm somewhat similar to sciatica in the leg, but differs in that the pain is usually diffuse. The opportunities for pathological examination are exceedingly rare, but neuritis is the most probable lesion to account for the symptoms.

In this note I desire especially to draw attention (1) to the etiology of the affection, and especially to pressure on the nerve trunks of the brachial plexus in the posterior triangle of the neck as one exciting cause; and (2) to the value of supporting the arm in a suitably arranged sling.

The causes of brachial neuritis are (1) general, (2) local, (3) probably in most cases a combination of both.

The most common general causes are: Diabetes, gout, alcoholic excess, (2) influenza, (?) rheumatism, (?) neurasthenia.

Often we have a local cause, which in many cases probably would not have produced the neuritis without the combination of some general morbid condition. The chief local causes noted in cases coming under my own observation have been: Pressure on the nerve roots of the brachial plexus in the posterior triangle of the neck by a tight brace; sleeping with the arm raised so that the clavicle presses on the nerve roots in the posterior triangle; carrying a heavy weight on the shoulder which compresses the nerve roots just named; injury causing the shoulder to be suddenly forced backwards and contusion of the nerve roots; exposure of the side of the neck and shoulder to a cold draught or to damp.

The following abstracts of notes indicate some of the causes of this affection. To save repetition I may add that the symptoms in each case corresponded to those just described. They were entirely subjective; no paresis or anaesthesia was detected. No signs of organic disease of the nervous system or thorax ever developed.

CASE I.

A middle-aged gentleman whilst travelling by railway fell asleep with his left elbow raised and supported on the lower edge of the window of the compartment and his head resting on

the left hand, the elbow being flexed. In this position the clavicle would be raised and pressed on the nerve roots of the brachial plexus in the posterior triangle of the neck.

On awaking he felt pain in the left arm which increased rapidly, and became so intense that he was unable to sleep, and injections of morphine were necessary. The pain was diffuse, all over the arm, and the symptoms were those of brachial neuritis as just described. No anaesthesia and no paresis or signs of organic disease of the nervous disease could be detected. Early organic intrathoracic disease was feared, but no signs could be detected. The pain continued for about a week. The patient was kept in bed, and the arm placed in an easy position on a pillow. Complete recovery ensued. He had suffered from similar symptoms many years previously, which had also been due to the same cause—falling asleep in a railway carriage with his elbow raised and resting on the edge of the carriage window, the elbow being flexed and the head resting on the hand.

Fifteen years after the second attack the patient was alive and doing active work.

By observation in the dissecting room (placing the finger in the position of the nerve roots in the posterior triangle of the neck) we can easily demonstrate that the nerve roots are liable to be compressed by the posterior surface of the clavicle when the elbow is raised very high, into the position just indicated.

CASE II.

A healthy middle-aged man had had severe pain for six weeks in the right arm; the nerve roots in the posterior triangle were tender on pressure; the symptoms of brachial neuritis were marked. No definite cause could at first be detected; there had been no injury. No signs of organic disease could be detected. The braces were tight, and the patient stated the symptoms had followed directly after commencing to wear a pair of new and tight braces. Considering that the tight braces had probably played some part in causing the neuritis, by pressure indirectly on the nerve trunks in the posterior triangle of the neck, I advised the braces to be removed, the trousers to be fixed by an abdominal belt, and the right arm to be placed in a sling, so arranged that the right elbow was supported and slightly raised—dragging of the weight of the arm on the nerve roots in the posterior triangle and pressure of the clavicle on these roots being thus prevented. Antipyrin gr. x three times a day was given. The pain very rapidly diminished, and in two days had entirely ceased. Four years later the patient was in good health; he had had no return of symptoms.

CASE III.

An elderly female. The symptoms followed a sudden heavy blow on the left shoulder in a street crowd; the shoulder was pushed backwards. The nerve roots in the left posterior triangle of the neck were tender, and the symptoms of brachial neuritis just described were present. The arm was placed in a sling, as in Case II, and antipyrin given. Recovery ensued in a few days, and there had been no return of symptoms ten years later.

CASE IV.

A middle-aged man presented the symptoms after a fall on the right shoulder; the nerve roots in the right posterior triangle of the neck were tender. All the other symptoms of brachial neuritis were present.

CASE V.

A middle-aged man, with symptoms of brachial neuritis in left arm, stated that the pain had commenced one evening (many weeks previously) just after he had carried a very heavy roll of carpet on the left shoulder and left side of the neck. Probably this had compressed the nerve roots in the posterior triangle of the neck, and caused the neuritis.

CASE VI.

A young man had symptoms of brachial neuritis in the right arm. He had long suffered also from various slight symptoms of neurasthenia. The pain in the arm was especially severe after walking for long distances with the right arm hanging down by the side. A strap over the right shoulder was tight. This was slackened and put off when not absolutely necessary, and the patient was advised to keep the arm in a sling as described. Recovery was rapid.

CASE VII.

A soldier, sent home from France on account of trench fever, had suffered during that illness from pain in both arms and legs. He had to discontinue the use of braces on account of pain caused by pressure of braces on the shoulders.

He was discharged from the army, improved, and returned to his work, in which he had to turn the handle of a machine with his right hand about twenty times a day for about fifteen minutes each time (thus using the right hand in turning the machine altogether for five hours daily). The work was a very heavy physical strain. In a short time (less than a month) he began to suffer from pain in the right arm which increased until he was unable to work further. All the symptoms of brachial neuritis developed.

CASE VIII.

A naval officer whilst stationed at a port on the south coast was suddenly called from his bed one night to answer a telephone. He had no time to dress, and whilst standing at the

telephone the left shoulder and left side of neck were exposed to a strong draught of cold air from an open window for a considerable time. He returned to bed and slept, but on awaking next morning found the left arm very painful. In a few days the pain was so severe he had to discontinue his duties. When I saw him at this time he presented all the symptoms of brachial neuritis just described. The pain continued for a few weeks and was often so severe as to prevent sleep. Then he gradually improved and recovered.

CASE IX.

A man slept on very damp ground, his left arm being in contact with the ground. The symptoms of brachial neuritis followed in the left arm.

CASE X.

A woman, aged 52, put on a very damp jacket and went out in the cold; within two hours pain and symptoms of brachial neuritis began in both arms and continued for many months. There were no signs of organic disease. She recovered.

In diabetes mellitus and in chronic alcoholism brachial neuritis, with symptoms similar to those just described, is occasionally observed. I have seen a number of such cases. Gowers and others consider that gout also is a common cause of the disease.

CASE XI.

A woman, aged 45, had suffered from mild diabetes mellitus for four years. Without any apparent cause, beyond the diabetic condition, aching in the limbs became troublesome. In a short time the pain in the legs and right arm ceased to be troublesome. But the pain in the left arm became very severe, so severe that she was unable to sleep. It was most severe between the elbow and shoulder; it was diffuse, not limited to distribution of any nerve or nerve root. There was great tenderness on pressure at this part. There was no anaesthesia, paresis, or atrophy, and the reflexes were normal. The nerve roots of the brachial plexus in the left posterior triangle of the neck were more tender on pressure than those in the right posterior triangle. The other symptoms of brachial neuritis were noted. The arm was placed in a sling as already described, and antipyrin gr. x three times a day was prescribed. Rapid recovery ensued in a few days, and ten months later there had been no return of pain.

Prognosis.

Most cases I have seen recovered completely. In rare cases the symptoms have persisted, with periods of intermission and relapses, for months. Primary brachial neuritis is not followed by organic disease of the nervous system or thorax.

Diagnosis.

The description just given refers to "primary brachial neuritis"; but symptoms, which at first are somewhat similar, occur in cases of pressure on the brachial plexus by tumour in the thorax or neck, or by aneurysm, and in cases of meningeal spinal tumours and other organic affections. Later in such cases objective nervous or thoracic symptoms develop, which indicate clearly that the case is not one of primary brachial neuritis.

Considerable care is therefore needed in the diagnosis. A very thorough examination is necessary, and the diagnosis of primary brachial neuritis should only be made when all signs of organic disease of the nervous system, of aneurysm, or intrathoracic growth, and of other organic disease of heart, lungs, spine, or neck, are lacking, and when the symptoms are subjective. Anaesthesia, paralysis, changes in the reflexes, would all exclude the primary brachial neuritis I am considering.

As already stated, cases of primary brachial neuritis usually terminate in recovery, and clinically the diagnosis cannot be regarded as quite certain until recovery has occurred. Nevertheless, after careful examination, and exclusion of signs of organic disease, the diagnosis of primary brachial neuritis may often be given as strongly probable, and this opinion is often verified by the recovery of the patient. The longer the disease persists the more probable is it that the neuritis is secondary to some organic lesion.

In the diagnosis from neuralgia the character of the pain is helpful. In brachial neuritis the pain is less completely intermittent than is that of neuralgia, and the nerve roots in the posterior triangle are more tender on slight pressure at the early period.

Symptoms very similar to those of brachial neuritis may occur at the early stage of a spinal meningeal growth, but in such cases they do not clear up, and in course of time paralytic symptoms and other indications of organic disease develop.

In a case under my care (which proved to be a gumma of the cervical dura mater) the first symptoms were similar to those of brachial neuritis. They persisted in spite of all treatment (including antispasmodic treatment) for over twelve months, and no other symptoms of affection of the nervous system could be detected. Then slight paresis developed in the affected arm and was rapidly followed by paralysis of both legs, both arms, and of the bladder and intercostal muscles, and by anaesthesia up to the second intercostal space.

In this case, at first, the symptoms were very similar to those of brachial neuritis, but the persistence of the pain without any improvement rendered primary brachial neuritis very improbable. The case shows the necessity for keeping a careful outlook for the development of signs of organic disease of the spinal cord in all cases of brachial neuritis.

The diagnosis from surgical affections in the region of the shoulder (fracture, partial or sub-dislocation, sprain, laceration of ligaments, arthritis, etc.) has also to be considered. Signs of these conditions should be searched for, if we have a history of injury; and in difficult cases x-ray examination may be helpful. Primary brachial neuritis can be excluded if the pain is felt only on movement, or if we find that on passive movements the scapula moves along with the humerus, if partial ankylosis or adhesions have formed at the shoulder-joint, or if we find signs of fluid in the joint.

A "cervical rib" may cause pain in the arm which may be at first regarded as brachial neuritis. But in cervical rib the pain is often chiefly in the distribution of the first dorsal nerve root in the arm, often sensation is diminished in this area, and the small muscles of the hand become wasted. The existence of a cervical rib is revealed by x-ray examination.

As in all cases of pain in various parts without objective signs, hysteria and malingering might present the greatest difficulty. In brachial neuritis often we can only exclude hysteria or malingering on general grounds. In nearly all of my cases of brachial neuritis I have had no hesitation in excluding hysteria or malingering. We have usually no indication of hysteria, the statements as to the pain are definite, and we are unable to detect any tendency to exaggerate. The onset is usually rapid. The patient is evidently most anxious to obtain relief, he is often unable to sleep on account of the pain. If we move the limb slightly when the patient's attention is directed elsewhere we find we are unable to do so without increasing the pain. The recovery is usually definite and no further trouble occurs, at least not for a long period, when a second attack may occur. We find no object for malingering, or a history of anything pointing to hysteria or malingering.

But the diagnosis can only be based on general considerations. We cannot put on paper these considerations definitely. We have to decide from such general considerations whether the pain be genuine or not, in just the same way as in other cases of neuralgia or pain without definite physical signs; usually from such general considerations we have no hesitation in brachial neuritis in deciding that the patient is suffering from severe pain. But if we have any indications of hysteria or malingering, the diagnosis may then be very difficult or impossible at first.

Rheumatic affections of the shoulder-joint should be carefully excluded, and the patient examined for swelling of the joint, grating on movement of the joint, or ankylosis, partial or complete, as detected by passive movements at the shoulder. These would be points against primary brachial neuritis, though joint affections may be associated with neuritis. In the rheumatic affections of the shoulder, though the pain may extend down the arm, it is usually greatest at the joint. Other joints are often affected afterwards, or have been affected previously, and we have often a history of various rheumatic affections.

Treatment.

A point of first importance is to relieve, by the position of the arm, pressure on the nerve trunks of the brachial plexus in the posterior triangle of the neck. The weight of the arm should not drag on the nerve trunks and the posterior surface of the clavicle should not press upon them at the lower part of the posterior triangle, nor should any strap or brace press on the posterior triangle. For many years I have treated cases of brachial neuritis by placing the affected arm in a sling. The sling should pass over the shoulder of the normal arm, and it should be so

arranged that it passes under the elbow of the affected arm and slightly raises it. The shoulder and the clavicle are thus slightly raised, and pressure on the nerve roots at the lower part of the posterior triangle of the neck (near the first rib) is prevented; also the weight of the arm is supported and dragging on these nerve trunks prevented. These I regard as points of much importance in the treatment of many cases. Very often the sling is of great service; in other cases it fails; but it is always worth trying, especially if we have a history of the local pressure causes already mentioned. The sling also keeps the arm at rest. All tight braces or shoulder straps should be removed at once, and a waist belt used in place of braces. If the patient is on military service all tight shoulder straps should be slackened or discontinued altogether when possible.

The arm should not be allowed to hang by the side. If the arm cannot well be kept all day in a sling, the hand should be placed in the pocket when the sling is not used, or the arm may be crossed over the front of the chest, the elbow being bent at a right angle, and the hand pushed under the edge of the coat just above one of the buttons. When the pain is very severe and the patient confined to bed, the sling should still be used. The arm may be also supported by pillows placed under the elbow, so arranged as to support the weight of the arm, or to raise the shoulder slightly; and the forearm should be crossed over the chest. In this way pressure by the clavicle on the nerve roots in the posterior triangle of the neck is avoided or diminished. When the neuritis is due to exposure of the neck and shoulders to cold and draught or damp, or when due to diabetes or toxic conditions, the sling may not be of much service, but in some of these cases also it is helpful.

The drugs which I have usually given, and which may be of service, are pyramidon, antipyrin, aspirin. General and dietetic treatment for diabetes or gout will be desirable when the patient suffers also from these diseases. It is always well to cut off alcohol.

Locally, liniment of belladonna, the fluid prepared by rubbing together equal parts of chloral and camphor in a mortar, or cocaine ointment, may be of some service. In very severe cases, opium, morphine, or codeia internally may be required, and, in exceptional cases, hypodermic injections of morphine. This was necessary in only one of my cases. Galvanism and many other methods of treatment have been employed.

Most of my cases, but not all, recovered promptly or improved markedly by the use of a sling, with pyramidon or antipyrin given internally.

FEBRILE URTICARIA.

BY

R. D. LAWRENCE, M.A., M.B., CH.B. ABERD.,
CAPTAIN R.A.M.C.(S.R.).

Two unusual cases of severe urticaria occurred in the British Station Hospital, Nowshera, N.W.P. India, within a week of each other, and were almost identical in the type and duration of the disease. Both were characterized by a severe and generalized urticarial eruption, five days' pyrexia, and the absence of any of the usual exciting causes of urticaria or inherent tendency to the disease.

CASE I.

A soldier, under treatment for right empyema by drainage of the pleural cavity. The discharge had practically ceased, and his temperature had been normal for a fortnight, when one morning he complained of itching of the left buttock, where several typical urticarial wheals were to be seen. Next day the wheals appeared on his forehead, and the lips were so swollen that he could hardly open his mouth. On the third day the eruption was generalized, and practically the whole body was covered with patches of elevated wheals surrounded by an area of congestion less raised than the wheals themselves.

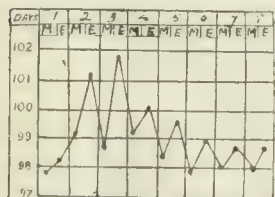


CHART 1.—Rash appeared on the first day, was at its worst on the third day, and disappeared on the sixth.

The ankles and the dorsa of the feet were particularly red and swollen, and here the condition was more of the nature of

angioneurotic oedema than of discrete wheals, and the sensation one of tenseness and pain more than of itch. Pyrexia began on the second day, and reached its maximum when the eruption was worst. The pyrexia and the urticaria declined and disappeared *pari passu*.

Neither dietetic changes, drugs, vaccines, insects, nor any of the usual exciting causes could be traced in this case. No other symptoms nor signs of disease were present, except the almost cured empyema. He had never had an attack of urticaria before and felt quite well as soon as the eruption passed off. He was treated at first with calomel and salines and afterwards with cooling applications, sedatives, and hypnotics, but obtained little or no relief from the intolerable itch.

CASE II.

A medical officer, working in the same hospital, but not in attendance on Case I, was in perfect health when he noticed one morning, five days later, a small white wheal on his forehead, which rapidly grew to the size of a hen's egg; he also felt itching on the parts of his back and shoulders exposed to the friction of the clothing. By next day the eruption had broken out in patches over most of his body, but the size of the swellings and the intensity of the itch in any one part was not always the same. At one time his eyes were closed; at another his cheeks and lips were swollen to twice their normal size, or his hands and fingers were so tense and swollen that he could not close them. In the parts of the body where the skin is loose, the wheals varied in size from 2 to 3 centimetres. They appeared first as white wheals, mostly oval or roughly circular, but soon became deep red in colour and were surrounded by an erythematous area of congestion which was intensely sensitive and irritable. In the fingers, hands, feet, and scalp, where there is little loose skin, distinct wheals were not seen, but the whole area was tense, swollen, and of a rosy colour. On the fourth day of the eruption the temperature was 103° F. and the urticaria and swelling at its worst. After that it rapidly declined (see temperature chart).

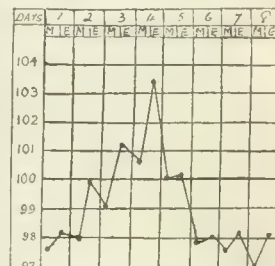


CHART 2.—Rash appeared on the first day, was at its worst on the fourth day, and disappeared on the sixth.

The mucous membranes were not affected, nor was there any sign nor symptom of disease elsewhere. The pulse throughout was of a rate commensurate with the temperature. It was easily compressible and bounding, but not dicrotic. The urine was normal; there was no jaundice and the blood count showed a slight polymorphocytosis of 77 per cent., but no eosinophilia.

Treatment was commenced with purgatives. Calcium lactate was given in full doses and adrenalin chloride hypodermically. Cool alkaline baths and sponging, $\frac{1}{4}$ grain doses of morphine, full doses of bromides, were all tried to allay the intolerable itch, but with no success. The patient was driven to walking about in pyjamas in the cold night air, and found that the best way to allay the itching was to keep himself almost shivering with cold.

Again in this case no exciting cause could be found. He had never suffered from such a condition before, but had noticed in the last six months one or two sudden transient attacks of oedema of the nasal mucous membrane with complete stoppage of nasal respiration. Apart from this he had never had any sign of vasomotor weakness or instability.

The symptoms in the two cases were practically identical, and were characterized by five days' pyrexia, by a diffuse eruption partly resembling urticaria and partly angioneurotic oedema, and by intolerable itch. They both occurred in the same hospital within a week of each other, but such cases have never been reported before in this district of India, as far as I know. None of the known causes of urticaria were present, and the questions arise whether it was not more than coincidence that these two uncommon cases appeared so close together in time and place, and whether there might not be some unknown specific infective agent to account for them both.

THE Harvard Medical School has recently received two bequests. One is an anonymous gift of £10,000 for the establishment of the James Melvin Fund for Tropical Medicine; the income is to be applied for purposes of research in preventive medicine. The other is a residuary legacy from Horace Fletcher, the apostle of "Fletcherism," and the income is to be used to "foster knowledge of healthful nutrition."

INTRAVENOUS INJECTIONS OF ANTIMONIUM TARTARATUM IN KALA-AZAR.*

BY

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In the *Transactions of the Society of Tropical Medicine and Hygiene* for December, 1916 (vol. x, No. 2, pp. 37-42), I briefly described the history of the introduction of intravenous injections of tartar emetic in trypanosomiasis, leishmaniasis, and other tropical diseases. It is unnecessary, therefore, to enter upon this again, apart from saying that the beneficial effects of the drug have been well proved since that date, especially in leishmaniasis.

The case I now report is of special interest, first, because the infection was acquired almost certainly in Baghdad, where this disease does not apparently exist indigenously; secondly, because it is the first case I know of which has been treated in England by this method; and, thirdly, because an unfortunate attack of influenza, by carrying the patient off just at the termination of his treatment, gave the opportunity of definitely determining whether or not a complete sterilization of his *Leishmania donovani* had taken place.

History of the Case.

The patient was born in England, and was never out of it till 1916. Joining the army in the end of that year, he served a month in France and then was transferred to India. He arrived there in March, 1917, and was stationed first at Bombay then at Karachi. While there he went for a trip to Bangalore and back, but, apart from that, had visited no other parts of India. After this he went to Mesopotamia, arriving in Baghdad on July 30th, 1917, where he stayed until invalided in June, 1918, to Bombay and then home to England.

Previous Illnesses.—Influenzal cold, 1915; inflammation of antrum and otitis after it; no pus; never venereal disease.

Present Illness.—The patient, as just stated, arrived in Baghdad on July 30th, 1917. He enjoyed good health until the following March, when, on the 25th of that month, he felt feverish and took his temperature, which was found to be raised. After this night sweats began to develop, so on April 19th, 1918, he went into hospital. His temperature was then found to be 102° F.; spleen enlarged. Blood films: no malaria or relapsing fever; three blood cultures for the enterica group all negative. No undulant fever reaction. The illness went on, and quinine had no effect upon the temperature. Leucocytes then 10,000. At this time *Entamoeba histolytica* cysts and *Lambia intestinalis* cysts were found in the stools. For this he had two courses of emetine, one by hypodermic injection, the other a combined one of emetine hydrochloride hypodermically and emetine bismuth iodide by the mouth. Two negative examinations for *histolytica* cysts were recorded after this. At the end of May, 1918, the liver was punctured but nothing was found. As the pyrexia and other symptoms continued the patient was sent to Basra on June 16th, 1918, then to Bombay, and finally, on August 29th, 1918, home to England.

On arrival he was admitted into St. Thomas's Hospital, under the care of Captain A. E. Russell, R.A.M.C., on September 29th, 1918. I saw him with Captain Russell on October 16th, and on examining smears of spleen juice that had been taken by splenic puncture found *Leishmania donovani* parasites. The patient's blood count at that time was as follows: Red cells 3,300,000; white cells 1,500; haemoglobin 60 per cent. He was running a remittent temperature, had a large spleen and all the other clinical signs were very typical of kala-azar.

Tartar emetic, intravenously, in small doses, was then begun. I saw him again on November 10th, and found that the temperature was still keeping high, and the patient was depressed and looking ill. On November 19th the patient was transferred to the Albert Dock Hospital and passed under my charge. I at once pressed the antimony, and after the first big dose of 2 grains the temperature fell for good and never rose again, with the exception of a rigor, once or twice, after some of the injections. (I am greatly indebted to Captain Russell for allowing me to use his notes and for giving me permission to publish the early part of the case.)

The following table gives the details of the treatment at a glance.

Table showing Progress of Case and Drug Employed.

Date.	Antimonium Tartaratum.	Date.	Antimonium Tartaratum.
1918.		1918.	
Oct. 18 ...	gr. $\frac{1}{2}$ intravenously	Dec. 23 ...	gr. $\frac{2}{3}$ intravenously
" 22 ...	gr. $\frac{1}{2}$ "	" 27 ...	gr. $\frac{2}{3}$ "
" 25 ...	gr. $\frac{1}{2}$ "	" 30 ...	gr. $\frac{2}{3}$ "
" 29 ...	gr. 1 "		
Nov. 1 ...	gr. 1 "	1919.	
" 5 ...	gr. 1 "	Jan. 2 ...	gr. $\frac{2}{3}$ "
" 12 ...	gr. $\frac{1}{2}$ "	" 6 ...	gr. $\frac{2}{3}$ "
" 15 ...	gr. $\frac{1}{2}$ "	" 9 ...	gr. $\frac{2}{3}$ "
" 21 ...	gr. 2 "	" 13 ...	gr. $\frac{2}{3}$ "
" 25 ...	gr. 2 "	" 16 ...	gr. $\frac{2}{3}$ "
" 28 ...	gr. 2 "	" 20 ...	gr. $\frac{2}{3}$ "
Dec. 2 ...	gr. 2 "	" 23 ...	gr. $\frac{2}{3}$ "
" 5 ...	gr. 2 "	" 27 ...	gr. $\frac{2}{3}$ "
" 9 ...	gr. $\frac{2}{3}$ "	" 30 ...	gr. $\frac{2}{3}$ "
" 12 ...	gr. $\frac{2}{3}$ "	Feb. 3 ...	gr. $\frac{2}{3}$ "
" 16 ...	gr. $\frac{2}{3}$ "	" 6 ...	gr. $\frac{2}{3}$ "
" 19 ...	gr. $\frac{2}{3}$ "	" 10 ...	gr. $\frac{2}{3}$ "

Notes to Table.

November 12th, 1918. Blood count: Red cells 3,900,000; white cells 1,480; haemoglobin 85 per cent. Down to this date at St. Thomas's Hospital.

November 19th. Transferred to Albert Dock Hospital, London School of Tropical Medicine.

December 5th. Blood count: Red cells 4,450,000; white cells 4,500; haemoglobin 90 per cent. The temperature fell to normal after the first 2 gr. dose and remained so.

December 27th. Gaining weight; spleen gone down very much.

January 6th, 1919. White cells 4,800. Spleen still palpable, though much reduced in size.

January 23rd. No sign of disease left now.

January 30th. White cells 4,000. Up and about; spleen just palpable under costal margin.

February 13th. Influenza.

February 17th. Died of influenzal pneumonia at 11.30 p.m.

Amount of antimony given: At St. Thomas's $\frac{7}{8}$ gr.; at Albert Dock Hospital $5\frac{1}{2}$ gr.; Total $6\frac{3}{4}$ gr.

By February 10th, 1919, just before the patient developed influenza, he was apparently in perfect health, and all signs of the disease had disappeared. He was up and about, eating well, going out and to all intents and purposes clinically cured.

The attack of influenza was severe. He felt tired on the night of February 12th. By next morning he had developed a temperature of 103°, but no lung symptoms. On the 14th, 15th, and 16th the temperature was still high, but the strength was well maintained. On the morning of the 17th a patch of pleurisy developed on the right side, just above the liver, and by the afternoon definite pneumonia had set in. This spread with alarming rapidity, and the patient sank and died at 11.30 p.m. from the severe toxæmia.

An autopsy was allowed and this was carried out on February 19th, at 10 a.m., thirty-four and a half hours after death.

Autopsy Notes.

External Appearances.—Post-mortem staining already well advanced, black liquid exuding from nose and mouth.

Thorax.—No fluid in pericardium, no pericarditis.

Heart. Contained ante-mortem clot in right ventricle. Organ ordinary size; no lesions of valves; muscle fairly hard, not specially friable; shows cloudy swelling. Aorta, no atheroma.

Lungs and pleural cavities. A few ounces of blood-stained fluid in right pleural cavity, none in left; no old pleural adhesions. Right lung: Recent pleurisy with lymph over lower lobe. Whole of this lobe solid with confluent bronchopneumonic patches, also oedematous. Upper and middle lobes congested, no pneumonia. Left lung: Commencing bronchopneumonia in lower lobe; congestion in upper. No old tubercle in either lungs.

Abdomen.—No peritonitis.

Liver. Weight 6 lb. 5 oz. No perihepatitis. Organ in a state of what appears to be an early multilobular cirrhosis, markedly fatty also; yellow colour; not much blood in organ.

Spleen. Weight 1 lb. 9 oz.; enlargement chiefly upwards. Firm to the feel; pulp firm; darkish colour, no perisplenitis.

Kidneys. Cloudy swelling and fatty changes; no nephritis. (Albumin was never present in the urine during life.)

Stomach. Contained some black grumous fluid; mucous membrane, patchy congestion at places.

Small intestine. Nothing definite to note.

Large intestine. A series of small pigmented scars in caecum, chiefly round opening of appendix; look like healed ulcers, very small—2-4 mm. only across. (Were those amoebic ulcers which gave rise to the *Entamoeba histolytica* cysts found in the faeces in Baghdad?) No large ulcers in colon. No sign of kala-azar ones. Some small deeply congested areas near rectum.

Mesenteric glands congested and slightly enlarged.

Groin glands palpable, slightly enlarged.

Bone marrow very dry, normal colour.

* Published by permission of Sir R. Havelock Charles, G.C.V.O., Medical Adviser to the Secretary of State for India.

Smears were taken from the liver, spleen, bone marrow, mesenteric lymph glands, inguinal lymph glands, kidneys, lungs, and heart. Though a very exhaustive search was made in the many smears taken from these different organs, nothing resembling *Leishmania donovani* was seen.

In sections of the same organs a similar absence of parasites was noted, this proving definitely that the specific parasite had really disappeared. Sometimes an infection with *L. donovani* is cleared out after any severe septic change, and as the patient had suffered from a severe toxæmia from his influenzal pneumonia just before death, the possibility of this having something to do with the disappearance of the parasites, though unlikely, must not, of course, be forgotten. From the disappearance of all clinical signs early in the treatment after the large doses were employed, it may be surmised that the sterilization took place about that time or a little later, and at the time the influenza developed there is little, if any, doubt that he was quite free from all infection.

The autopsy in this case, in addition to yielding valuable information as to the destruction of the specific parasite of kala-azar, is also of importance in enabling one to determine what effect, if any, large doses of antimony intravenously have upon the different viscera. Can one produce a state of chronic poisoning by too large and too prolonged doses?

Breil and Priestley¹ report a case of poisoning in an aboriginal Australian, 22 years of age, suffering from ulcerating granuloma.

Treatment in this case was begun with doses of 0.08 gram of tartar emetic in normal saline, administered intravenously, increasing after two days to 0.1 gram, and after a further two days to 0.12 gram; injections were given on alternate days, until altogether 1.74 grams had been given.

The day following the last injection the patient complained of slight nausea and vomiting and looked ill. On the third day after he became delirious, had a rise of temperature, and vomited dark blood. Death took place sixty-four hours after the final injection. Diarrhoea did not occur, nor was blood and albumin noted in the urine.

At the autopsy the liver was found to be of normal size; microscopically a widespread fatty degeneration was present, with here and there acute focal necroses. The kidneys showed lesions corresponding to an acute interstitial nephritis with calcareous deposits in the medullary substance. The heart muscle showed slight fatty changes; the stomach was oedematous and congested, but did not show any ulceration. No chemical analysis was made.

Analysing this case, the kidneys would appear to have been at fault, and the excretion of the drug was probably hindered on account of this. The total antimony given was not large, only 1.74 grams. The symptoms were those of an acute rather than a chronic poisoning.

While engaged in writing up the details and consulting the literature of my case an opportunity of studying a similar case, I note, has occurred to Archibald and Innes in Egypt.²

These observers report a case of bilharziosis treated by intravenous injections of tartar emetic, death taking place at the end of a course of 33 grains from influenzal pneumonia. In this case the liver weighed 3½ lb., and was of a pale yellow colour; microscopically the liver cells were granular and vacuolated, and areas of necrosis were seen (there is no mention of any cirrhosis being present). The kidneys showed cloudy swelling and fatty degeneration and infiltration.

In discussing the question of poisonous effects of antimony the authors cite Knowles as recording 5 deaths out of 20 cases of kala-azar treated by this method. No details are given, however, as to whether these were due directly to the antimony or not. Archibald and Innes's case evidently died, like my case, from influenzal pneumonia, and the question of whether the antimony had anything to do with the fatal issue is *sub judice*.

In the case described above it will be remembered that the liver showed a well marked cirrhosis, was double the normal size (6 lb. 5 oz.), and to the naked eye was yellow and distinctly fatty. Was this condition, then, due to the kala-azar (cirrhosis of the liver has been described in this disease), or was the fatty change produced by the toxæmia of the influenzal pneumonia, or was the cirrhosis and fatty change due to the large doses of antimony given from time to time?

In order to determine this, careful microscopic examinations of sections of the liver were made and studied by Dr. Newham, myself, and Major Foulerton, R.A.M.C., who

kindly took some of the tissue for analysis. These sections show considerable fatty infiltration of the parenchymatous cells of the liver, and also considerable fibrous changes of a somewhat irregular type. As Major Foulerton is now working at the poisonous effects of trinitrotoluene, tetrachlorethane, and the salvarsan group on the liver and other viscera, I have handed this aspect of the case over to him and he will report upon the matter in detail later.

Apart from the liver and kidneys, the other viscera showed no changes of importance. The stomach was perhaps slightly congested; it showed no ulceration. The small intestines showed no appreciable change, while all that was visible in the large intestine were some small pigmented spots suggestive of healed ulcers around the ileo-caecal valve and a few congested areas near the rectum. The former may have been old amoebic ulcers in the early stage, and may have been the source of the *E. histolytica* infection detected and successfully treated in Baghdad. Apart from these the large gut showed no sign of any visible lesions. No *E. histolytica* (free or cystic forms) were found in the stools when the patient was under my care. He had a moderate *E. coli* infection, and on one occasion four coccidia (Isospora) were found in the stool. No trace of where these came from could be detected on a close examination of the gut, even with a hand lens.

It is thus evident that antimony given in large doses intravenously over long periods of time may produce fatty changes in the viscera, and that in other cases toxic symptoms of an acute nature may appear. Recently Christopherson³ has drawn attention to the fact that tachycardia has been met with in cases in Egypt undergoing antimony treatment for bilharzial disease. I have a case of that disease under my care now, and several times after a 2-grain intravenous injection of tartar emetic the patient has complained of a feeling of constriction over the cardiac area. As he has also developed some indigestion, I have stopped further injections for the present.

As regards kala-azar, what one requires is a test to determine when the leishmanial parasites have disappeared. Whenever one can be certain of this, then the injections should cease, as they can then do no further good, while, on the other hand, they may do considerable harm.

Rogers relies on the absence of fever for a considerable time, steady gain in weight, and diminution in the size of the spleen as indicating recovery and cure, and until some better test can be evolved we may, more or less, accept this.

Kala-azar is a deadly disease, and it is justifiable to push the antimony even to a dangerous extent. The fatty changes that have been described in the few cases that have come to autopsy might quite well have disappeared if the patients had not been carried off by intercurrent disease, and it is very likely that all cases show these changes to a certain extent but recover from them when the drug is stopped. The degree of fatty change in the liver is much more extreme in ankylostomiasis, yet all these cases do not die, but apparently recover perfectly, once the parasites have been removed.

As regards bilharziosis, antimony intravenously is now on trial, and reports so far would seem to indicate that it is of value. Here again a test is required to enable one to say if the infection has disappeared or not, and so to obviate the danger of going on too long with the antimony. Archibald and Innes have suggested that the disappearance of the eosinophilia might be used for such a purpose. It remains to be seen whether this will disappear at once on the death of the adult worms. In the case of bilharzial disease mentioned above,⁴ which I have been treating with antimony injections, all blood and ova have disappeared now for some time, but the eosinophilia persists as high as when the patient was first seen. Possibly the infection is only dormant, and may spring to life again on the cessation of treatment.

CONCLUSIONS.

1. Antimonium tartaratum is evidently a specific against *Leishmania donovani*, and in the case under discussion sterilized the patient of his infection.

2. Antimony in large doses, given over prolonged periods of time, produces fatty changes in the liver and kidneys, which may seriously damage the resisting powers of the

patient, and may even cause death (Breinl and Priestley's case).

3. Antimony should not be given for longer periods than necessary, and therefore it is important that some definite test should be evolved which will indicate when the infection of kala-azar has disappeared and the patient is cured.

4. If antimony is finally proved to destroy the *Schistosoma haematobium*, then a similar test to determine when this destruction has taken place is required.

5. In all cases where antimonium tartaratum is given intravenously the patient should be confined to bed on the day of the injection and kept there till the day after, and should be carefully watched throughout the course, any indications of gastric or constitutional disturbances at once contraindicating further injections.

6. Not more than two injections a week should be given, and the salt should not be given in too concentrated a form.

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- ¹ Breinl and Priestley: Notes on a case of Antimony Poisoning. *Journ. of Trop. Med. and Hyg.*, February 15th, 1918, vol. xxi, pp. 38-39.
² Archibald and Innes: *Journ. of Trop. Med. and Hyg.*, April 1st, 1919.
³ BRITISH MEDICAL JOURNAL, April 19th, 1919. ⁴ *Journ. of Trop. Med. and Hyg.*, May 15th, 1919.

TENDON TRANSPLANTATION IN DROP-WRIST DUE TO NERVOUS INJURY.

BY

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WHILE realizing the great importance of resorting when possible to nerve suture or grafting in cases of drop-wrist, it is not my intention to decry such "ideal" treatment, but to bring forward arguments in favour of a more extensive appreciation of the advantages of tendon transplantation and anastomosis under conditions where the performance of suture, etc., is not possible, or even in some cases as an adjunct to this.

In the majority of cases in which the musculo-spiral nerve has been severed as a result of gunshot wounds, the humerus has been fractured, often suppurating has supervened, and secondary nerve suture cannot be carried out for some months, even under the most favourable circumstances. In spite of vigorous massage, movements, and electrical treatment, the extensor muscles waste, and the chances of a hand and fingers which shall function as formerly is indeed small.

Most men would rather have a useful hand now than an extremely problematical perfect hand in two or three years' time. Nor does the operation of tendon transplantation performed relatively early preclude or prejudice the later performance of nerve suture.

Nor does it appear unjustifiable to perform tendon transplantation about the wrist at the same time as nerve suture of the musculo-spiral in the arm, for, by the active movements at the wrist and finger joints which follow the completion of the tendon transplantation, troublesome adhesions in the small joints of the fingers and wrist are prevented, and the forearm extensor musculature is kept in better condition for the reception of the newly formed neurons than by the most skilled massage. The contention that if tendon transplantation is performed in addition to nerve suture it will in some cases become unnecessary later is more than balanced by the fact that, properly performed, it can do no harm after nerve regeneration has taken place, and the restoration of function to the paralysed muscles will in all cases be expedited.

The theory and practice of tendon transplantation stands or falls on its results. The questions to be answered are: Will the hand be benefited by transplantation? Will it prohibit or prejudice later nerve suture should this become possible? Will the residual group of robbed muscles be so weakened as to diminish their utility to vanishing point? In my opinion these questions can be satisfactorily answered, and a verdict given in favour of tendon transplantation when the following indications are present:

1. Severance with large loss of substance of the musculo-spiral nerve.
2. Severance of the musculo-spiral nerve with much bony injury and prolonged suppuration.

3. In cases where very rapid and complete wasting of extensor muscles has supervened.

4. In all cases of division of the posterior interosseus nerve.

The indication of the last group is based on the fact that the nerve is exceedingly small, runs a very circuitous course, is difficult to find, and the fact that the carpal extensors, extensor carpi radialis longior and ulnaris, are nearly always spared. The extensor carpi radialis longior and supinator longus being supplied by the musculo-spiral before its division into radial and posterior interosseus can be utilized as an extensor of the thumb and fingers.

The commonest type of posterior interosseus paralysis is that due to severance of the nerve just below the mid-point of the forearm, resulting in paralysis of the extensor ossis metacarpi pollicis, extensor brevis, and longus pollicis, and the whole or part of the common extensors of the fingers; more commonly this is partial, and the power of one or two fingers survives. These cases do exceedingly well with tendon anastomosis. The supinator longus, detached at its insertion, can be anastomosed with the extensor ossis metacarpi pollicis, and the extensor carpi radialis longior with the common digital extensors, or the extensor longus pollicis if the finger extensors are spared. In these (partial) cases it will be seen that whereas tendon anastomosis materially improves the hand within a few weeks, it does not, *a priori*, prejudice the further performance of posterior interosseus suture, were one skilful or rash enough to attempt it later.

The complete drop-wrist from musculo-spiral paralysis presents a more serious and difficult problem. This disabling condition is primarily due to the hyperflexion at the wrist-joint. Even in the normal hand the flexor muscles of the fingers cannot exert their maximum power unless there is a moderate degree of extension at the wrist-joint. When the normal hand is voluntarily placed in the attitude adopted by the drop-wrist of musculo-spiral paralysis, it is found that the fingers cannot be clenched—indeed, they cannot be fully flexed on the palm. Much more marked, then, is the condition in the flaccid paralysis of drop-wrist. In other words, the drop-wrist (or normal hand in this position) cannot make a "fist."

It behoves us, therefore, first to correct this hyperflexion of the wrist-joint and allow full play to the digital flexors. A patient with a wrist ankylosed in line with the forearm, with free finger movements, is in a better condition to make the fullest use of his fingers than one with a drop-wrist. I do not think this point is sufficiently appreciated by English surgeons. Continental surgeons have, however, recognized this, and carried out fixation of the wrist-joint by means of an artificial ligament manufactured out of fascia lata. The drop-wrist has not been cured—that is, return of power of extension—but a permanently slightly extended wrist has resulted, allowing full play to the flexors of fingers and thumb, which later can be abducted by its shorter abductor.

In these cases a fascial graft can be manufactured to act as a ligament permanently extending the wrist. It is attached to the third or fourth metacarpal distally and to the radius or ulna proximally, slightly nearer the upper extremity than the lower. If this is done, the flexor carpi radialis can be utilized for anastomosis with the extensor communis digitorum by passing its tendon through an aperture in the interosseus membrane, or, better still, the pronator quadratus, as there is less likelihood of the formation of adhesions with the tendon passing through muscle than interosseus membrane. The palmaris longus can easily be anastomosed with the extensor ossis metacarpi pollicis, and a very fair amount of abduction of the thumb results.

The method of transplanting the flexor carpi radialis and ulnaris to the insertions of the extensor carpi radialis longior and extensor carpi ulnaris works well, but leaves extensors of the fingers and those of the thumb without suitable "tendon donors," unless the final carpal flexor palmaris longus (not always present) is utilized, or a suture between the insertion of the pronator radii teres and the belly of the extensor communis digitorum effected, a not very satisfactory plan on *a priori* grounds as the resulting muscle pulls round a "corner."

The supporters of this method claim that after suitable education the flexor carpi radialis and ulnaris function as extensors of wrist or fingers.

I am of opinion that it is not so, and that they never act as true extensors, in that they become independent of flexor impulses, and are dissociated from the rest of the muscles supplied by the median and ulnar nerves. True extension consists of a "pressor" impulse along the extensor tract, with inhibition of the flexor group of muscles. But, inasmuch as the flexor carpi radialis and ulnaris are powerful muscles and the flexors of the carpus have been diminished by their removal, they fix or slightly extend the carpus when a flexor impulse is transmitted via the median and ulnar nerves to the flexor musculature of the forearm, no matter what the ultimate insertion of its individual muscles may be (in this case the extensor surface of the metacarpus for two of them). It is this slight extension and fixation of the wrist which allows full play to the flexors of the fingers and thumb. Shortening of the tendons of the extensor carpi radialis longior and brevior acts in the same way, but is apt to stretch after a time, and is not so satisfactory as the fascial ligament mentioned above.

When the essential fact is fully realized that it is the acute flexion of the wrist which is so disabling in musculospiral paralysis, the cases of this complaint will rapidly become fewer. There should be no excuse for a drop-wrist to-day. If the wrist be fixed in slight extension by any of the above methods, the "uselessness" of the hand will largely disappear, even if nothing more is done to promote active extension of the fingers. The fingers, indeed, will largely settle this question for themselves, and will, to a certain extent, become "passively" extended by the "rebound" on the inhibition of their flexor impulse.

Notes on the Operation.

Asepsis.—This is of course essential; a tendon anastomosis which undergoes the present day epidemic of sepsis will not be a success.

Correct Alignment of the Anastomosed Tendons.—It is necessary to lay stress on the absolute necessity of the "donating" tendon being in a straight line from the belly of the muscle to the acquired insertion. If this is lost sight of a "lateral implantation" ensues, resulting in little or no benefit to the patient. Surgeons, for long too closely wedded to the anastomosis of two tendons through short incisions, have lost sight of the intervening "kink" round which the tendon works with a maximum of friction and a minimum of effectual pull. This is particularly noticeable in the transposing of flexor muscles to act as extensors by passing them through the interosseus membrane, or the anastomosis of the palmaris longus to the extensor ossis metacarpi pollicis. The general lie of the muscle and oblique opening through the interosseus membrane or pronator quadratus, with a straight line passing through the points formed by junction of belly and tendon, interosseus opening, and insertion into the bone, are the essentials to be aimed at. Muscles do not act well when pulling round an imperfect muscular or fascial corner.

Re-education of the Transplanted Muscles.—Flexor muscles probably never act as extensors when their insertion is transplanted with this end in view. They probably act by fixing the carpus or by overbalancing their recently divorced brother flexors, bringing about some degree of extension when a flexor impulse is initiated in the cerebral cortex, since they are more powerful muscles than the surviving flexors. In any case they allow the flexors of the fingers better play, and before this can be effected to the maximum of its power, considerable re-education is necessary. This takes the form of active and passive "purposive" movements, faradism to the bellies of the transplanted muscles, and ergographic contractions of the fingers, which by the "rebound" helps to stimulate the contraction of the newly acquired extensors.

Early Movements.—Slight passive extension of fingers and carpus should be begun quite early (after a week or ten days), but active movements should be delayed until six weeks after operation.

The method of anastomosis I have used has been that of buttonholing the receiving tendon, inserting the donating tendon through it, and carrying its distal end for some distance along the dorsal aspect of the receptor, and fastening with several fine linen thread sutures.

In conclusion it might be mentioned that the observations in this paper are based on some dozen cases. In almost every instance the patient voluntarily expressed

himself as well pleased with the result. I do not recall any case in which there was not at least a fair degree of improvement on the ante-operative paralytic condition.

NOTES ON CASES OF INFLUENZA IN A BASE HOSPITAL IN ITALY.

BY

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DURING a period of ten weeks (September 20th, 1918, to November 30th, 1918) a severe epidemic of influenza occurred in the area served by the hospital. Among the cases admitted 43 deaths occurred; it is with these that the present paper deals.

In 15 of these 43 cases an examination of the sputum was made during the early stage of the illness. In 9 instances the sputum was so heavily contaminated from the mouth, being loaded with bacteria of mixed types, that it was not possible to pick out any which could be regarded as likely to have been present in the bronchial secretion. In 2 cases (13 per cent.) pneumococci were found, in 1 case (7 per cent.) streptococci, and in 4 cases (27 per cent.) influenza bacilli. By the term influenza bacilli is meant bacilli, sometimes free, sometimes enclosed within polymorphonuclear leucocytes (both forms frequently occurring together), having a length of 0.8μ to 1.5μ , and a breadth of 0.5μ to 1.0μ , not staining by Gram's method, and presenting some variation in length and breadth in different sputa and cultures, as also in the same stained preparation.

It is of interest to compare the above figures with those obtained in the routine examination of sputum from patients in the hospital during the period under observation. In all, 116 specimens of sputum were received; of these, 64 (55 per cent.) were too heavily contaminated in the mouth to be of value; 28 (24 per cent.) contained influenza bacilli, 2 containing also pneumococci and 1 streptococci; 10 (9 per cent.) contained *Diplococcus catarrhalis*, 7 (6 per cent.) pneumococci, 3 streptococci, 1 staphylococci, and 1 tubercle bacilli. In all cases the bacteria enumerated were present in great abundance. If the specimens which were heavily contaminated from the mouth are discarded, the above percentages are much higher: thus the specimens in which influenza bacilli were found form 57 per cent. in the first series and 54 per cent. in the second. The latter series represented all the cases in hospital; it was not confined to cases regarded as influenzal.

On *post-mortem* examination, pneumonia was present in every case except two (95 per cent.), affecting both lungs in 37 cases (86 per cent.), and complicated in 5 cases (11.5 per cent.) with pleural effusion, in 8 cases (18.5 per cent.) with empyema, and in 1 case with pneumothorax. Cloudy swelling of the kidneys, liver, and spleen, friability of the heart muscle, and enlargement of the mesenteric and mesocolic lymphatic glands were present in varying degree in different cases. Enlargement of the adrenals, with collection of a brownish liquid or of semi-liquid material between cortex and medulla, was met with. Slight enlargement of Peyer's patches, with or without enlargement of the solitary glands of the small intestine in the neighbourhood of the caecum, was also observed. In one case there was ulceration of the large intestine, and in two cases blood staining of the root of the aorta and of the pulmonary artery was marked.

Microscopical examination of the exudate from the affected lung showed influenza bacilli in 17 cases (38.5 per cent.), streptococci in 18 cases (42 per cent.), staphylococci in 7 cases (16 per cent.), pneumococci in 7 cases (16 per cent.), and *Diplococcus catarrhalis* in 2 cases (4.5 per cent.); in 7 cases (16 per cent.) no bacteria were found. Double infections were observed in 14 cases—namely, influenza bacilli + streptococci, 4 cases; influenza bacilli + pneumococci, 2 cases; influenza bacilli + *D. catarrhalis*, 2 cases; influenza bacilli + staphylococci, 1 case; and staphylococci + streptococci, 4 cases. In one case a triple infection of influenza + staphylococci + streptococci was observed.

At thirty-five of the autopsies blood-agar cultures from the hepatized lung were made. Colonies of influenza bacilli were obtained in 15 cases (43 per cent.), staphylococci in 19 cases (54 per cent.), streptococci in 19 cases (54 per cent.), pneumococci in 2 cases (6 per cent.), *M. tetragenus* in 1 case (3 per cent.), and Gram-positive bacilli in 1 case. Influenza bacilli and staphylococci were obtained in 3 cases, influenza bacilli and streptococci in 5 cases, influenza bacilli, staphylococci, and streptococci in 2 cases, influenza bacilli, staphylococci, and pneumococci in 1 case, staphylococci and streptococci in 8 cases, streptococci and *M. tetragenus* in 1 case. In one case no growth was obtained.

The blood-agar medium was made by adding to peptone meat extract agar (previously melted at 100° C. and then cooled to 50° C. to 45° C.) 10 per cent. of a solution of blood (warmed to 40° C.). The latter solution was prepared by mixing 5 c.cm. of human blood, withdrawn from a vein, with 95 c.cm. of sterile 0.85 per cent. sodium chloride solution, and then laking by the addition of 10 c.cm. of ether. Colonies of influenza bacilli were isolated by plating out.

In several instances influenza bacilli could not be obtained in culture though present in the lung exudate; the reverse was also observed. In three cases influenza bacilli were found in the sputum, but subsequently at the autopsy could not be recognized in the lung exudate on microscopical examination of a smear preparation; in one of these cases however, colonies of influenza bacilli were obtained on culture from the lung exudate.

If all observations are grouped together (sputum, smear from lung exudate, culture from lung exudate) the following figures are obtained: Influenza bacilli were found in 56 per cent. of the cases; staphylococci in 51 per cent.; streptococci in 49 per cent.; pneumococci in 18.5 per cent.; *Diplococcus catarrhalis* in 7 per cent.

The cases first occurring were of a severe type rapidly terminating fatally; subsequent cases were of longer duration, and were frequently complicated with pleural effusion and empyema.

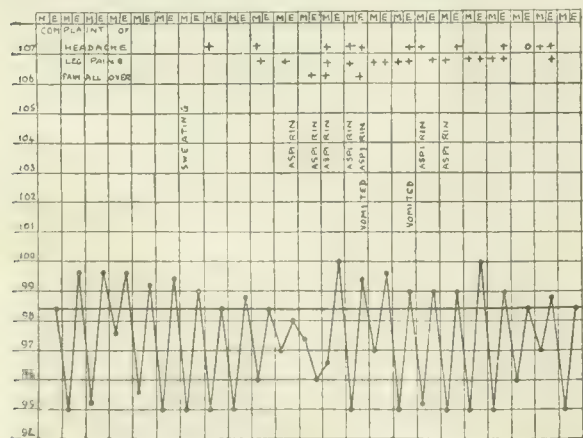
CHRONIC TRENCH FEVER.

BY
GORDON WARD, M.D.

DURING the last few years many cases of trench fever have passed through the hands of medical officers, and the disease is likely to trouble us and our patients for some years to come. For this reason I am prompted to send a note of two cases which exemplify somewhat unusual symptoms, although such as the nature of the disease would lead us to expect.

CASE I.

Pte. C. W. B., Royal Warwicks, was admitted to hospital as a N.Y.D. case. He complained of extreme pain in the head and legs, and of sleeplessness due to the pain. He presented the following signs, namely, frequent sweating, irregular temperature, never above 100° at night, and showing no definite periodicity, occasional vomiting, and more frequent nausea; pulse rate varying from 76 to 116, and the typical hyperalgesic



areas (C8 and D1; D 7, 8, 9; all lumbar) described by Carmalt-Jones. A diagnosis of trench fever seemed fully justified. It was thought that cases of trench fever with small evening pyrexia might show a much larger swing than normal below the normal line. A few cases and a few controls from other

cases were therefore put on special charts. This case was the best example obtained of the phenomenon expected. Chart herewith shows this. It was not found to anything approaching the same extent in any case not trench fever. Possibly this may be of some assistance in diagnosis.

It was very difficult to obtain accurate records of pulse rate in all cases, but it may be stated that this followed the temperature pretty accurately except that the prevailing rate was lower after he had been in bed a week. Case II is an example of vasomotor symptoms. These have not attracted much notice but are mentioned in the American report. Analogy with malaria led me to look for them, and some degree of "dead fingers" and "dead feet" was noted in several cases. Cases were not included unless the "dead areas" were obvious to sight and touch. Other symptoms of the same order resembled giant urticaria and erythromelalgia.

CASE II.

Rfn. A. E. B., K.R.R.C., was admitted with typical acute trench fever. In the first seventeen days he had four bouts of pyrexia. After this the temperature became irregular. On the twenty-sixth day he had acute pain in the legs, which were observed to be very red (the feet only). This was much increased when the legs were allowed to hang over the edge of the bed. This erythromelalgic syndrome was not observed again. On the twenty-ninth and thirtieth days he had slight haematuria, the urine contained a few granular blood casts. On the thirty-second day the urine was free from albumin and casts and remained so. At the same time as the haematuria there was some oedema of the calves of the legs, there was none of the feet. The oedema was very slight. There was no other oedema. His temperature was 101° on the two days of haematuria, afterwards it did not exceed 99°. His pulse was usually between 60 and 80; it was not recorded in the acute stage of his illness except on admission, when it was 116. He was up on the fortieth day, and sent to England on the forty-second.

Case II did not suffer from dead fingers, and the erythromelalgic symptoms were only present on one occasion. I consider that the haematuria was not significant of a kidney lesion but rather analogous to the occasional haematuria of malaria. It may have been haemoglobinuria, and this seems probable on theoretical grounds. It was not reported until the thirty-ninth day, and the next specimen obtained did not contain blood cells but only casts containing yellow pigment. The quick disappearance of urinary signs is also significant. I have seen oedema of the calves also in malaria in the absence of albuminuria. This note does not profess to be complete; it was very difficult to carry out detailed investigations in France, but I hope that, in spite of this, the mere mention of such symptoms may be of use to others and of interest from the theoretical side.

April 20th, 1919.

Hettsonian Lectures

ON

JAUNDICE: WITH SPECIAL REFERENCE TO TYPES OCCURRING DURING THE WAR.*

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LECTURE III.—PART II.

SPIROCHAETAL AND ACHOLURIC JAUNDICE, Etc.

INFECTIVE JAUNDICE IN SPIROCHAETOSIS ICTERO- HAEMORRHAGICA.

This form of jaundice was first differentiated by two Japanese workers, Inada and Ido,¹⁰ in November, 1914, who made a brilliant investigation into the etiology, symptomatology, and pathology of the disease.

In September, 1916, Captain A. Stokes, R.A.M.C., and Captain J. A. Ryle, R.A.M.C., published¹¹ an account of several cases they had carefully investigated amongst our troops in Flanders, and later, in January, 1917,¹² they published a further account of this work. Major-General Sir Bertrand Dawson, Lieut.-Colonel Hume, R.A.M.C., and Captain S. P. Bedson, working independently, published¹³ a very complete account of their observations on cases

* Delivered before the Medical Society of London, April-May, 1919.

occurring in the army in France, and in November, 1918,¹⁴ at the Royal Society of Medicine, London, Sir Bertrand Dawson gave a further more detailed account of this disease.

During the past three years this form of jaundice has been closely studied in various parts of the world and most careful investigations have been made. Thus in the French army the disease was found by Martin and Pettit, who published¹⁵ an account of it in October, 1916, and have made several further contributions. Investigations on similar lines have been made in the Belgian and Italian armies.

The occurrence of the disease in rats has also been closely studied on the Continent, in Japan, America, and elsewhere, and in March, 1918, Dr. A. E. Coles¹⁶ found on examination of rats at Bourne-mouth that 9 per cent. were infected with the specific spirochaete.

Accounts so full and careful have been published recently of this disease that it will be unnecessary to give a detailed description.

The Clinical Manifestations.

An excellent account of these was given by Sir Bertrand Dawson,¹⁴ which I cannot do better than quote:

The disease has more often a sudden than a gradual onset, and manifests itself by shivering, head and body pains, great prostration, vomiting, and diarrhoea. The temperature rises quickly to 102° or higher. During the succeeding three or four days the conjunctivae become injected, and herpes, which is liable to become haemorrhagic, appears on the lips in about 40 per cent. of the patients. Bleeding occurs in most of the severe cases, but uncommonly in the mild cases. It may come from the nose, lungs, stomach, bowel, or as a purpuric rash. Early in the illness a slight haemoptysis is a valuable diagnostic sign. It is to be noted that haemorrhage often precedes jaundice in order of appearance.

The jaundice usually appears on the fourth or fifth day, but may be as early as the second and as late as the seventh day. It reaches its height about the tenth to twelfth day. In some cases it is intense, and the skin takes the greenish hue met with in complete obstruction of the common bile duct. Constipation is marked. The stools may become clay-coloured, though in most cases a small quantity of bile gives them a light brown coloration. Tenderness in the upper abdomen is usual. The tongue is furred and brown. The liver is frequently enlarged to the extent of two or three fingerbreadths below the costal margin. The spleen is not palpable. The glands in the axillae and groins are sometimes enlarged and shotty.

In severe cases there are evidences of an acute bronchitis. The respiration rate may rise to 28 or 30, and when a fatal result is impending may resemble that met with in uraemia. The pulse is slow in proportion to the pyrexia, a rate of 75 to 85 being quite usual.

In this respect the disease resembles enteric fever, though differing from the latter in that the heart does not lock with atropine. The systolic blood pressure is about 120 mm., being higher than that of enteric fever.

The early weakness and prostration are characteristic of the disease. Frontal headache and aching behind the eyeballs are distressing symptoms of the commencement, but diminish as the days pass. The muscular pains last longer and are at times intense. Twitchings and convulsions may precede or accompany the coma of the fatal cases.

The urine contains bile in abundance, which may persist for four to five weeks. Albumin is usually present, and may reach a sixth; casts—hyaline, epithelial, and granular—are common. Some French authors lay stress on the evidence of renal insufficiency.

The course of the illness varies with the severity of the disease. In the acute case an irregular type of pyrexia persists for ten to fourteen days and ends by lysis. In some instances there is a secondary rise of fever about the beginning of the third week which is difficult to explain, since there is no accompanying exacerbation of symptoms or increase of jaundice. The jaundice will reach its height about the tenth day, and this often coincides with the fall of the temperature. In other cases the temperature will fall earlier while the jaundice is still deepening. Convalescence is slow, but recovery is complete.

It is interesting to note that spirochaetosis icterohaemorrhagica may occur without jaundice. Stokes¹² stated that in 100 cases examined by him jaundice occurred in only 60 per cent.

Morbid Anatomy.

In three cases described by Sir Bertrand Dawson, marked evidence of duodenitis and intense inflammation in the area round the ampulla of Vater were found. In one of his cases associated with this duodenitis was a plug of mucus impacted in the ampulla. He says that it would seem clear that in some cases the spirochaetal infection localizes in the duodenum. Stokes did not mention the occurrence of duodenitis in his fatal cases. Both observers describe the bile ducts as being free from inflammatory

changes to the naked eye. Usually the liver showed few abnormal changes macroscopically, but on microscopical examination evidence of cellular degenerative changes was found in some instances. In one case described by Dawson the liver was diminished in size, its capsule wrinkled, and microscopically there were numerous areas of cell necrosis—in other words, a condition of acute yellow atrophy. Hart quotes¹⁷ a case in which extensive replacement fibrosis had supervened on acute yellow atrophy, just as in Case 1 of my tetrachlorethane cases.

The condition of acute yellow atrophy in fatal cases of spirochaetosis icterohaemorrhagica is apparently uncommon; death usually results from the toxæmia of the disease rather than from auto-intoxication consequent on acute yellow atrophy.

In all cases the kidneys showed some degenerative changes in the epithelial cells. In some there was evidence of a nephritis which in a certain number was haemorrhagic. In none of Dawson's or Stokes's cases was there found any enlargement of the spleen.

Clinical Pathology.

The scarcity in number of organisms present in infected patients makes it necessary frequently to resort to guinea-pig experiments in order to discover the spirochaete. The guinea-pig is extremely susceptible to the disease; the introduction of infected material into the intraperitoneal cavity is followed, after an incubation period, by a rapid development of typical symptoms associated with a heavy infection, so that it is easy to demonstrate the spirochaete.

In man the blood infection is of short duration, and after the fifth day of the disease the chances of a positive result diminish. The infection, as already mentioned, is not heavy, so that blood film examinations are usually negative. Introduction of some of the blood (3 c.cm.) into the peritoneal cavity of a guinea-pig is likely to give a positive result up to the seventh day of the illness.

The urine from the tenth day to the fifth week usually contains spirochaetes, and the centrifugized deposit may yield a positive result on microscopical examination, or a portion injected into a guinea-pig may reproduce the disease in it. The spirochaete obtained from the urine is agglutinated by the blood of the patient after the fourteenth day of the disease.

After the fourteenth day of the disease protective substances conferring immunity are found in the blood, and an immunity test with guinea-pigs was described by the Japanese workers and has been confirmed by Stokes and Dawson.

Mortality.

The Japanese workers found a high mortality (about 30 per cent.). Stokes put the mortality in his cases at less than 6 per cent. Dawson estimates it as not more than 4 to 5 per cent. in his series.

A comparison of the symptoms of spirochaetosis icterohaemorrhagica with those of epidemic catarrhal jaundice renders it clear that the two diseases are quite distinct. In the latter the low mortality, the promonitory period of several days before the onset of pyrexia, the absence of herpes and of haemorrhagic symptoms, the absence of symptoms of severe toxæmia, the common occurrence of splenic enlargement, are prominent distinguishing features.

Weil's Disease.

In this type of jaundice, described by Weil in 1886, the symptoms resembled in many respects those of spirochaetosis icterohaemorrhagica, but important points of difference are the high mortality (30 per cent.) and the marked splenic enlargement. The German workers strenuously deny that Weil's disease is identical with spirochaetosis icterohaemorrhagica, either clinically or bacteriologically.

It is, in my opinion, most desirable to abolish the term "Weil's disease" entirely. For cases of that type, in which no specific spirochaete or other infection are found, it would be far better to use the term "haemorrhagic infective jaundice."

Kartulis described¹⁸ a form of haemorrhagic infective jaundice which he studied carefully in Egypt. It has been called by various writers Mediterranean yellow fever, Weil's disease, spirochaetosis icterohaemorrhagica, and by other names. Such a method of nomenclature is, to

say the least of it, most unscientific. Until the cause of a particular type of disease has been conclusively proved, some general term such as "infective haemorrhagic jaundice" should be given it.

JAUNDICE IN ANAEMIA.

In chlorosis jaundice is almost invariably absent.

In pernicious anaemia a waxy, lemon yellow tint of the skin is common, but a definite yellow tint affecting both skin and conjunctivae is rare. In a series of 1,200 cases described by Dr. R. C. Cabot,¹⁹ in only 12 was the yellow tint so distinctive that the term jaundice could be applied. Marked jaundice scarcely ever occurs in this disease.

In Banti's disease, or splenic anaemia, jaundice is a rare symptom. If the splenomegaly is accompanied by progressive cirrhosis of the liver, jaundice, usually slight, is present.

ACHOLURIC JAUNDICE.

The congenital type of acholuric jaundice was first described by Minkowski in 1900, and since then numerous cases have been recorded. Its characteristic features are:

1. A family history of the disease.
2. Chronic splenomegaly.
3. Maintenance of fair health for a long period.
4. Chronic slight jaundice.
5. Presence of urobilin but absence of bile pigment in the urine.
6. Increased tendency to haemolysis of the red blood corpuscles.
7. Bile pigment in the blood serum.

I have recently examined, at St. Mary's Hospital, a very typical case of this disease which is under the care of Dr. F. S. Langmead, and it is by his kind permission that I quote the notes of the case.

CASE.

H. S., a man aged 42, was sent to hospital with a very accurate and detailed medical history by Dr. R. Craik.

The patient came into medical hands because he had been called up for active service in October, 1917; though his spirit was willing he felt his strength to be weak, and he wisely sought medical advice. He complained of breathlessness on exertion and inability to do heavy work, though his health had been fairly good and he had for some time done light work. At this time he was anaemic; the heart was somewhat dilated, with a haemic systolic bruit at the apex. The spleen was enlarged, but definite jaundice was not present. There was a history of previous "yellowness," especially following cold or exertion. In 1918 slight jaundice was observed on several occasions, but its depth varied from time to time.

When examined there was definite slight jaundice affecting both the skin and conjunctivae, pallor, marked splenic and some hepatic enlargement, and dilated heart, with a haemic systolic bruit at the apex region. There was no history of syphilis or alcoholic indulgence. The family history, however, was striking. Of his four children, two girls, aged 12 and 10 respectively, were jaundiced, one girl aged 5 was healthy, a boy had died "delicate," aged 3. H. S. had two sisters who died at the ages of 18 and 8 respectively of jaundice and dropsy, another sister died at 29 from "heart disease," a fourth sister died at the age of six months, and his only brother died at birth. The patient's mother and grandmother both suffered from jaundice.

Blood examination at St. Mary's Hospital:

Red blood corpuscles ...	... 2,600,000 per c.mm.
Haemoglobin ...	... 42 per cent.
Colour index ...	... 0.8 per cent.

Haemolysis of red blood corpuscles commenced in 0.5 per cent. salt solution, as compared with 0.4 per cent. for normal red cells. The leucocytes numbered 14,000 per c.mm.; there was nothing noteworthy as regards their variety. The urine contained a large excess of urobilin, but no bile pigments.

In this form of jaundice the icterus is not always present at birth, but may develop in childhood.

Cases with no family history have been described by Osler, Eason, Parkes Weber, Rowland Hill, and others.²⁰ The jaundice and other symptoms have the same characters as the congenital form.

Hereditary icterus occurring at birth has been studied by Dr. John Thomson,²¹ who has given classical examples of its hereditary nature. He attributes the disease to a congenital narrowing of the bile duct, coupled with an inflammatory condition set up by the altered bile. The congenital acholuric jaundice already described comes under this head.

ICTERUS NEONATORUM.

Jaundice in the newborn may be physiological, a fairly common mild form which soon passes away, or a severe type due to (a) congenital absence of the common bile duct; (b) congenital syphilitic hepatitis; (c) an infective

form set up by septic infection from the umbilicus, or more commonly by an infection of intestinal origin.

In this, unlike other forms of jaundice, the central nervous system often shows bile staining.

ACUTE YELLOW ATROPHY OF THE LIVER.

Acute yellow atrophy, described in the textbooks as a separate disease, is a condition of common occurrence after many chemical poisons and many infective processes. Its not infrequent occurrence in pregnancy, due no doubt to the production of autogenous poisons, is of special interest. It is a morbid anatomical condition of the liver due to some toxic cause, and with increased knowledge will cease to be regarded as a separate entity.

The morbid anatomical condition of the liver known as "acute yellow atrophy" causes loss of hepatic function, and this gives rise to the "symptom complex" known as "icterus gravis." It is in this sense that I have used the term "icterus gravis" throughout these lectures, in the course of which it has been amply demonstrated that the loss of function of the liver, symptomatically expressed by "icterus gravis," may result not only from a condition associated with shrinkage ("acute yellow atrophy") but also, as in delayed chloroform poisoning, from an extensive and rapid degenerative change of the liver cells followed by loss of function, no diminution in size or "atrophy" of the organ occurring.

CONCLUSION.

The above review of the subject of jaundice emphasizes the paramount importance of observation and experiment in determining the cause of disease and gaining exact knowledge. Down to 1881 knowledge had only enlarged upon that of Hippocrates as the result of the observations through *post-mortem* examination in fatal cases; this could go so far, but no further. In 1881 came the great advance due to animal experiments, of which those on dogs were of essential importance. Stadelmann, and in this country Hunter, by these experiments advanced our knowledge enormously. Since then progress has been steady and has been very great during the period of the war; every step has been the result of observation and experiment, and without the bacteriological, chemical, and physiological investigations in the laboratory we should have made little, if any, advance.

The history of jaundice is an object lesson showing the grounds on which scientific medicine should be based in the future.

In the study of disease clinical observation is of first importance, but it can carry us only a certain distance towards the goal of full knowledge. Clinical observation by the physician must go hand in hand with scientific experiment by the experimental worker if progress is to be sure and rapid. Neither alone can achieve the result. The physician and the scientific worker in the laboratory should be familiar each with the other's work and aspirations, and should ever lend a guiding hand to one another. The medicine of the future will attain that perfect advancement and full knowledge which all desire by the association of the physician and the scientific worker, not only in the laboratory, but also at the bedside.

ACKNOWLEDGEMENTS.

For very valuable help in the work on which these lectures are based I am especially indebted to Dr. B. H. Spilsbury, Dr. T. M. Legge, and to Mr. J. Webster, F.I.C., for their great assistance in the investigations relating to toxic jaundice.

For the work done during my period of military service I am very grateful for the help and encouragement always afforded me by Major-General Sir Francis Treherne, K.C.M.G., D.M.S. of the Mesopotamian Expeditionary Force (1916-1917), and to Major-General A. P. Blenkinsop, C.B., C.M.G., D.M.S. of the Mesopotamian Expeditionary Force (1917-1919). I am specially indebted to General Blenkinsop for the statistical figures quoted relating to epidemic jaundice. I desire especially to thank for very valuable help Lieut.-Colonel J. C. G. Ledingham, C.M.G., R.A.M.C., Lieut.-Colonel J. D. Graham, C.I.E., I.M.S., Major F. P. Mackie, C.I.E., I.M.S., Major R. S. Archibald, R.A.M.C., Major T. H. Gloster, I.M.S., Major Dunbar Walker, R.A.M.C., Captain M. A. Nicholson, I.M.S., Captain R. A. Woodhouse, R.A.M.C., and Captain Jarvis, R.A.M.C.

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¹⁹ R. C. Cabot: *A System of Medicine* (Osler and Macrae), vol. iv, p. 612.

²⁰ Osler: *The Principles and Practice of Medicine*. Eason: Acquired Achromic Jaundice, *Edinburgh Med. Journ.*, 1918. Parkes Weber: Royal Society of Medicine, February, 1917. Rowland Hill: *Acquired Achromic Jaundice*.

²¹ Dr. John Thomson: *System of Medicine* (Allbutt and Rolleston), vol. iv, Part I., p. 99.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACRIFLAVINE IN THE TREATMENT OF GONORRHOEA.

THE recent paper by Davies and Harrell,¹ of the Urological Institute, Johns Hopkins Hospital, an abstract of which appears in the *BRITISH MEDICAL JOURNAL* of March 22nd, 1919, is further evidence, if any be needed, of the discordant views of different observers. The writers point out that acriflavine is highly diffusible, and that it penetrates the mucosae of the urethra and bladder, that it is an antiseptic of high power, and inhibits the development of the gonococcus in dilutions of 1 in 300,000. There is no doubt that in the laboratory these results can be, and have been, obtained. But I am certain few who have had any large experience in the treatment of gonorrhoea will agree with the writers regarding its action on the living subject. They state the most satisfactory concentration is found to be 1 in 1,000; that the smarting is almost negligible, and that organisms disappear from the urethra after two or three injections. I have used this preparation, selecting 23 cases of ordinary uncomplicated gonorrhoea, carrying out the exact régime laid down by the writers. Of these 23 cases, 6, or 26 per cent., showed that at the end of three weeks Gram-negative diplococci, morphologically indistinguishable from gonococci, and purulent beads, were present within twenty-four hours after stopping the injection. Of the remaining 17, 13, or 76 per cent., showed pus cells in their smears, and their anterior washes, when centrifugalized, had a purulent deposit. The remaining 4 showed mucus and epithelium. Far from causing only slight smarting at the strength recorded, the patients treated complained at the end of ten days of severe smarting and dysuria, which has never been a symptom in any cases treated with ordinary solutions of protargol. I have found that in cases of submucous infiltrations or in soft strictures associated with gonorrhoea the remedy is apt to produce retention of urine. The fact of the urine remaining yellow for hours and the leucocytes being well stained is of little clinical significance. The remedy, I believe, has had an extensive trial at Rochester Row under the very careful observation of Colonel Harrison, and his views on the treatment of gonorrhoea have been stated before the Royal Society of Medicine, but I doubt if he even referred to this remedy.

JOHN ARMSTRONG,
Captain R.A.M.C.

London, W.

HYPERPYREXIAL HEATSTROKE.

THE article by Mr. K. G. Hearne on hyperpyrexial heatstroke, in the *JOURNAL* of April 26th, leads me to record a case which occurred in the hospital to which I was attached in Mesopotamia. It supports the view that the condition is due to cessation of sweating, as in the case in question the condition was accidentally caused by a hypodermic injection of atropine.

It was the custom on the surgical side to give every patient before operation a hypodermic injection of morphine gr. $\frac{1}{4}$ and atropine sulphate gr. $\frac{1}{10}$ unless specially contra-indicated. The injection was given by the sister in charge of the ward. In 1917 the intense heat of summer commenced suddenly, and owing to a misunderstanding the injection of atropine was not countermanded. The anaesthetist noticed that one of the first cases to be operated upon after the heat wave broke was unduly unconscious, and that the patient's skin felt hot and he was not sweating. The thermometer showed the temperature to be 108° F.; the operation was suspended and an ice pack brought the temperature down within the limits of safety. On succeeding days the temperature showed no tendency to rise, thus differing from ordinary cases of heatstroke. This was the only case which occurred in the theatre; as it was built of brick the temperature in it was usually 12° to 15° lower than that in the wards, which were constructed of mud.

I entirely agree with Mr. K. G. Hearne that hyperpyrexial heatstroke is preventable among hospital patients, but in my experience the "incubation period" before the onset of delirium, unconsciousness, etc., should be allowed a wider margin than from one to forty-eight hours. I have seen sweating men while accomplishing a necessarily forced march during the heat of the day struck down with hyperpyrexia of 110° and accompanying symptoms within a few minutes. Doubtless the combination of external heat and heat derived internally from muscular exertion caused the abruptness of onset in these cases. On the other hand, one case gave a clear history of premonitory symptoms—sense of oppression, marked restlessness, frequency of micturition, etc.—extending over a period of four days.

Devonport.

R. J. McNEILL LOVE, M.B., B.S.Lond.

RUPTURE OF BRANCH OF THE CORONARY ARTERY.

ON April 18th Mrs. E. H., aged 80, was admitted to the infirmary with a diagnosis of arterio-sclerosis and bronchopneumonia. The heart was rapid but regular, and there was no bruit. There was a history of a fall off a chair a few days before admission, and there were some bruises and abrasions on the back. A history of chronic bronchitis and occasional attacks of giddiness was elicited.

About an hour and a half after admission I was urgently sent for. I found the patient suffering from syncope; the pulse at the wrist could not be felt, though the heart sounds were faintly audible. She rallied a little under the influence of cardiac stimulants, but died in about three hours afterwards. She never complained of any pain in the chest.

As there was a distinct history of a fall, the matter was reported to the coroner, and I made a *post-mortem* examination by his order. There were evidences of general arterio-sclerosis; there was oedema of the cortex and the whole of the brain, and its blood vessels were very anaemic. The kidneys showed signs of an early stage of arterio-sclerosis; other abdominal viscera were normal. There was evidence of chronic bronchitis and emphysema with commencing bronchopneumonia, and old adhesions between the right lung and the pleura. The pericardial sac contained a large clot of blood weighing over 3 oz.; its source was found in a rupture of a branch of the right coronary artery. The muscles of the heart, though flabby and exhibiting fatty degeneration, were quite intact. The aortic valves showed a certain amount of thickening. The aorta and the coronary vessels showed atheromatous patches. Possibly a fit of coughing accounts for the sudden rupture of the degenerated coronary vessel.

In searching the literature on this subject, the only reference that I have come across is by Sir Clifford Allbutt in his book on diseases of the arteries, page 368, where he says: "... as I have twice observed, haemorrhage into the pericardium from a ruptured coronary was quite painless." This being so, I have no hesitation in recording this very rare occurrence.

D. N. KALYANVALA, M.R.C.S.Eng.,
Assistant Medical Superintendent, Chelsea Infirmary, London.

THE General Association of French Medical Practitioners, at its annual meeting on May 4th, unanimously elected Dr. Darras president for a term of six years.

Reviews.

PENSIONS FOR EYE AND EAR INJURIES.

In our review of the book, *Pensions and the Principles of their Evaluation*,¹ by Drs. L. J. LLEWELLYN and BASSETT JONES (BRITISH MEDICAL JOURNAL, April 5th, 1919, p. 413), promise was made to deal later with the section on the eyes and ears. This promise we now attempt to fulfil. The writer of the chapters on the evaluation of injuries to the eye is Mr. W. M. BEAUMONT of Bath, who has shown his mastery of the subject in his book on injuries to the eye in industrial occupations. He cites the award of the Romans to Horatius of the means by which he could earn his own living (in his case a grant of land) as the model method of treating those blinded in the war, and this, he states, has been attained by the re-education of the disabled, for if we put sight in one scale we cannot fill the other with sufficient money to make a balance.

Mr. Beaumont appears to hold that the blinded man during the period of his re-education or his apprenticeship should receive a temporary pension, and that when he has arrived at a state of limited perfection in his new work the time has come to determine his loss and to fix a permanent pension. This, if we understand its practice aright, is not the view of the Ministry of Pensions, a man who has lost the sight of both eyes being entitled to the maximum pension, irrespective of what, through re-education, he may eventually be able to earn. Grants for the loss of an eye and for the total loss of sight are in British practice not logical. The Royal Warrant awards for the loss of an arm and an eye, or a leg and an eye, 100 per cent., for total loss of sight 100 per cent., for loss of one eye 50 per cent. The list fails to distinguish between the loss of an eye and the loss of the sense of sight. To estimate the loss of one eye at 50 per cent. and the loss of two eyes at 100 per cent. is manifestly wrong. A man who has lost one eye may return to his work, and though handicapped to an extent which may be trivial in some occupations but serious in others, yet retains the sense of sight and the powers which reside in it. The man who has lost both eyes, and thereby the sense of sight altogether, is incomparably the greater loser. Mr. Beaumont thinks that both assessments are wrong; for one eye it is too high and for both eyes too low. This view is borne out by the practice of foreign countries, where the loss of one eye averages about 25 per cent., and for both eyes up to 125 per cent. Further, the warrant takes no account of the case of a man whose loss of one eye has left him with the other defective from pre-war conditions. The real failure of the warrant is in attaching importance rather to anatomy than to function.

The experience of pensions boards demonstrates the necessity of thorough and accurate registration of the sight of recruits by capable examiners. The man says: "My sight was good when I enlisted or I should never have been enrolled"; yet examination of his eyes proves the existence of congenital malformations or old disease which must have been present years before military life began.

The main question Mr. Beaumont sets himself to answer is, What is the loss of function, and what is the value of that function from the wage-earning point of view? This leads to a consideration of the relation of physiological sight, as measured by the usual tests of visual acuity and field, and professional sight as judged by the known requirements of different professions and trades. Mr. Beaumont gives a very clear statement of the measures taken to ascertain these relations, and the effects of their reduction as worked out by Groenauw, Snellen, Menacho, and others. Charts are provided by which the loss of value may be ascertained from a given factor. But he adds a caution against too much reliance on this tabular form of dealing with a case: the evaluation of sight requires the careful consideration of the personal equation of the individual with regard to general health and strength, congenital aptitude, mental faculties, and capacity for re-education. And finally, is the man young enough to recover to some

extent, to learn a new trade, or is he too old to succeed if he make the attempt?

After this discussion of the general problem there follows consideration of the effects of various injuries of the eye and its surrounding structures; loss of one eye; total loss of sight; partial loss of one eye; partial loss of sight of both eyes; total loss of sight of one eye and the partial loss of the other; field of vision; and traumatic psychoneuroses. Of the last section he writes:

Eye disease is notoriously depressing under any circumstances; how much more must it be when associated with the horrors of war. For wounded eyes under these adverse accompaniments, the occlusive bandage should be used as rarely as possible consistent with the due treatment of the case, for darkness fosters inertia, and the blindfolded soldier broods over the future, and so hinders functional restoration. Sympathetic visitors to the hospital ward unwittingly increase his introspection by pity. . . . The patient should be encouraged to forget himself, and if his eyes permit he should take outdoor exercise with cheerful companions. . . . Indoor mechanical apparatus, whether Swedish or otherwise, perpetuate the neurosis by suggestion. The sham bicycle and the artificial rowing machine should give place to the outdoor realities. Interest should be aroused by mild competition. In general it is better for the man to work the machine than for the machine the man. Unless these oculo-mental cases are taken in hand early, definitely, and thoroughly, with the help of an alienist if necessary, they are likely to become lifelong acquaintances of the Pensions Commissioners.

In a chapter on adaptation in injuries of the eyes the author describes the various remedial efforts followed in this and other countries, work for which St. Dunstan's Hostel has become famous in this country. He further considers the temperament of the man, as it is likely to advance or retard these efforts at adaptation. The shock of the loss, natural inertia, bad health, age, a remnant of vision, and "just enough money to live on"—all act as deterrents. Youth, good health, education in the past, character, and the necessity to think for a wife and family—these are powerful aids.

The last chapter of the work deals with the injuries of the ear. Very many men have suffered lesions of the ear, and the aggravation of aural disorders of old standing has been common. The lesions are discussed according to the grouping suggested by Bourgeois and Sourdille—the traumatic causes enumerated are wounds of the external ear; injuries to the tympanic membrane and its cavity; wounds in the auricular-mastoid region; war deafness due to labyrinthine concussion from direct violence and from explosions; lesions of the nerve tracts, and psychogenic causes. Non-traumatic causes include otitis, both externa and media, acute and chronic.

In considering what the Pensions Ministry calls "attributability" in the assessment of loss in deafness great stress is laid upon the necessity for accurate inquiry into the case, both as to previous history, conditions of injury, and present state. A man's pre-war employment may indicate that he must have had good hearing, or on the other hand his employment may have been one that commonly involves some loss of hearing. Much may be gleaned from the manner in which the patient narrates the onset or cause of his symptoms. Alike in the soldier and industrial worker it will be suggestive of simulation if he says it came on suddenly and yet vouchsafes no history of injury, syphilis, or cranial disease. Apart from these, deafness in general ensues gradually. And hardness of hearing is much more common than total deafness. Particularity in the analysis of the alleged casualty is enjoined, and the testing of the answers by their congruity or incongruity with the history, character, and course of the accident and disorder. Finally, the diagnosis of old injuries and their distinction from recent or superadded injuries is discussed. In assessing the loss of function caused by deafness the aurist is in a more difficult position than the oculist. Deafness cannot be accurately estimated by any numerical formula. Methods of measurement have been suggested according to the distance at which the human voice can be heard. In Schwartze's method the distance at which the ordinary conversation voice is perceptible is estimated: below 1 metre, between 1 and 3 metres, between 5 and 10 metres, and between 10 and 20 metres. The general evidence goes to show how great is the risk of an increase of pre-war deafness by war injury. Canuyt states, on the evidence of 8,000 cases up to April, 1916, that in the majority of soldiers who came back from the front with material

¹ *Pensions and the Principles of their Evaluation*. By L. J. Llewellyn and A. Bassett Jones. With a Section on Pensions in Relation to the Eye, by W. M. Beaumont of Bath. London: W. Heinemann (Medical Books), Ltd. 1919. (Roy. 8vo, pp. xxvii+702. 30s. net.)

lesions of the hearing apparatus the ear was not sound before the war. The chapter concludes with schedules of assessment of loss, and with that adduced by Major Dundas Grant, the President of the Special Aural Board under the Ministry of Pensions.

We have in the earlier review of the larger and general section of this work commented on its excellence and practical value, and this statement holds true for the section written by Mr. Beaumont. His exposition of the subject is clear, terse, and yet sufficient and exact. He is to be congratulated on the result of his labours and on the great help he has afforded those of his colleagues who are engaged in the same sphere of work.

INSURANCE LAW AND ADMINISTRATION.

It is a somewhat bold venture to attempt under present conditions to write a commentary on the National Insurance system, especially as it is practically certain that at no distant future radical changes will be made in the law and its administration. The book by Sir E. BROWNE and Sir K. WOOD entitled, *The Law of National Health Insurance*,² shows signs throughout that it has been produced under difficulties, and the authors do well to acknowledge in the preface the limitations necessitated by existing conditions.

The plan adopted in the book is to print in heavy black type the various Insurance Acts from 1911 to 1918, and to intersperse in ordinary type comments and annotations, with references to Regulations and Orders. Taking, for example, the principal Act of 1911 as a basis, the modifications of its provisions by subsequent Acts are for the most part brought together under its appropriate sections, some being quoted in full and others merely summarized, so that it is possible almost at a glance to see the present state of the law on any point, and in this respect the book will prove of assistance in insurance work.

After dealing with the various Insurance Acts in this way, a number of other Acts more or less connected with their working are quoted, and the appendices contain various regulations, a list of all the regulations and orders now in force, and a very valuable article on Compensation and Damages.

Perhaps the most outstanding feature in the practical working of National Insurance is the fact that the Acts themselves are merely a skeleton structure while the regulations made under them are the really vital parts. To such an extent does this apply to medical and sanatorium benefits that a most careful study of the Acts alone would give only the vaguest idea of the practical working of these benefits; the same applies to the working of Insurance Committees and approved societies. The authors, however, seem to have thought that a commentary on the skeleton should suffice with bare references elsewhere for information about the vital working details. We can, of course, appreciate the difficulties that confronted them in any attempt to keep pace with the perpetual flow of fresh regulations and orders, but whatever the difficulties may be, there can be no denying the fact that the omission of the full text of the medical benefit regulations, and the consolidated regulations affecting Insurance Committees and approved societies is a serious defect. To Local Medical and Panel Committees and panel practitioners generally a commentary on the regulations that affect them, or at any rate the bare inclusion of the regulations brought up to date, would be equally if not more useful than a mere commentary on the Acts with references only to the regulations. Considering that the book is comparatively small and the price 31s. 6d. these omissions can hardly be excused.

The authors have, however, succeeded in laying the foundation of a most valuable work on the National Insurance, and the limitations which they have imposed on themselves may reasonably be attributed to the "difficulties inseparable from the times."

SURGERY OF TROPICAL DISEASE.

The literature of surgery in tropical diseases is not large, so that a book by Dr. JOHN R. McDILL entitled, *Tropical*

Surgery and Diseases of the Far East,³ should meet a want. It is perhaps a little unfortunate that the surgical text is mixed up with medical diseases and that a large part of the work (Chapter XI) is devoted to what is termed "Answers to a questionnaire of fifty-three inquiries sent to countries in and about the tropic zone." The author laments that to the 2,000 copies of his questionnaire he sent out he only received 4 per cent. of responses, and he writes:

The most of the answers, however, show that the average of medical men and women in and near the equatorial belt are no better and no worse than their brethren in other parts of the world; that about 90 per cent. of practitioners of medicine everywhere, including those in cities, do not record their observations, do not examine their patients in any but the most superficial way, have no proper working library of books and current literature, or do not make their observations and their reading available to themselves or to the world by a simple system of indexing.

Why, then, does the author give seventy-two pages to publishing these details? The purely surgical parts of the book, such as that on liver abscess, are good, and it would have been better to have kept to surgery alone. The part on dysentery seems little more than a compilation from Walker's work in the Philippines, and many of the articles on other medical subjects seem to be compilations from the work of others. The statement that Fedtschenko's experiments on the guinea-worm in the cyclops were confirmed by Manson in Turkestan is a curious mistake. There are some good pictures, especially some illustrations of the surgery of liver abscess. Perhaps the most interesting part of the book is the appendix, where will be found chapters on the surgery of the spleen at the Mayo clinic. A perusal of this will repay anyone, but the work as a whole is disappointing.

NOTES ON BOOKS.

DR. HUGH WINGFIELD has written a clear and helpful little treatise on *Alcoholism*,⁴ in which the various forms of excessive drinking, their nature, causes, and treatment, are set out within the space of seventy-three pages. The author acknowledges his debt to Dr. Hare's work on alcoholism, and generally adopts, with certain modifications, the method followed at the Norwood Sanatorium, and originally advocated by Dr. McBride. The first principle in the treatment not only of dipsomania and pseudo-dipsomania, but of chronic alcoholism as well, is, of course, total abstinence. It is idle for the drunkard to hope that he can ever drink habitually in moderation; Dr. Wingfield says he has never known one to succeed. One patient—a doctor—exclaimed to him: "Why was I never told this before? Why was I never taught it as a student?" Whereupon this patient made up his mind never to touch alcohol again, and although up till then an extremely severe case of pseudo-dipsomania he has now for five years kept his resolve. This incident, which does indeed cast a grave reflection on the teaching of our medical schools, led to the writing of the present book, "in the hope that sufferers might thereby be enabled to understand their condition, and so perchance be able to save themselves." The result is, in our opinion, a very sensible, temperate, and sympathetic handbook for those who have no time to study more than the rudiments of this most important subject.

The fifth edition of *Pharmaceutical and Medical Chemistry*,⁵ by SADTLER and COBLENTZ, is a large and well written book containing an excellent account of inorganic and organic chemistry, together with a less valuable summary of elementary physics. It is designed to meet the needs of the student of pharmacy and medicine, as well as of medical men seeking for information on matters of chemistry. It contains a great deal of chemistry, and although described as a "pharmaceutical textbook" written in connexion with the ninth revision of the U.S. Pharmacopoeia, does not unduly obtrude its pharmacopoeial aspect upon the reader. Several useful tables are included at the end of the volume.

²*Tropical Surgery and Diseases of the Far East, Including Answers to a Questionnaire.* By John McDill, M.D., F.A.C.S., Major, Medical Reserve Corps, U.S. Army. London: Henry Kimpton; St. Louis: C. V. Mosby Co. 1918. (Med. 8vo, pp. 302; 69 figures, 24s. net.)

³*The Forms of Alcoholism and Their Treatment.* By H. Wingfield, M.A., M.D., B.C. Cantab. London: H. Frowde, and Hodder and Stoughton. 1919. (Cr. 8vo, pp. 73.)

⁴*A Textbook of Chemistry.* By Samuel P. Sadler, Ph.D., LL.D., Virgil Coblenz, Ph.D., F.C.S., and Jeanot Hoshmann, Ph.D. Fifth edition, revised and rewritten. Philadelphia and London: J. B. Lippincott Co. 1918. (Med. 8vo, pp. xiii + 765; 143 figures. 21s. net.)

⁵*The Law of National Health Insurance. The National Insurance (Health) Acts, 1911 to 1918.* By Sir Edmond Browne and Sir Kingsley Wood, M.P. London: The Insurance Publishing Co., Ltd. 1919. (Demy 8vo, pp. 415. £1 11s. 6d.)

The war has in these last three years produced a great efflorescence of verse; time only will certainly tell of how many writers it may be truly said that the Muse has touched their lips with celestial fire. Dr. CAMPBELL MACFIE is not one of her new wooers, but he has felt the impulse of the times and has produced an ode, *War*,⁶ which is the best thing he has done. It opens with a vision of the beginnings of the world, of the birth of the moon, and of later stages of the earth's story, written in what he will perhaps allow us to call plangent words. He passes, by a not unjust analogy, to the "noisy forges" that "beat the tune of death," next to the trenches "in desolate obscene Serbonian bogs," and then to an epilogue glorifying the spirit. The poem is a piece of vigorous sustained thought, brilliantly written. Dr. Macfie has also published a collection of his occasional verse in a volume entitled *Odes and other Poems*,⁷ containing many graceful things. If the author wants our advice—but probably he does not—it would be to avoid weak adjectives at the end of a line, and to eschew bizarre words. He has too strong a command of the language to succumb to this passing fashion.

We have received from the well known Paris firm of publishers, Masson et Cie., a little work entitled *Le Français*,⁸ by Monsieur P. DESSAGNES, professor of English at the Lycée Louis-le-Grand. It is an elementary French course intended for English and American children, and is based on the principles of what is called the "direct" method used by the teachers of modern languages in the secondary schools of the University of France. The teacher takes as a starting point the simplest terms—that is, the names of objects which can be shown, or represented in drawings. On these are built up rudimentary sentences whose meaning is self-evident, and these in turn are used to explain new phrases. By a slow and carefully graduated process the learner is led to the comprehension of idiomatic sentences. Moving always forward from the simple to the complex, each lesson amplifies that which went before and paves the way to that which follows, without need of a dictionary. This, the first volume of the course, seems to us admirable. The little sketches are designed to arouse the interest of children, for it is recognized that the part played by the pupil should be as active as possible and that the elements of the language should be presented in their most concrete form. If the book is used in the manner described in the preface it should lay the foundations for a thorough understanding of the French language. Those who have painful recollections of the dull grammars and exercise books of a former generation will wish that this "French without Tears" had existed in their day.

⁶ *War*. By Ronald Campbell Macfie, M.D., LL.D. London: John Murray. 1918. (Cr. 8vo, pp. 72. 3s. 6d. net.)

⁷ *Odes and other Poems*. By Ronald Campbell Macfie. London: John Murray. 1919. (Post 8vo, pp. viii + 136. 5s. net.)

⁸ *Le Français. Enseigné par la méthode intuitive et directe*. Par P. Dessagnes. Agrégé de l'Université. Paris: Masson et Cie. 1919. (Cr. 8vo, pp. 304; illustrated. Fr. 5.)

MEDICAL AND SURGICAL APPLIANCES.

Triplex Glass.

THE use of "triplex" glass for the windows and screens of automobiles has become so general that the value of this glass is well recognized. During the war it was proved to be of the greatest service for goggles for airmen. For those who are not familiar with its construction we may state that this glass is made up of three layers of material, two of glass and a middle layer of xylonite. The three are firmly pressed together, so that they are practically indissoluble. The middle layer of flexible material makes very little difference to the transparency of the glass, but alters very materially its reaction to violence. A blow that would shatter an ordinary sheet of glass and endanger all persons who were near has quite a different effect on the triplex glass. This may be fissured and seamed by hundreds of fine lines; but the middle layer of flexible material holds all together securely, so that not a particle of the glass leaves its place in the fissured sheet. The stopping effects of the glass upon rifle bullets must be seen to be believed. The glass can be used for the manufacture of ordinary spectacle lenses. It is of great value for this purpose to short-sighted persons who are exposed to the risk of breakage of glasses—for example, in hunting, shooting, and motoring. The lenses can be ground to any combination of spheres and cylinders, just as the usual glass lens, and can be fitted into rims or mounted into rimless spectacles or clips. It is necessary

to coat the edges of the lenses with an invisible varnish to secure the glass from the penetration of damp, but otherwise no special method of working is necessary. The lenses are a little thicker than the usual glass lens, and they have a faintly amber tint. This is not objectionable; in fact, it would be an advantage where glasses are worn to prevent glare effects, but the tint would reduce visibility slightly at twilight. We have specimens of these lenses worked in various denominations of minus spheres; they were prepared by Messrs. Melsom Wingate of London. The lenses are quite accurate, and although very thin the blow of a steel hammer only produced numerous fissures in the glass, and did not detach one fragment. Wearers of monocles would materially reduce their consumption of lenses by the use of this glass. The glass is made by the Triplex Safety Glass Co., 1, Albemarle Street, London, W.1.

Gland Dissector.

Mr. JAMES ADAMS (Eastbourne) has designed the small instrument shown in the drawing to serve as a dissector for operations on glands in regions where a knife cannot



safely be used. Either end may be used according as a straight or curved instrument is required. Mr. Adams says he has found it most useful. It is made by Messrs. Arnold and Sons, Giltspur Street, E.C.

A FERROUS IRON WATER.

At Trefriw Wells, a short distance from the village of that name on the western side of the Vale of Conway, there are iron water springs of unusual character, inasmuch as the salt is in the ferrous state. When we visited the place shortly before the beginning of the war we were informed that the waters have a high local reputation in anaemia, but that the dose must be small, as indiscriminate use is apt to cause gastro-intestinal irritation. The waters were, it is said, used by the Romans. There are two springs which issued from two caves side by side, and originally the water was dipped up from one or other spring. The waters are now brought down to a small pump room by gravitation in glass pipes. When delivered at the counter both are quite clear. They are distributed in liqueur glasses to the patients at the wells, and the water is also bottled for sale at a distance in small phials.

An analysis made for us in June, 1914, showed in No. 1 water iron in the ferrous state equivalent to 2.21 grains of crystalline ferrous sulphate per ounce, the total iron in this being 2.62 grains. In No. 2 was found ferrous iron equivalent to 1.42 grains of crystalline ferrous sulphate per ounce, the total in this specimen being equivalent to 2.45 grains. The small proportion of iron not ferrous is presumably in the ferric state. The dose recommended is half an ounce twice a day for the first week, then three times a day for another week, and in the third and subsequent weeks one ounce twice daily; but further investigation appears to be desirable. The particular merit claimed for the well known iron pill commonly called Bland's pill is that the iron it contains is in the ferrous state. Five grains of the pill contain 1 grain of ferrous carbonate. The amount of ferrous carbonate equivalent to the ferrous iron in one ounce of the No. 1 Trefriw water is 0.19 grain; in No. 2 it is 0.58 grain—that is, one ounce of No. 1 water is almost equivalent to one Bland's pill, and one ounce of No. 2 water to nearly two-thirds of a Bland's pill. The water when fresh is bright, clear, slightly acid, and not unpleasant to take. The pump room is small but well appointed; there is a comfortable hotel not far off and a few lodging houses. The surrounding country is beautiful and affords endless varieties of excursions on foot or by motor. Trefriw is easily reached by a branch line from Llandudno Junction (London and North-Western main line) in half an hour.

The special character of these waters seems to make them worthy of the attention of the profession.

A CAMPAIGN for the stamping out of venereal and other diseases has been started by the Government of Jamaica.

THE PREPARATION OF FINELY DIVIDED CALOMEL.

THE calomel of the *British Pharmacopoeia* is obtained by sublimation; it is obtained also by precipitation, but in either case is a rather dense heavy powder mixed with impurities. Duret¹ has endeavoured to prepare a calomel which would be light, finely divided, and easily dissociable in contact with living tissues. As such a substance is likely to be useful in the prophylaxis and treatment of venereal diseases the details of the method of preparation may be given.

Two solutions are freshly prepared, the one consisting of sodium bicarbonate 6 grams, pure glucose 10 grams, and distilled water 80 c.cm., and the other of magnesium chloride (crystals) 7.5 grams in 20 c.cm. of distilled water. These are mixed and the mixture is added in a flask to a third solution, consisting of corrosive sublimate 11.5 grams, pure hydrochloric acid 10 drops, and distilled water 100 c.cm. The whole mixture is shaken well and allowed to stand. There is an abundant evolution of carbonic acid, and simultaneously very finely divided calomel is precipitated. When the reaction slackens the flask is heated on a water bath with continual shaking, until practically no more gas comes off. The precipitate, after filtering and washing with distilled water, gives about 10 grams of calomel. In this reaction the sodium bicarbonate in the presence of slight excess of magnesium chloride is converted into sodium chloride and magnesium bicarbonate, and the latter, in contact with the hydrochloric acid from the dissociation of the sublimate, gives up its carbonic acid and becomes magnesium chloride, whilst the mercury bichloride is quantitatively transformed into the protochloride. It is necessary to observe accurately the proportions given, for an excess of magnesium bicarbonate would give a precipitate of magnesium carbonate, or an insufficiency of magnesium bicarbonate would leave some of the sublimate undecomposed. The calomel obtained by this method is much finer and lighter than ordinary calomel—it occupies about three times the volume of the latter—and its therapeutic properties would seem to be enhanced. It has been used extensively by Duret in the preparation of prophylactic ointment and also for injections in syphilis.

Formula for a Prophylactic Ointment.

The following is the formula for prophylactic ointment, which is stated to bring into contact with the living tissues extremely finely divided mercury in the nascent state:

Calomel (prepared as above) ...	10 grams
Magnesium chloride (cryst.) ...	10 "
Sodium bicarbonate ...	7 "
Thymol... ..	0.15 "
Camphor	0.35 "
Glycerinum amyli ...	15 "
Oleum arachi	15 "
Anhydrous lanoline ...	20 "
Distilled water... ..	25 "

The magnesium chloride and sodium bicarbonate are triturated in a mortar with the quantity of water indicated, and then the calomel and the glycerin of starch are added. With gentle heat the lanoline and 10 grams of the peanut oil are melted together, and to this are added the thymol and camphor dissolved in the remaining 5 grams of the peanut oil. While still liquid this is added to the first mixture, and the whole beaten up to a homogeneous mixture. The magnesium carbonate which is formed in this reaction will be sufficient to neutralize all the hydrochloric acid that will result from the dissociation of the calomel when it is in actual use. The camphor and thymol, robbed of any irritative properties by solution in oil, are added as adjuvant antiseptics and as stimulators of tissue regeneration. It is claimed that this preparation, which is of a creamy consistence, is more suitable for application to mucous surfaces than other preparations, and that it allows of more thorough absorption of mercury into the tissues.

Calomel for Injection.

Calomel injections, though often causing considerable pain, are perhaps the best means of administering mercury in the treatment of syphilis. The pain is probably due to the hydrochloric acid set free by the dissociation of the calomel. Duret concludes that by adding a substance capable of saturating this acid at the time of its liberation the pain will be suppressed, and that by using a calomel in itself very finely divided, the mercury resulting will be

more rapidly absorbed. He gives two formulæ for the preparation of this calomel injection; we quote the second, as it is said to produce scarcely any discomfort.

Sublimate	6.775 grams
Pure HCl	5 drops
Glucose	5 grams
Sodium bicarbonate ...	8.65 "
Magnesium chloride ...	10.5 "
Distilled water	25 c.cm.
Syrup of sugar	q.s. for 100 c.cm.

With this formula 1 c.cm. corresponds to 0.05 gram of mercury, or about 0.06 of calomel. The magnesium carbonate is formed in sufficient quantity to saturate the whole of the hydrochloric acid coming from the dissociation of the calomel produced.

ROYAL MEDICAL BENEVOLENT FUND.

At the meeting of the Committee on May 13th twenty-three cases were considered and £310 voted to twenty-one of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 45, of M.B.Glasg. who practised in Scotland and died in 1910. Was left without means, and endeavours to make a living by letting rooms. Has one son, aged 11. Owing to the high cost of living finds it difficult to manage. Voted £10 in two instalments.

Daughter, aged 68, of M.D.Lond. who died twenty-five years ago. Her mother, who was an annuitant of the Fund, has recently died. Applicant endeavours to make a living as a teacher of music, but, owing to the high cost of living, finds it impossible to meet expenses. Voted £18 in twelve instalments.

Widow, aged 61, of L.R.C.S. and P. Edin. who practised at Liverpool and died in 1894. Applicant has for some years acted as a mission worker, but, owing to ill health, has had to give it up, and is without means. Voted £15 in twelve instalments.

Widow, aged 39, of M.R.C.S.Eng. who died in 1917. Was left with five children, ages now 2 to 15; three are at school. Income £137 a year; rent and rates £44. A brother-in-law who allowed her £80 a year has recently died. Relieved once, £20. Voted £20.

Daughter, aged 49, of M.D.Dubl. who practised in the Isle of Man and died in 1882. Owing to war conditions does not receive full dividends from investments. Receives £40 from friends and £7 10s. from dividends. Is an invalid and unable to work. Relieved four times, £17. Voted £5.

Daughter, aged 64, of L.S.A.Lond. who died in 1874. Is unable to work owing to ill health. Income £25 from a friend and earns about £5 by occasional sewing. Relieved thirteen times, £130. Elected to an annuity of £20.

Daughter, aged 66, of M.R.C.S.Eng. who died when applicant was a child. Owing to ill health, the result of a street accident in 1916, she is unable to work, and has been living on the compensation she received and the grants from the Fund. Relieved five times, £34. Voted £12 in twelve instalments.

Widow, aged 64, of L.R.C.P. and S. Edin. who died in 1913. Was left very badly off; a son who used to help had to join the army; she receives 9s. 3d. a week separation allowance. Only other income some old book debts which during the past year have realized £26. Relieved twice, £22. Voted £12.

Daughter, aged 70, of M.R.C.S.Eng. who died in 1890. Applicant endeavours to make a living by letting rooms, but owing to the high cost of living and ill health finds it difficult to manage. Relieved three times, £34. Voted £12 in twelve instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.1.

THE American National Medical Association is a body consisting of 5,000 coloured doctors.

THE Elsie Inglis Unit of the Scottish Women's Hospitals, which was sent out to serve the Jugo-Slav Division of the Serbian army on the Macedonian front in February, 1918, and which took part in the Macedonian offensive of last autumn, was transferred to Sarajevo in Bosnia last December. The need for its services in that district having now ceased, it has been recalled. Before leaving for home all members of the hospital staff were presented with the Serbian Gold Medal for Meritorious Service. Owing to the demobilization of the unit the office of the London Committee of the Scottish Women's Hospitals at 66, Victoria Street, was closed on May 31st.

¹ *Annales de l'Inst. Pasteur*, March, 1919.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

As announced a few weeks ago, Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the members of the Association, and subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is prepared to receive subscriptions of one guinea or less.

The following is a further instalment of the list of subscribers; other subscriptions received this week will be acknowledged in an early issue.

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INCOME LIMIT FOR INSURED PERSONS.

DEPUTATION FROM THE BRITISH MEDICAL ASSOCIATION.

MAJOR ASTOR, M.P., as chairman of the Joint Committee for National Insurance, received at the Local Government Board on June 2nd a deputation from the Council of the British Medical Association on the subject of the foreshadowed bill to change from £160 to £250 the limit of remuneration affecting compulsory insurance of non-manual workers.

The deputation consisted of: Mr. E. B. Turner (Chairman of the Medico Political Committee); Dr. Haslip (Treasurer); Dr. H. B. Brackenbury, Dr. A. C. Farquharson, M.P., Major E. Rowland Fothergill, Dr. I. Johnson (Bury), Dr. J. Stevens (Edinburgh), with Dr. Alfred Cox, O.B.E., Medical Secretary, and Dr. Courtney Lord, Assistant Medical Secretary.

Dr. FARQUHARSON introduced the deputation and expressed the hope that, as a result of conference with Major Astor, a way might be found of relieving not unnatural apprehensions of many members of the medical profession, without prejudice to the substantial objects which the Government had in view in introducing the bill. Mr. E. B. TURNER stated that while the deputation represented the Council of the Association, of which body they were all members, and intended primarily to place before the Minister the views of the Council, they were free to express their individual views, which in some cases would go further in opposition to the proposed measure than did the Council. The Council recognized that there was a case for keeping in insurance persons of the class that Parliament originally intended to be insured, but the simple change of the income limit which was understood to be proposed might have the effect of bringing into National Insurance, and taking out of the sphere of private practice, a considerable number of persons who had hitherto had no difficulty in employing general practitioners to treat them as private patients. The Council, therefore, desired to press that whatever legislation was required should be so framed as not to have this effect. Dr. STEVENS and Dr. JOHNSON stated that meetings had been held of the doctors in their respective districts who objected to any alteration of the income limit as affecting any section of insured persons.

Major ASTOR having explained the precise nature of the proposals under consideration by the Government (as set out in the official statement printed below), which he believed had not been sufficiently understood, discussion turned chiefly on the question of the practicability of any provision which could restrict the effect of the proposed measure to those who were previously in insurance, keeping them from being excluded without introducing into insurance any who would not otherwise have been introduced. Eventually Major Astor stated that while he could not pledge the Government to put forward any provision of the kind, which so far as they had explored the subject appeared to be impracticable, they would be prepared to consider any practical amendment brought

forward by a private member for the purpose, and Dr. Farquharson undertook to consider the matter in conference with the British Medical Association with a view to the possibility of some such amendment being devised.

Proposed Legislation for Amendment of National Insurance Act in respect of Limit of Remuneration affecting Insurance of Non-manual Workers.

1. The Government have decided to introduce a bill in the House of Commons shortly after the Whitsuntide recess for the purpose of securing that the intention of the National Insurance Acts is not defeated in certain respects by incidental consequences of the rise in the cost of living due to the war.

2. Under those Acts persons engaged in *manual* employment come within National Insurance without any regard to amount of income or rate of remuneration; but persons who are engaged in *non-manual* employment are excluded from compulsory insurance (by the First Schedule to the Act of 1911) when their rate of remuneration is in excess of £160 per annum. As a result of the increased cost of living, employers have almost universally found it necessary to grant war bonuses to workers; with the result that in a large number of cases (it is believed between half a million and a million) non-manual workers whose pre-war remuneration was less than £160 per annum receive remuneration exceeding that rate, although the circumstances of their employment are wholly unchanged, and they have not been taken out of the economic status of the persons comprised in the Act of 1911. If an amendment is not made in the Acts, such workers must lapse from insurance and lose all benefits, unless they are entitled and can afford to become voluntary contributors; and even then they are deprived of medical benefit, they are under more onerous conditions as to cash benefits, they lose their employers' contributions, and must themselves pay their weekly contributions at an enhanced rate. In the great majority of cases this lapse from insurance will take place on June 30th, and would have occurred earlier but for the so-called "free year's insurance" provided under last year's Act.

3. It has been widely represented to the Commissioners in the strongest terms, by large bodies of employers, by trade unions, and by many important societies, that for such persons to be deprived of the benefit of their previous insurance, as an almost accidental consequence of these circumstances, would create serious hardship and would defeat the manifest intentions of Parliament. The inequity resulting to the particular class affected would be seriously aggravated by the fact that the distinction between the manual and the non-manual worker is in many cases only technical, with the result that, as between two workers engaged upon closely similar work at the same remuneration, the one would retain his insurance while the other would lose it, solely on account of the technical legal distinction between them; this being a matter which cannot be met by any regulations of the Commissioners, since it is governed by decisions of the Courts mainly under Acts other than the Insurance Acts.

4. To preserve the *status quo ante* notwithstanding the altered conditions, an amendment of the Acts themselves is requisite. Such an amendment is accordingly proposed, not (it should be clearly understood) for the purpose of extending or modifying the present scheme of health insurance in any way whatever, but as the only possible means of enabling that scheme to continue to operate without its scope being artificially narrowed by the circumstances described above.

5. After close consideration it has become clear that this object cannot be secured except by substituting for the figure of £160, above referred to, some higher figure, so as to retain in insurance non-manual workers whose increase of remuneration does not exceed such higher figure. A careful investigation of a large number of employments demonstrates that the substitution of £250 affords the closest possible approximation to the extent to which wages have risen in the case of the classes of non-manual workers affected.

6. It should be mentioned that an incidental effect of this method of meeting the difficulty is that it fails to retain in insurance a certain number of persons hitherto insured, and at the same time may admit to insurance for the first time a certain number of persons not previously insured. This, however, cannot be avoided whatever be the figure adopted; and with the figure £250 the number of persons thus excluded or admitted is, so far as can be ascertained, so small as to be negligible.

7. It has been suggested in this connexion that the purpose in view ought to be attained, not by an alteration of the figure in the remuneration limit of non-manual workers generally, but by so framing the amendment as to retain

in insurance, specifically, the particular individuals, and only those, who are insured now or who have actually been insured at some particular date. This, however, it would seem impossible to carry out consistently with the practical application of compulsory insurance, for various reasons: in particular that the employer is under statutory obligation to stamp the cards of all his employees to whom he is paying wages that bring them within the Act; and he cannot be left to determine in each case whether he is under this obligation or not by reference to facts which often cannot be within his knowledge; nor, on the other hand, could the application of compulsory health insurance be made dependent upon the willingness of the employed person to provide the various facts needed to determine that the obligation does exist or does not.

8. It would seem, therefore, that if widespread hardship is to be avoided there is no alternative to the amendment above described.

9. It should perhaps be mentioned here that it has been supposed by certain doctors that the bill will substantially reduce their receipts from private practice, by transferring a number of persons from being their private patients to panel practice. This can hardly be the case except as to a very small number; and the Government cannot, on that ground, find justification for refraining from the amendment necessary to prevent the disqualification of those large numbers of insured persons who, without the amendment, will lose all the advantages of compulsory health insurance.

10. When these facts are realized it is hoped that the medical profession will not desire to support such objections to a measure which is believed to afford the only practicable method of averting the serious and widespread hardships above indicated.

MEDICAL APPOINTMENTS UNDER THE MINISTRY OF PENSIONS.

THE Director-General of Medical Services, Ministry of Pensions, has issued the following circular letter, dated May 26th, to deputy commissioners of medical services, chairmen of pensions boards, special medical boards and boards at discharge centres, medical referees, and secretaries of local war pensions committees:

Sir,

I am directed to inform you that in consideration of the fact that large numbers of medical officers have now been demobilized, it is the intention of the Minister to bring under review all existing appointments consistently with the prime consideration of the maintenance of efficiency.

So far as whole-time appointments are concerned, the Ministry has always been actuated by the principle of giving preference to medical men who have left their practices to serve in H.M. Forces, and it is deemed desirable to apply the same principle to appointments involving part-time service rendered on medical boards or as medical referees.

Medical Boards.—As regards medical boards, commissioners of medical services are, therefore, strictly enjoined gradually to replace whenever possible civil practitioners who have not served (attendance on medical boards is not to count as war service) by demobilized officers.

Medical Referees.—As regards appointments of medical referees, designedly temporary and provisional, these will be reviewed and thrown open to the candidature of all practitioners in every district, as and when those who have served have returned to their district. As and when the medical commissioner is able to notify to the Director-General of Medical Services that any district may be considered to have had returned to it all, or the bulk of, the medical practitioners who have served, instructions will be given to determine the appointment of all existing medical referees, and to invite fresh applications in order that every application may receive consideration on its merits.

I am, Sir, your obedient servant,

(Signed) A. WEBB,
Director-General of Medical Services.

We understand that the parenthetical sentence in the third paragraph of the circular, which states that "attendance on medical boards is not to count as war service," has been misconstrued by some medical men employed upon such boards into a reflection on the nature of the services they have rendered during the war. They maintain that many of them were not only willing to serve in the army, but offered their services and were precluded from so serving on account of age or physical disabilities. Many made financial sacrifices in order to do this work and at the same time to carry on the work of their colleagues who had joined the Forces. We are assured that the phrase in the Pensions Ministry circular was not intended in any way to belittle the valuable

services rendered by these doctors. We have the authority of the Ministry to say that it recognizes to the full the excellence of the work done by medical men who have served on boards during a time of unexampled stress. The report of the Parliamentary Select Committee on Pensions (now sitting) is not published, but we are aware that Colonel Webb, Director-General of Medical Services, and Dr. Cunyngham Brown, Director of Medical Services, both commented in their evidence on the general excellence of the work done by the re-survey boards of the Ministry of Pensions, which are entirely civilian in composition, and whose members are selected from the panels of local general practitioners.

The object of the circular was to serve as a guide to officials of the Ministry in order that demobilized officers, desiring employment should not suffer hardship or be at a disadvantage by reason of their absence on naval or military service. Moreover, it is sound medical policy, when dealing with men disabled in warfare, to give preference to medical men who have themselves had experience of the conditions of modern warfare, and have been concerned in the treatment of war diseases in the field and in military hospitals.

BIRTHDAY HONOURS.

A SERIES of ten Supplements to the *London Gazette* was issued on June 3rd containing a list of honours and awards conferred on the occasion of the King's birthday.

The following is a preliminary list of awards; those to medical officers—permanent and temporary—are granted in recognition of valuable services rendered in connexion with military operations in the various theatres of war.

K.C.M.G.

The Hon. Sir John McCall, M.D., Agent-General in London for the State of Tasmania.

K.C.V.O.

Mr. Joseph Oliver Skevington, F.R.C.S.

C.B.

Colonels: George W. Barber, C.M.G., D.S.O., A.A.M.C.; Robert James Blackham, C.M.G., C.I.E., D.S.O., late R.A.M.C.; Hubert Alaric Bray, C.M.G., late R.A.M.C.; Stevenson Lyle Cummins, C.M.G., late R.A.M.C.; John Vincent Forrest, C.M.G., late R.A.M.C.; John Alexander Gunn, O.B.E., C.A.M.C.; Henry Thomas Knaggs, C.M.G., late R.A.M.C.; James Robert MacMunn, C.M.G., late R.A.M.C.; Claude K. Morgan, C.M.G., late R.A.M.C.; Thomas du Bedat Whaithe, C.M.G., late R.A.M.C.; Charles F. Wylde, C.A.M.C.

Temporary Colonels: Francis D. Boyd, C.M.G., A.M.S. (Major R.A.M.C.T.F.), William Pasteur (Lieut.-Colonel R.A.M.C.T.F.), C.M.G., A.M.S.

Lieut.-Colonels and Brevet Colonels: Arthur Chopping, C.M.G.; R.A.M.C.; Allan James Macnab, C.B., I.M.S.; Arthur Lisle A. Webb, C.M.G., R.A.M.C.; Sir Edward S. Worthington, K.C.V.O., C.M.G., R.A.M.C.

Lieut.-Colonels (acting Colonels): Harold Collinson, C.M.G.; D.S.O., R.A.M.C.(T.F.); Ransom Pickard, C.M.G., R.A.M.C.(T.F.).

C.M.G.

Major-Generals: John Joseph Gerrard, C.B., A.M.S.; Robert Porter, C.B. (ret. pay), James Thomson, C.B., A.M.S.

Colonel William Thomas Mould, late R.A.M.C.

Temporary Colonels: Charles Coley Choyce, C.B.E., A.M.S.; Henry Wade, D.S.O., A.M.S. (Captain R.A.M.C.T.F.).

Lieut.-Colonel (temporary Colonel) Thomas Peel Dunhill, A.A.M.C.; William Purnell Gwynn, R.A.M.C.

Lieut.-Colonels (acting Colonels): Alexander M. McIntosh, R.A.M.C.(T.F.); William Thomas M. Mackinnon, C.A.M.C.; E. C. Montgomery-Smith, D.S.O., R.A.M.C.(T.F.); Andrew A. Watson, D.S.O., R.A.M.C.(S.R.).

Lieut.-Colonel and Brevet Colonel (temporary Colonel) William W. White, C.B., I.M.S.

Lieut.-Colonels: John Hubback Anderson, C.B.E., A.A.M.C.; Seymour Gilbert Barling, R.A.M.C.(T.F.); F. Charles Bell, C.A.M.C.; Sir James Kingston Fowler, K.C.V.O., R.A.M.C.(T.F.); Allan Coats Rankin, C.A.M.C.; George McIver Campbell Smith, I.M.S.; Ervin L. Stone, C.A.M.C.; William Thorburn, C.B., R.A.M.C.(T.F.).

Temporary Lieut.-Colonels Claude Gordon Douglas, M.C., R.A.M.C.; Percy W. G. Sargent, D.S.O., R.A.M.C.; George R. Thomson, S.A.M.C.

Major and Brevet Lieut.-Colonel (acting Colonel) C. W. Holden, D.S.O., R.A.M.C.

Major and Brevet Lieut.-Colonel Cuthbert Garrard Browne, D.S.O., R.A.M.C.

Major (acting Colonel) Edward Lawton Moss, M.C., R.A.M.C.

Major (acting Lieut.-Colonel) Joseph Ward, D.S.O., 1/1st Home Counties Field Ambulance, R.A.M.C.(T.F.).

C.V.O.

Sir Alexander C. Houston, K.B.E.

Dr. J. Mitchell Bruce.

(To be continued.)

British Medical Journal.

SATURDAY, JUNE 7TH, 1919.

THE LISTER INSTITUTE.

THE Lister Institute is unique among the medical establishments of London, because it is an independent organization endowed by private benefactors. The only comparable institution is the London School of Tropical Medicine, which, however, is in the enjoyment of Government support. The Lister Institute is one of the schools of the University of London, admitted under the statute which empowers the senate to admit any institution within the prescribed area founded for the promotion of science or learning to be a school of the university for the purpose of research or the cultivation of any special branch of science or learning. Its director, Dr. C. J. Martin, F.R.S., is professor of experimental pathology in the university, while several members of its staff are readers or recognized teachers in the university. But its connexion with the university is otherwise shadowy and its affairs are managed by a governing body which includes Major-General Sir David Bruce, K.C.B., F.R.S. (chairman), Professor F. W. Andrewes, M.D., F.R.S., Professor W. Bulloch, F.R.S., Sir James Kingston Fowler, K.C.V.O., and Professor E. H. Starling, C.M.G., F.R.S. There is also a council containing representatives of the members of the Institute and of many learned bodies.

The report to be presented at the annual general meeting next Wednesday gives an account of the various activities of the Institute during the year, and contains a section in which its future general policy is discussed. A great deal of the time of the staff of the Institute—which, owing to the war, was much diminished—was given to routine bacteriological examinations for the London County Council and other public bodies, and the production of serums and vaccines for the War Office and the Government of Egypt. But some of the work done for the War Office has reached out to research, as, for instance, investigations made by Dr. Arkwright and Mr. Bacot as to the virus of trench fever and typhus fever, and the transmission of these diseases by lice. Miss Muriel Robertson has continued researches upon anaërobic bacteria of wounds and the preparation of standard samples of the toxin of *Vibrio septique* which have been used in preparing and standardizing the serums issued to the army from the serum laboratories of Messrs. Burroughs, Wellcome and Co. Much of present knowledge of the pathogenic anaërobic has been gained since the beginning of the war, and in its acquisition Miss Robertson, who is secretary of the Anaërobic Committee originated by the Medical Research Committee, has taken a prominent part.

In another direction researches stimulated by the war have yielded results of permanent importance to physiology and general medicine—and indeed to sociology and statecraft also. Dr. Harden and Dr. Zilva have made a series of investigations into the properties of accessory food factors and the effects of the deprivation of them on various animals. A related research was that conducted by Dr. Harriette Chick, at the request of the military authorities,

into the cause of scurvy; it was eventually expanded to include certain other deficiency diseases. The research demanded the greatest care in the adjustment of the diets and the feeding of the animals, and the help of many volunteer workers was enlisted. This inquiry has had many parts, but those concerned with the quantitative determination of the relative antiscorbutic efficiency of natural foodstuffs, and with the loss of antiscorbutic value during the drying of vegetables, are now practically complete; work is still in progress with regard to the preservation of lemon juice and root vegetables, and as to the antiscorbutic and growth-promoting properties of cow's milk, with special reference to infant feeding. The novel feature of the investigations has been the attempt to get a quantitative estimate of the amount of accessory food factors in various foodstuffs, the first step being to determine experimentally for each substance the minimum daily ration which will protect the experimental animal. A committee on accessory food factors, with Professor Hopkins as chairman and Dr. H. Chick as secretary, has been sitting during the year, and has prepared a monograph to meet the needs of the general scientific and medical reader.

The serum department has manufactured very large quantities of serums and vaccines for the army and navy, and some experiments on concentration of antitoxin serum for practical purposes have been made by Dr. MacConkey and Miss Homer, and on the standardization of antimeningococcic serums by the first named and Mr. Roger, but without as yet any satisfactory result in the latter case.

The governing body has come to the conclusion that the work in diagnosis undertaken for various public bodies should be restricted in order that the whole energies of the Institute may be devoted to medical research, and incidentally it proposes that the name should be changed to the Lister Institute of Medical Research. But if a medical research institute is to achieve its aim to the full it must have control of a certain number of beds in a special hospital. The problems to be solved are presented by the disordered human body. It is only by study at the bedside that the natural history of disease can be ascertained. The patient presents the problems in the rough; by examination of the excretions, and of the products of disease, by biochemical, bacteriological, and protozoological methods, the problem can be narrowed down to a form in which it can be handed over to the experimental pathologist. The constitution of the Lister Institute does not permit it to possess a residential hospital, although it may treat as out-patients persons suffering from disease. It will be necessary, therefore, so to amend its constitution as to remove this disability, and thereafter to obtain funds for the provision of the hospital desired. The endowment of the Lister Institute is small compared with that of the Pasteur Institute in Paris, and very much smaller than that of the Rockefeller Institute in America. We think that this sketch of the work done during 1918, though it omits even mention of many valuable investigations, is sufficient to prove that an institution such as the Lister, self-governing but with a loose connexion with the university, has fully established its right to exist, and its claim on the enlightened public. It affords to the independent research worker facilities which he could not easily find elsewhere, and has already inspired and accomplished much valuable work. We hope that it may be able to continue its career of usefulness with the extension of its field of inquiry now proposed.

THE WORK OF THE FOOD INVESTIGATION BOARD.

THE report for 1918 of the Food Investigation Board,¹ appointed by the Lord President of the Council "to organize and control research into the preparation and preservation of food," contains much that is of interest to different classes of reader. The practical work of the board was organized by numerous sub-committees, each containing scientific and industrial representatives. The Fish Preservation Committee was mainly occupied with the investigation of a method known as brine freezing, in which the fish to be frozen are plunged into strong brine cooled to 10° F. or lower; they satisfied themselves that the principles of the method were scientifically correct, and have arranged to carry out experiments upon a larger scale. The Engineering Committee dealt with the type of wagon or barge best suited for the carriage of frozen produce, and enjoyed the co-operation of the staffs of various railway companies. The Meat Committee organized a number of researches of particular interest. Under the supervision of Professor Bayliss biophysical experiments are being made to determine why the qualities of beef are more easily impaired by refrigeration than those of mutton; autolytic *post-mortem* changes are being studied in Professor Hopkins's laboratory; Dr. Graham-Smith is investigating the life-history of putrefactive micro-organisms, and Mr. E. T. Brooks is studying moulds. The Oils and Fats Committee is concerned with the problem of refining edible fats, and is also maintaining a liaison with the committee appointed by the Medical Research Committee to elucidate the question of fat soluble vitamins. The Fruit and Vegetable Committee has divided the problem before it into a study of the chemical changes occurring during the maturation and storage of fruit; a study of the effects of various external conditions upon the fungi which cause deterioration of stored fruit; a study of the conditions to which fruit is subjected in commercial cold storage; and the testing of a small refrigerating plant for laboratory purposes. The committee has found that the problems are of considerable complexity—thus the presence of non-electrolytes in the sap considerably reduces its electrical conductivity, a source of error which seems to have been overlooked by earlier investigators of the physical changes in stored fruit.

It is of course too early to form an opinion as to the direct utilitarian value of the researches promoted by the board; of the importance of the problems under notice there can be no doubt. It will be seen that the board has appointed several committees. It took this step "with reluctance, for research by committee is suspect. In the pursuit of science the instinct of the individual counts for more than the combined intelligence of the many." There is a sense in which this epigram is true; the notion that new and valuable truth will be attained by the periodic convocation of experts who debate the items of an agenda paper drawn up by a lay secretary and pass for publication or blue-pencil the reports of subordinates is quite rightly suspect. But it does not seem to us that the system favoured by the board is open to this reproach, and we cordially approve of the delegation of much of the research work to university departments. We have always maintained that the function of the state is not to supersede the universities as centres of research and that it should only create new machinery when university laboratories

cannot possibly be made available. The only proposal of this kind made by the board—namely, to establish a laboratory to deal with the applications of brine freezing at Lowestoft—fulfils our conditions because such a laboratory must be established at a great fishing port.

Except with regard to vitamins, the board is silent upon the general issues of nutrition, which are, indeed, outside its terms of reference. Nothing further has been heard of the proposal, made many months ago, that a permanent organization for the fostering of research into the problems of human nutrition should be set on foot. We shall, perhaps, have to wait until the Ministry of Health is in working order before this matter is placed on an entirely satisfactory footing.

CREMATION IN ENGLAND.

THE report of the Cremation Society of England recently issued¹ states that in the twelve months ended December 31st, 1918, cremation showed a considerable advance. Every crematorium in Great Britain recorded an increase of activity. The total number of cremations during 1918 was 1,795, as against 1,515 in 1917. The number at Woking was 142, as compared with 129 in the preceding year, whilst the corresponding figures for Golders Green were 820 and 719. The total number of cremations carried out in Great Britain since the opening of the Woking Crematorium in 1885 is 19,671. It is stated on the authority of *Hazell's Annual and Almanack* that the United States of America had seventy crematoriums in 1918 and that 13,226 cremations were carried out in that country during 1917. Among the persons of note whose remains were disposed of by cremation during the past year at Golders Green and Woking were Lord Courtney of Penwith, Lord Rhondda, Sir Alexander Rendal, Bishop Boyd Carpenter, Brigadier-General A. Wolfe-Murray, Lady Fisher (wife of Fleet Admiral Lord Fisher), Sir Hubert Parry, Sir William Dalby, and Sir Herman Weber. We need not repeat here the arguments that have been advanced many times in this JOURNAL in favour of cremation. It is unquestionably the best method of disposing of the remains of the dead in the interest of the living, and by preventing corruption it shows the truest reverence for those who have passed behind the veil. The sentimental objection has its root in want of imagination, while the theological difficulty seems to be founded on a materialistic conception utterly contrary to religious faith. Can any one not devoid of common human feeling believe that the wholesale destruction of men's bodies by shell fire and incendiary bombs has added to the horrors of war by depriving Christian soldiers of the hope of resurrection? This, which we hold to be the only rational view of the matter, makes us deplore the attitude which the Roman Catholic Church maintains in regard to cremation. So far from relaxing its *non possumus* on the subject, in the revised Codex of the Canon Law² the prohibition is made more stringent. Cremation is not only reprobated, but if directions are left by a deceased person that his body is to be burnt, these are to be absolutely disregarded; breach of this injunction is punishable by excommunication. Although signs are not wanting that the old prejudice against cremation is dying out in the enlightened classes there is still need of active propaganda to make its advantages realized by the community at large. For its work in this direction the Cremation Society of England deserves a much larger measure of support than it has yet obtained.

¹ Extract from *Transactions of the Cremation Society of England* No. xxx, 1919. 324, Regent Street, W.1.

² Codex Juris Canonici Pii X Pontificis Maximi jussu digestus Benedicti Papae XV auctoritate promulgatus. Romae, MCMXVII.

¹ Published for the Department of Scientific and Industrial Research by H.M. Stationery Office, 1919. Price 3d.

THE GOLDSMITHS' COMPANY'S CHAIR OF BACTERIOLOGY.

At a meeting of the College Board of the London Hospital on May 26th a letter was read from the Clerk to the Court of the Goldsmiths' Company offering a sum of £15,000 for the endowment of a chair of bacteriology, to be known as the Goldsmiths' Company's Chair of Bacteriology. In making this gift the Court expressed the hope that its action might induce other organizations and individuals to consider the desirability of assisting the cause of medical education and research in a similar manner, a hope which all who have the interests of their country at heart must, we think, devoutly share, for in any attempt to remedy social evils, to prevent disease, or to improve the national physique, the existence and co-operation of a skilled and highly trained medical personnel is of primary importance. Such a personnel can only come from schools adequately staffed and equipped—in other words, adequately supplied with money. This is, we believe, the first instance of the endowment of a chair in connexion with any subject of the medical curriculum at any London medical school. It is to be hoped that other great city corporations or firms, according to their means, will follow the munificent lead of the Goldsmiths' Company.

TREATMENT OF CEREBRO-SPINAL FEVER BY MONOTYPICAL SERUM.

THE war produced conditions in this country, especially the overcrowding of recruits, which led to a great increase in the number of cases both among the military and civil populations. In 1915 the treatment by serum, which had previously been shown by Dr. A. G. Robb of Belfast and others to exert a most beneficial effect, was a failure, apparently because Flexner's serum was no longer available. The Medical Research Committee at once devoted their well organized resources to the investigation of the disease, with the result that scientific knowledge and practical prophylaxis have been greatly advanced. Lieut.-Colonel M. H. Gordon isolated his now familiar four types, of which Types I, III, and IV are relatively well defined, whereas Type II is more complex, three subgroups of it having been distinguished by Major W. J. Tulloch. A further important point established by Lieut.-Colonel M. H. Gordon is that the therapeutic value of anti-meningococcus serum depends not on its agglutinin titre, its opsonin content, nor apparently on its power to protect against the living meningococcus, but solely on its anti-endotoxin capacity. Utilizing these two advances Dr. Stanley Griffith, working at the University Field Laboratories, Cambridge, under the Medical Research Committee, has prepared monotypical serums for each of the four types, by using a modification of Amoss and Wollstein's intensive method of immunization. These monotypical serums were tested at the Central Cerebro-spinal Fever Laboratory and not passed for therapeutic use by a number of selected clinical observers unless their agglutinin titre and anti-endotoxin capacity were satisfactory. An analysis of the first 90 cases treated with monotypical serums has been made by Major T. G. M. Hine, who has throughout been closely associated with Lieut.-Colonel M. H. Gordon's work. Until the type of infecting meningococcus is determined the pooled serum for Types I and II, which are responsible for 80 to 85 per cent. of all the cases, is given; but directly the infecting organism is typed the corresponding monotypical serum is substituted. The reasons for not giving in the first instance the pooled serum for all four types are that Types I and II were responsible for most of the cases, and that the anti-endotoxin capacity would thus be diluted four-fold. Of the 90 cases 7 died largely

or solely from causes other than meningococcal infection, and may therefore be eliminated. Among the 83 cases there were 10 deaths, or a mortality of 12 per cent., thus contrasting most favourably with Flexner's 30.9 per cent. for cases treated with serum. In a further analysis of 58 cases in which the serum was administered before the seventh day of the disease, and therefore had a fair prospect of success, there were only 2 deaths, or a mortality of 3.44 per cent. The clinical success was most prominent in Type I—34 cases with 1 death—but among the 32 Type II cases there were 7 deaths, or a mortality of 21.9 per cent. This may be correlated with the laboratory observations that the present Type II serum does not contain such a large proportion of anti-endotoxin as does the Type I serum, and that Type II is complex, as shown by the absorption test. Lieut.-Colonel Gordon points out that possibly a more successful serum may be obtained by preparing horses each against a chief subgroup of Type II, and then, if necessary, pooling their serum. It is highly desirable that this should be tried, and it will then be most interesting to have a further report on a more extended series of cases.

HISTORY OF MEDICAL CHARITY IN PERU.

MUCH has been written by English historians of the bad administration of her colonies by Spain, but there are redeeming features of which less is heard. In a recent number of *La Medicina Ibero* Dr. C. E. Paz y Soldán of Lima describes how public charity was dealt with in the conquest of Peru. The earliest document is an ordinance of Charles V, dated October 7th, 1541, ordering viceroys and governors to found hospitals for the care of the sick poor. By a further enactment, dated July 13th, 1573, Philip II ordered that wherever "any city, town or place should be founded," hospitals for non-contagious diseases were to be placed in the neighbourhood of churches; for contagious affections buildings were to be erected on high ground whence infection could not be conveyed by the air to the healthy population. When the Conquistadores set about organizing public administration, one of the first acts of the authorities of Lima was to provide funds for the construction of a hospital. In 1572 permission was granted to the confraternity of St. John of God to establish themselves in Peru; they were bound to render every year to the King a fully documented account of their stewardship. Another body of hospitalers was the congregation of Bethlehem founded in 1619 at Tenerife in the Canary Islands by Pedro de Betencourt and brought to Lima by the Viceroy, the Conde de Lemos. His successor, Conde de Castellar, gave them charge of hospitals in different parts of Peru, and the Crown assigned them revenues from various sources. A special tax called the hospital *toquin* (a silver coin) was levied from the natives. This tax produced 30,000 gold pesos annually, and further funds for maintenance were supplied by voluntary contributions and legacies, which were abundant and generous. From an early period Lima had a number of institutions for the relief of various forms of human need. There were hospitals for sick natives of both sexes—for lepers, for negroes and mulattos, for convalescents, for seafaring men, for poor sick clerics, and for foundlings. There was an institution for the care of Spanish women and the shelter of white girls from the dangers to which poverty exposed them. If they married, a dowry of 500 gold pesos was provided. Hospitals were established in the provinces of Peru and in Potosí, Buenos Aires, Paraguay, Cordova, and Tucumán. The Crown, which saw in these efforts of philanthropy a powerful political engine, encouraged the pious founder by extending to him its gracious patronage in the shape of a strict control of the institutions which he erected. Dr. Paz y Soldán says nothing of any part played by the hospitals in the advance of medicine because there is virtually nothing to be said. This

¹ The Specific Treatment of Cerebro-spinal Fever, with an Analysis of the Reports on the first Ninety Cases Treated with Monotypical Sera. (1) Introductory Note by M. H. Gordon, C.M.G., M.D. (Temp. Hon. Lieut.-Colonel R.A.M.C.). (2) Analysis of the Ninety Cases by T. G. M. Hine, M.D. (Temp. Hon. Major R.A.M.C.). Medical Research Committee. 1919.

is accounted for by the lack of competent doctors and of any system of teaching. The holy men to whom the care of the sick was entrusted were in general indifferent to the claims of "poor brother ass," as Francis of Assisi called the human body. Their chief concern was the spiritual welfare of the patients, the cure of their diseases being left largely to nature. During all the time Peru was governed by the mother country the function of public authorities in regard to social assistance was limited to the supervision of the private charitable activities inspired by religious zeal. When the revolution freed the new world from the dominion of Spain and breathed the democratic spirit into the organization of social assistance, new ideas replaced the old colonial traditions. The Declaration of the Rights of Man played a vital part in the reforms which followed the intervention of the State in medico-social problems.

THE LIVERPOOL VICE-CHANCELLORSHIP.

At a meeting of the Council of the University of Liverpool, on June 3rd, it was unanimously decided to offer the post of Vice-Chancellor to Colonel J. G. Adami, M.A., M.D., D.Sc., LL.D., F.R.S., Strathcona Professor of Pathology and Bacteriology in the McGill University of Montreal. The vacancy is caused by the retirement of Sir Alfred Dale as from the end of next September. We congratulate the University of Liverpool on having sought the services of so distinguished a man of science as Professor Adami for this important post. The selection is interesting as forming another link between this country and Canada, and is an example of that interchangeability between seats of learning within the British Empire—as is Professor Elliot Smith's appointment first to Manchester and now to University College, London—which is so desirable in the interests of learning. Professor Adami, who is a Lancashire man by birth, had a distinguished career at Cambridge, where he took a first class in both parts of the natural science tripos. After serving as house-physician at the Manchester Royal Infirmary he was appointed demonstrator of pathology in the University of Cambridge in 1887, and became John Lucas Walker student of pathology in 1890. He was appointed to the chair at McGill University in 1892. His researches in pathology have been concerned with fundamental matters and his book on inflammation is a standard work. Throughout his career in Canada he maintained a close connexion with medical work in the widest sense, being advisory pathologist to the Montreal General and Royal Victoria Hospitals, and president of the Canadian Association for the Prevention of Tuberculosis. The position he attained on the American continent is shown by the fact that he was president of the Association of American Physicians in 1911-12. He came to this country shortly after the outbreak of war as A.D.M.S. on the staff of the Canadian Expeditionary Force; he is the medical historical recorder of that force and a member of the War Office Committee on the Medical History of the War. He has already published a first volume of a popular medical history of the Canadian contingents under the title of *The War Story of the Canadian Army Medical Corps*. He delivered the Croonian Lectures before the Royal College of Physicians in 1917, in which he discussed adaptation and disease with a freedom and originality which startled some pathologists and biologists and led to controversies the echoes of which have not altogether died away. These lectures formed a considerable part of the volume entitled *Medical Contributions to the Theory of Evolution*, published early last year. We are glad to learn that Professor Adami has accepted the appointment. It is very appropriate that the chief executive officer of the university of a modern and progressive city such as Liverpool should be a man of science.

PROFESSOR ELLIOT SMITH.

PROFESSOR GRAFTON ELLIOT SMITH, F.R.S., has been appointed Professor of Anatomy in University College, London, in succession to Sir George Thane, who will retire at the end of the current session. Professor Elliot Smith is one of the most distinguished of living anatomists, and his researches in comparative anatomy, especially in the evolution of the central nervous system, have made him one of the great forces in biology. He was born at Grafton, New South Wales, in 1871, graduated M.B. Sydney in 1893, and M.D. in 1895. He was demonstrator of anatomy at Sydney and also at Cambridge, where he became a Fellow of St. John's College and graduated M.A. in 1902. He was for some time professor of anatomy in the Egyptian Medical School, and since 1909 has been professor of anatomy in the University of Manchester. He was elected F.R.S. in 1912 and F.R.C.P. Lond. in 1915. He was awarded the prix Fauvel by the Société d'Anthropologie de Paris in 1911, and a royal medal by the Royal Society in 1912. He is giving the Croonian lectures before the Royal College of Physicians this month; the subject of his course is the significance of the cerebral cortex.

THE DETERMINATION OF OCULAR TENSION.

MACKENZIE was one of the first surgeons to observe, in 1830, that the glaucomatous eye was abnormally hard. The importance of an accurate determination of the intraocular tension was soon realized, and it was not long before ophthalmologists began to doubt the accuracy of its estimation by palpation. As early as 1863 von Graefe and Hamer constructed tonometers of the impression type, in which the reading was obtained by pressing the instrument against the eye. It is obvious that an instrument of this nature is little if at all more accurate than simple palpation. The Priestley Smith tonometer was much more reliable, and was of the modern impression variety. The Maklakoff tonometer was of another type. It consisted essentially of a weight which had on its contact surface a flat disc of polished glass 1 cm. in diameter. When used the flat surface of the glass is smeared with a colouring solution and allowed to rest upon the cornea. Contact presses the coloured solution outwards, leaving a clear area equal to the flattened cornea. A transfer is made upon prepared paper, from which the computation of intraocular pressure is made. Until the Schiötz tonometer appeared the Maklakoff was the best, but the determination was lengthy and difficult. The Schiötz instrument was the first really practical and accurate tonometer, and is now employed by every up-to-date ophthalmic surgeon in the world. With it a determination can be made in a few minutes. The inaccuracy of palpation may be illustrated by the following incident: A patient was examined digitally at a meeting of an ophthalmological society by several ophthalmologists of repute. Their opinion as to the tension of the eye varied within wide limits. One said the tension was raised, another that it was normal, while a third that it was low. It is evident that digital examination is at best a coarse and uncertain method. No one would post a letter of doubtful weight with a balance at hand, and yet in the past many eyes have been committed to operation after examination by a procedure not nearly so delicate as judging weights by the hand. The Schiötz tonometer is provided with a metal cup curved to accommodate itself to the cornea. It is pierced by a central aperture which contains a metal rod. The upper end of the rod is fitted to hold weights of 15, 10, 7.5, or 5 grams, and it impinges against the lower end of a lever which registers upon an index. The cornea is anaesthetized with holocaine, a drug which does not dilate the pupil. The instrument is held by a loose handle upon the cornea, and a suitable weight which has been screwed on to the rod impresses the cornea and causes a deflection of the index. The softer the eye the more it is impressed, and vice versa. The reading of the scale is transferred to

a graph and the tension of the eye read off. A suitable weight must be selected—the heavy weight for hard eyes, the lighter weight for softer eyes. W. McLean of New York¹ has devised a modification of the Schiötz tonometer which avoids the change of weights and brings the scale low down, so that it can be seen without raising the eye from the cup which rests upon the cornea. McLean has calibrated his instrument by direct manometric measurements of a human eye which was to be enucleated.

R.A.M.C. MEMORIAL SERVICE.

As already announced in the JOURNAL, a service will be held in St. Paul's Cathedral, at 12 noon, on Wednesday, June 25th, in memory of the officers and men of the Royal Army Medical Corps who have fallen in the war. The number of those who gave their lives has been stated by Lieut.-General Sir John Goodwin, D.G.A.M.S., to be 560 officers and 4,091 other ranks. Applications for tickets for the memorial service should be made before June 12th to Captain A. R. Wright, D.S.O., R.A.M.C., personal assistant to the D.G.A.M.S., War Office, Adastral House, Victoria Embankment, E.C.4. We are informed that officers who have relinquished their commissions may return to khaki for the purpose of attending the service.

THE GROUP CONFERENCES.

It has already been announced that group conferences are being arranged throughout the country to discuss the report of the Insurance Acts Committee (Document M. 25), and the memorandum of discussions issued by the Insurance Commissioners which have lately been circulated to every member of the profession in Great Britain. A brief outline of the report was given in the BRITISH MEDICAL JOURNAL of May 17th, 1919. For practitioners in London and the adjoining counties three group conferences will be held: the first on June 13th, in Essex Hall, for Middlesex, Berkshire and Reading, Hertfordshire, Essex, West-Ham, and Southend; the second on June 20th (place not yet fixed) for practitioners in the London area north of the Thames; the third on June 27th, in Essex Hall, for practitioners in the London area south of the Thames, together with those in Surrey and Croydon, Kent and Canterbury. It is proposed to hold conferences in other centres as follows: Norwich, June 14th; Bristol, June 17th; Birmingham, June 18th; Plymouth, June 19th; Northampton, June 20th; Southampton, June 24th; Leeds, July 1st; Newcastle-on-Tyne, July 2nd; York, July 3rd; Nottingham, July 4th; Carlisle, July 8th; Cardiff, July 9th; Preston, July 9th; Manchester, July 10th; Chester, July 11th; Brighton, July 12th.

We have to announce with great regret the death, on June 2nd, in his 74th year, of Mr. G. O. Franklin, F.R.C.S., who was President of the British Medical Association when it held its annual meeting in Leicester in 1905. A few years ago Mr. Franklin retired from the office of surgeon to the Leicester Infirmary, and settled at Fareham, where he died.

Medical Notes in Parliament.

Territorial Officers, Royal Army Medical Corps.

MAJOR D. DAVIES, on May 28th, asked the Secretary of State for War whether, though the Territorial Force has not been disembodied, a number of Territorial officers of the Royal Army Medical Corps are being demobilized against their wishes and before they have had an opportunity of obtaining appointments or practices; whether their places are being filled by retired officers who are receiving both pay and pension; and whether he will give any assurance that in future these Territorial officers will

be given an opportunity to procure appointments or practices before they are finally compelled to relinquish their commissions.

Captain Guest: Territorial Force medical officers, in common with medical officers of the Special Reserve and officers holding temporary commissions in the Royal Army Medical Corps, are being placed on the retired and unemployed list as quickly as possible, and, as far as is known at the War Office, no retired medical officer has replaced a Territorial Force medical officer. As regards the last part of the question, I regret that I cannot give any such assurance. My hon. and gallant friend is no doubt aware that great pressure has been brought to bear on the War Office to release every medical officer whose services can be spared to meet urgent civil requirements. This policy has been, and will continue to be, carried out as far as possible.

Ministry of Health Bill.—The House of Lords, on May 29th, considered the reason submitted by the House of Commons for maintaining the demand that there should be two Parliamentary (or under) Secretaries for the Ministry of Health. The Lords, it will be remembered, had defeated the Government proposal, and held by a large majority that there should be only one under secretary. The Commons had again declared, at the instance of the Government, for two under secretaries. In the debate in the Lords on May 29th the arguments were again gone over, and the Lords, by 97 votes to 27, decided to insist on their amendment that there should be only one under secretary. In the House of Commons, on June 2nd, Mr. Bonar Law moved that the House of Commons should not insist upon its disagreement with the Lords—that is to say, that it should accept the decision of the Lords. The Government, he said, could not afford to lose the bill, and the alteration was not serious. It meant that the Minister of Health would be inconvenienced; although it was possible that this might be put right later on. It also meant that in the other House the department could not be directly represented. Mr. Law's motion was agreed to. On June 3rd the Royal Assent was given to the measure and also to the Scottish Board of Health Bill.

Plague Risks in Eastern and Central Europe.—Dr. Addison, in reply to Lieutenant Commander Kenworthy on June 2nd, said that the precautions for preventing the introduction and spread of plague in this country were contained in general regulations made by the Local Government Board in 1907. He was not aware of any special danger of an outbreak of plague in Eastern and Central Europe during the coming summer as likely to come from the blockade and war, but the precautions taken by the port sanitary authorities under the supervision of the medical department of the Local Government Board were very carefully carried out and strict watch was being kept on vessels coming from plague-infected countries. These measures had proved very effective in the past in protecting the country from plague. Lieutenant Commander Kenworthy: Is the right hon. gentleman aware that the medical profession are very much alarmed at the conditions which are likely to prevail next summer and that the ordinary means will not safeguard us, save with additions of exceptional means? Dr. Addison: I am well aware of the alarm to which the hon. gentleman refers, and, as a result, a joint body representing the different services has been at work on this subject for several weeks past. Captain W. Benn: Does the blockade exclude the sending of drugs to those countries? Dr. Addison: I cannot answer the question without notice.

Medical Attendance on Invalided Service Men.—Sir Philip Magnus asked the Secretary to the Local Government Board, as representing the National Health Commissioners, what was the amount of the pool for 1918 for medical attendance of invalided seamen, marines, and soldiers; and what amount, if any, remained in the pool on December 31st last, after payment had been made for such attendance. Mr. Pratt replied that the sum available from insurance funds for the calendar year 1918 in respect of the medical attendance on invalided men coming under special arrangement was approximately £78,000. So far from there being a balance, as suggested in the second part of the question, the quarterly sums received on account by the practitioners in respect of such attendance substantially exceeded that amount, involving supplementary payments from the Exchequer, in accordance with the scheme.

Board of Customs and Excise Medical Officer.—Mr. T. Wilson asked, on June 3rd, whether the position of medical officer to the Board of Customs and Excise, which had been vacant for three months, had been filled; and if not, what was the cause of the delay in filling that important position. Mr. Baldwin replied that the post had been vacant two and a half months. It was necessary that the holder of it should possess special qualifications, and careful consideration was therefore being given to the selection of the new appointee, whose name he hoped to be able to announce shortly. In the meantime the duties of the post were being efficiently performed by a locum tenens.

The Dogs' Bill.—It is understood that Sir Watson Cheyne will move the rejection of the Dogs' Bill when it comes up in the House of Commons for third reading on June 27th.

¹ Archives of Ophthalmology, January, 1919.

England and Wales.

BRIGHTON WAR HOSPITAL.

THE Second Eastern General Hospital, Brighton, which was established in August, 1914, immediately after the outbreak of war, was closed on May 19th. Colonel Robinson, A.D.M.S. Sussex, who inspected the unit, in saying good-bye, congratulated all on the result of the good work they had done at the hospital. Of its medical officers, ten have served overseas, and one, the late Major C. H. Benham, died of dysentery at Malta early in the war. Of the N.C.O.'s and men, 101 have gone abroad, and of the nurses, 144. The work of the nurses has been beyond praise; a high standard of care, efficiency, and kindness was maintained throughout. Some 70,000 men were admitted to the hospital, and there were about 500 deaths. A very large number of operations of every kind was performed. The hospital has supplied officers for the recruiting boards at Brighton and Chichester, for the National Medical Service Board at Brighton, for attendance at the prisoners of war camp at Hove, and for various services at the many camps in Sussex, including Shoreham, Crowborough, and Forest Row. In addition, specialist officers were provided for many services; the officer in charge of the ophthalmic centre, Major H. H. Taylor, was originally a member of the staff of this hospital, the medical officers at Lady Neville's Neurological Hospital were sent from the parent hospital, and operating surgeons were provided on special occasions at many of the smaller hospitals. The work of the many helpers, including the ladies who conducted the gift room and the Y.M.C.A. hut, and those responsible for the various concert and other parties, has been greatly appreciated. Medals were presented to a large number of lady helpers as a token of the assistance they had rendered. Colonel Apthorpe Webb, the administrator, said that he parted with the unit with great regret, the relations between all the officers, N.C.O.'s, and men having been of the most cordial during the long period of the war.

PRESENTATION TO SIR JAMES BARR.

Sir James Barr received on May 30th a presentation from the West Lancashire hospitals in recognition of his services as county director of auxiliary military hospitals in that area. Mr. Frank Tobin, who presided over a large meeting, said that to few had been granted Sir James Barr's opportunity and capacity in the work of succouring the sick and wounded. It had been a heavy task and those connected with the hospitals knew how he had seized the opportunity with both hands. For the greater part of five years he had given practically all his time to the work, showing promptitude, efficiency, tact, infinite patience, sympathy, energy, and invariable courtesy; the representatives of the West Lancashire group of hospitals had to acknowledge much helpful sympathy and wise counsel from Lady Barr also. Sir James Barr said that he did not claim to have done anything more than his duty, and for that the satisfaction of his own conscience would have been enough reward. The thanks of the country had been earned by those who found the money for the equipment and maintenance of the hospitals, by the medical men, by the V.A.D. nurses, and by the commandants and matrons, and the staffs generally. Without the auxiliary hospitals the War Office would have been unable to deal with all the wounded brought to this country. The presentation consisted of a silver salver bearing the following inscription:

Presented to Sir James Barr, M.D., F.R.C.P., by the Auxiliary Military Hospitals of West Lancashire in grateful recognition of the eminent and invaluable services rendered by him as county director during the great war, 1914-19.

A gift was also presented to Lady Barr.

PRESENTATION TO COLONEL W. H. BULL, A.M.S.(T.R.).

Colonel W. H. Bull, on completing his appointment of Commissioner of Medical Services, West Midland Region, was, on May 28th, entertained by the deputy commissioners and medical staff at dinner at the Queen's Hotel, Birmingham, at which the medical profession of Birmingham was largely represented.

In the course of the evening he was presented with a very handsomely illuminated address on vellum, together

with a pair of massive silver candlesticks (Elizabethan). The address was as follows:

To Colonel W. H. Bull, K.H.S., D.L., J.P., F.R.C.S.Ed.—The close of your work as Commissioner of Medical Services for the West Midland Region has called for a general expression of deep regret from all of us who have worked under you on Recruiting and Pensions Boards, whether as your deputy commissioners or as medical officers.

Your courtesy and consideration have endeared you personally to all who have come into professional relations with you. That the work of the boards during the past three stressful years has been so harmonious and so successful is largely due to your wise and tactful leadership, and we who have served on them owe to you an admirable medical organization of which we are justly proud.

We wish to offer this expression of our cordial loyalty and deep personal regard to you, our professional chief, and of our affectionate wishes for your happiness and prosperity on retirement from your onerous duties.

We beg your acceptance of the accompanying gift of plate in memory of your work here and of those who have been so happily associated with you in it.

During the afternoon the clerical staff presented him with a handsome leather writing case bearing his initials. The presentation was made at Queen's College (head quarters of the Ministry) by the senior grade official, in the presence of the staff.

Colonel Bull has been demobilized after four years and ten months' service. At the date of mobilization he was A.D.M.S. South Midland Division S.C., and at once joined his (48th) division, when after twelve months the division proceeded overseas, he was transferred to the 61st Division as A.D.M.S. He was afterwards appointed S.M.O. Birmingham, senior president of all medical recruiting, tribunal, and officers' boards, and medical inspector of recruiting, Southern Command. On the formation of the Ministry of National Service he was transferred to the Ministry as one of their first commissioners of medical services, and when the Medical Department was handed over to the Ministry of Pensions, he was appointed Commissioner of the West Midland Region under that Ministry.

During his military career Colonel W. H. Bull has been mentioned twice in dispatches.

PROPOSED NOTIFICATION OF FOOD POISONING.

Dr. Waldo, the coroner for the city of London, recently held an inquest with regard to the death of a man after eating the contents of two tins of sardines. The verdict was death from syncope and shock, caused by profound toxæmia following ingestion of tinned sardines. After hearing some observations by the coroner the jury adopted a rider, suggesting that all suspicious cases of food poisoning should be made compulsorily notifiable to the M.O.H. by the medical man attending the patient, with a view to the early detection and prevention of the sale of the particular parcel of food and to its bacteriological examination. Copies of the rider were sent by the coroner to the Local Government Board and the London County Council. We imagine that both these bodies will need a more precise definition of the term "food poisoning" than is afforded by the jury's rider. The term is in fact very elastic, and covers many conditions, varying from a slight attack of diarrhoea to a fatal illness.

Correspondence.

INTRAVENOUS INJECTIONS IN CHOLERA.

Sir,—In the address given by Sir Leonard Rogers to the Indian Science Congress at Bombay reference is made to the treatment of cholera by injections of saline solutions, with the object of replacing the fluid lost from the blood, which loss may amount to 67 per cent. of the plasma volume. The distinguished worker found that isotonic sodium chloride (0.85 per cent.) was practically useless, but that hypertonic solutions (1.2 per cent.) were of much greater value. Since the walls of the blood vessels are freely permeable to salts, there is no permanent difference of osmotic pressure between their contents and the tissue fluids outside them. Hence there is no permanent force to prevent the escape of fluid from the blood vessels. As long as the salt content of the blood, as raised by the introduction of hypertonic solutions, exceeded that of the

tissue fluids in his cases, there would be absorption of water and the blood volume would be maintained; but before long the salt concentration of the tissues would rise to that of the blood, and there would no longer be the difference of osmotic pressure necessary to hold the fluid in the circulation against the filtration due to the arterial pressure. This would explain the repeated injections found necessary by Sir Leonard Rogers. In some experiments that I made, 2 per cent. sodium chloride was found to leave the circulation and cause oedema, although not so rapidly as isotonic solutions did.

Although the walls of the blood vessels are permeable to salts, they are impermeable to colloids, so that if we could introduce a solution of a colloid which possesses an osmotic pressure it would not leave the circulation, and its property of attracting water and preventing loss by filtration would be more or less permanent. We have such a colloid in gum acacia. I have been able to show that a 6 or 7 per cent. solution of this substance in 0.9 per cent. sodium chloride maintains the blood volume under various conditions in which it was defective. Such solutions were used extensively in France for the treatment of hæmorrhage and wound shock.

I would therefore venture to recommend the trial of the method in cholera. I understand that some steps have been taken at Aden in this direction. Gum saline has been used by Dr. Burkitt of Nairobi for blackwater fever and found to raise the blood pressure permanently and to restore the renal function. Sir Leonard Rogers refers to this last as a very serious factor in cholera, and the state in this disease appears to be such as promises better reaction to intravenous fluids than does blackwater fever.

The calcium bicarbonate contained in gum serves also to neutralize any acid produced in the tissues owing to defective blood supply, and if the physiological action of calcium is required no further addition is necessary.

Of course, the treatment by gum saline is not to be regarded as a cure in the ordinary meaning of the word. It keeps up the normal circulation and allows other means, such as are mentioned by Sir Leonard Rogers, to be used effectively.—I am, etc.,

University College, London,
June 3rd.

W. M. BAYLISS.

LIQUOR CONTROL.

SIR,—In your note on liquor control (BRITISH MEDICAL JOURNAL, May 10th) you sum up by saying: "So far as we are able to judge, the medical profession as a whole is not convinced of the necessity for total prohibition, but would, by a large majority, agree with the chairman [of the Central Control Board] in advising restrictions of the nature already indicated."

On Thursday last I had an opportunity of testing the value of your judgement. At a general meeting of medical men residing in this district, called for another purpose, I was allowed to invite signatures to the following memorial:

Memorial to His Majesty's Government.

In view of the great advantages to the efficiency and well-being of the nation and to public health and order which have followed the restrictions placed on the sale of intoxicating liquor during the war, the undersigned earnestly request His Majesty's Government to maintain these restrictions until a permanent measure of reform has been enacted by Parliament.

I was permitted to make a few remarks in support of this memorial, and to read the concluding passage of your note. I then passed the memorial round, asking those in favour to sign. I was glad to find that every doctor present had signed. I think this indicates quite clearly that your judgement was a sound one.

Now, Sir, I hope to go a step further, and ask the Council of the Association to send this or a somewhat similar memorial to the secretaries of the Divisions, with a request that the memorial should be brought to the notice of members attending the divisional meeting, and an invitation should be made to members to sign. No one can doubt the immense importance of liquor control on the future welfare of our nation, and no body of men is in a better position to educate the public on this subject than is the medical profession. Ought we, then, to stand aside and take no part in the matter?

I have for long felt that our status would have ranked much higher and our opinions have carried much more weight had we taken a larger share in public work, both collectively and individually, than we have, and I sincerely hope that in the immediate future the profession will take its rightful share in helping to solve many of the difficult social problems with which we are confronted.—I am, etc.,

Oxford, May 31st.

WILLIAM COLLIER.

MEDICAL DEMOBILIZATION.

SIR,—Since my return to London a few weeks ago scarcely a day has passed on which I have not received either by post or from the officers in person, while on leave, appeals for my help to secure their demobilization. The majority of the appellants are naturally R.A.M.C. officers, but officers of the Royal Navy are also among them.

The present situation is, briefly, that there are many medical officers still detained in the R.A.M.C. and R.N. after three to four or more years of service who for a variety of reasons are extremely anxious to resume civil life, some to return to their neglected practices, some to enter on new practices awaiting them; others, and these a large number, to complete an education forcibly interrupted by the national necessity. No one who has attempted to help these men will fail to acknowledge gratefully, as I do, the sympathy and active aid in hard cases of the R.A.M.C. head quarters; or the interest and time lavishly given by Sir Watson Cheyne and others. But the Director-General can give little more than sympathy. It is his duty to provide for the medical needs of the army, and unless he has substitutes ready to his hand he cannot, with the best will in the world, replace the long-service M.O.'s who now in various parts of the world claim the relief which has been given to their luckier colleagues. The fault lies elsewhere, and the remedy is in the hands of him who made the error.

On December 19th, 1918, the Minister of National Service issued a memorandum, stating that:

To expedite the relief of medical officers who have been on medical service for a long period he has decided that newly qualified practitioners and medical students who have been protected from recruiting in order to obtain their degree or licence, will, as they qualify, be called up for service with His Majesty's forces as commissioned medical officers, and will continue to serve in this capacity till their services are no longer required.

In January, 1919, the Secretary of State for War threw over the whole machinery, painfully elaborated by the Ministry of National Service and the professional committees, which had hitherto worked with great success, with the result that he is now unable to release medical officers without imperilling the medical safety of the armies. The same remark applies, though in much less a degree, to the Royal Navy.

Mr. Churchill sent out the "Young" soldiers to relieve the long-service men of the combatant forces. I appeal to him to redeem the promise of his colleague and to call up without further delay the young newly qualified men who have not hitherto served abroad. This is the only method which can redress, and even so but partly, a serious injustice to men who, after long and faithful service, now feel that their loyalty is despised, and their appeals rejected and delayed by the procrastination of a politician unwilling to admit an error, and too occupied to consider any answer other than a bare "regret that the War Office cannot consider the release possible in the circumstances": the answer made by his representative in the House of Commons on May 27th.

The release of these men is possible if Mr. Churchill wills it. No doubt it is difficult for a Secretary of State to observe the ordinary obligations which ordinary men are wont to consider binding; it is difficult, but not impossible, to admit an error and retrieve a failure.—I am, etc.,

HUGH THURSFIELD, M.D.(Oxon.), F.R.C.P.,

Assistant Physician, St. Bartholomew's Hospital.
London, W., May 31st.

SIR,—Your recent statements on this subject have not brought much encouragement to those of us who, though "eligible for demobilization," are still retained for service in Germany and elsewhere.

Yet, Sir, after over four years' foreign service, it is hard to be retained by compulsion, to be left month after month without a line of official explanation, to read each

week a list of medical men one's junior by months and years who are getting back to practices and appointments, to watch whole units of every other branch and department of the service demobilized—but, worst of all, to feel oneself at the mercy of an uneconomical and unsympathetic administration.

I believe you will find few more deserving of your sympathy and none more grateful for your interest than
Germany, May, 1919.

TEMPORARY CONSRIPT.

INSURANCE: A FRESH START?

SIR,—I am afraid that Dr. Dain has missed my point. I am quite aware that if you take a sufficiently large number of variables, and a sufficiently prolonged length of time, you will be able to arrive at an average that may be taken as a constant. But there will be maxima and minima to make up that average, and it by no means follows that these maxima and minima will distribute themselves evenly in time and amongst the components of which they are functions. It will be no consolation to Dr. X. to know that his spell of overwork has been compensated by Dr. Y.'s slack time. Dr. Y. will not, of course, consider that he has had a period of compensatory overpayment, and should the occasion arise when he himself has to undergo X.'s experience, he will protest against working for underpayment. That is only human nature, which unfortunately refuses to submit to the law of averages.

Payment per attendance is the rule in most trades and professions, certainly in the lucrative ones. The only objections to the system I have ever heard voiced are based on two fallacies—first, that the clerical work entailed is prohibitive, secondly, that there is less money in it. As to the first, our six years' experience has completely refuted that argument, and as regards the second a moment's thought will show that unless the capitation is fixed at a figure that is beyond all reason a reasonable sum for each attendance must be lucrative. As a matter of fact, very few persons know what the real total of attendances is. We know ours here in Salford, and we have figures that we can guarantee as accurate. And unless the insured persons throughout the country are systematically exploited—which is, of course, absurd—our figures and Manchester's, which together deal with an insured aggregate of about 340,000, will give a fair basis for calculation, at least in town areas. If one properly schedules every medical or surgical attendance with its appropriate fee the whole vexed question of what is or is not a general practitioner service goes by the board. If the system were universal, with its absolute freedom of choice and freedom to continue or change, the profession would realize that the life of a doctor can contain a few happy moments.

I am afraid that I cannot follow Dr. Locket's arguments. Apparently an insurance card, if on the capitation basis, manates a subtle aura of prophylaxis. I can assure him that I am not content with being paid for simply curing my patients. I expect payment even when I fail! The whole aim and object of a practitioner is to prevent or shorten illness. Can Dr. Locket have imagined that prior to the advent of the Insurance Act a medical practitioner was called in to a sick case merely because it was the thing to do and without any hope that his advice would have a favourable influence on the course of the disease? The example that he gives only makes confusion worse confounded. Why he should lose heavily by giving a special treatment to a private patient is beyond my ken, unless the results were uniformly fatal!—I am, etc.,

Salford, June 2nd.

STANLEY HODGSON.

MIDWIFERY UNDER NATIONAL INSURANCE.

SIR,—The proposed inclusion of maternity work in our agreement with the Insurance Commissioners has come to us as a staggering surprise. Personally, in order to give more time to panel work I have been gradually giving up midwifery, as I found it interfere very much with the daily routine.

The objections to midwifery being included in insurance work may be summed as follows:

1. It will be midwifery under supervision. The Government pay the fee, and the Government referee can butt in at any time.

2. It is simply covering the midwife or unqualified practitioner. The present midwife has a training in antiseptics, but scientific knowledge of midwifery she has none. The unqualified midwife may attend cases on her own, send for the doctor when all is over, and so cover herself. This is done now, but it could and would be done on a much larger scale.

3. The majority of insurance practitioners do not want midwifery now, as it interferes so much with their ordinary work. In disposing of a practice lately I was much struck with the number of men who stated they did not want midwifery, and that a large percentage of confinements in a practice, so far from being a recommendation, was a drawback.

4. Panel practitioners can well leave midwifery to those not on the panel. It would be unfair to outside men to absorb midwifery into the panel.

I would suggest that the midwifery clause in the new agreement be made entirely optional. If made compulsory the suggestion is that one can contract out, but it may be very difficult to contract out—indeed, in some districts impossible. Few men would be anxious to take a partner or assistant solely for midwifery, as that would certainly not pay.

I should like to hear other men's views on this subject.—I am, etc.,

Birmingham, June 3rd.

JAMES H. ORMOND.

REPORT OF THE CONDITIONS OF SERVICE COMMITTEE (M. 25).

A Disclaimer.

SIR,—There is nothing in the report (M. 25) which gives any indication of the fact that the report and its recommendations did not receive the unanimous approval of every member of the Insurance Acts Committee. I feel compelled, however, to state that I left the Committee with a protest against the report, having previously indicated objections to some of the more important of the suggestions of the said Committee. I am sorry that I did not insist on my right to issue a minority report, but as that is too late, I must be content with a personal protest, and indicate that I do not approve of the report, and must not be taken as having given my assent to it. Indeed I take the strongest objection to many of the recommendations and comments contained therein. In my opinion the interests of the panel medical practitioner have been grievously betrayed, and if the conditions of service are to be altered on the lines indicated in the report, the professional life of the general practitioner will become almost intolerable. Other memoranda will have to be issued, which will give information as to the character of the committee's report and of the extraordinary memorandum which accompanied it from the office of the Insurance Commissioners. The report may be very pleasing to the Commissioners, but will, I believe, be received with a great deal of dismay by medical practitioners when they are fully acquainted with the alterations which would follow the acceptance of the report of the Committee and the memorandum of the Insurance Commissioners. I am very sorry to find myself so strongly at variance with the Insurance Acts Committee, but a sense of the responsibility resting upon me as an individual member compels me to issue this protest. Other opportunities will occur in which I may be able to outline what I consider are the proposals which cannot be accepted.—I am, etc.,

Crewe, June 1st.

WILLIAM HODGSON.

THE NATIONAL INSURANCE DEFENCE TRUST.

SIR,—In the SUPPLEMENT of March 22nd, 1919, appear particulars about this proposed fund. Again, in the annual report of the Council of the British Medical Association (BRITISH MEDICAL JOURNAL SUPPLEMENT, May 3rd, 1919, page 82) there appears a further reference to it. As there are now being made proposals to induce other medical societies to assist this fund, and as under the conditions of the fund it will affect the interests of all, whether members of the Association or not, it should be carefully considered in order to determine whether it has been formed on sound lines.

As one who considers that the objects and conditions of the fund are not sufficiently broad, and who would like

these amended before it has gone too far, I would ask you to publish the following constructive criticisms. Before doing this, it would be advisable probably to enumerate certain principles which it is suggested should govern a defence fund. These principles include the following:

(a) Seeing that under the Ministry of Health there will be gathered eventually all forms of medical service, thus affecting the interests of all medical practitioners, any fund formed for defence purposes should be able to receive contributions from and to benefit every registered medical practitioner, and should be of personal interest to each one.

(b) There should be only one fund for the whole medical profession, as the medical profession cannot be expected to support adequately more than one defence fund.

(c) In order to encourage general medical approval, it is desirable to associate in its formation, subsequent organization, and management as many recognized medical societies as possible.

(d) That the objects and policy of the fund should receive the approval of all co-operating societies.

(e) That the body controlling the fund should be elected on a scheme elaborated and approved by the several societies co-operating, and should be absolutely independent of any likelihood of Government interference.

Now, how are these principles met by the proposed defence fund?

1. The name indicates that its objects are limited to the Insurance Acts and any extension or modification of these. Thus a large number of medical practitioners would refuse to have anything whatever to do with it, thereby failing to fulfil principle (a).

2. As such practitioners (many thousands) would in time find it necessary to form a similar fund, principle (b) would not be fulfilled.

3. There is no provision made for carrying out principles (c), (d), and (e) (first part).

4. The policy of the fund is to be determined at meetings of statutory bodies (Local Medical and Panel Committees) which owe their existence to Parliament and can be modified or caused to cease to exist by it, no new similar bodies being formed. Principle (e) (second part) is vitiated.

5. Whilst the policy of the Trust is to be decided on by one body (Local Medical and Panel Committees), its management is to be carried out by a committee of another body (British Medical Association). But the latter body has to act also under the instructions of the Council of the British Medical Association (By-law 73), which itself acts under the instructions of the Representative Body, and determines the policy. Also, no meetings of the statutory bodies can be held in order to arrive at a policy unless called together on the sole "discretion and judgement" of the Insurance Acts Committee. Do these statutory bodies appreciate their servile position in regard to their own money and policy? Does the Representative Body appreciate that the Council has approved the formation of another body to determine a medical policy, thereby assisting to the establishment of a rival in politics? Is there in existence in British politics anywhere a grouping of statutory bodies with a defence fund formed to fight their progenitors if need be? Would a Government allow its statutory progeny to continue to exist under such proposed conditions?

It is very noticeable how the panel practitioners have gradually become convinced that the Local Medical and Panel Committees have been formed to safeguard their interests only, and are now taking the next step of looking to them as fighting units if and when the time arrives.

It should not be forgotten that these committees were formed primarily to assist in the improvement of public health and in the advancement of medicine locally. If the profession desires organized fighters, it would do well to look elsewhere. Statutory bodies would hardly be allowed to take up martial attitudes to the Government.

With regard to the five principles enumerated, some medical practitioners may possibly desire to add a sixth—namely, "that the fund should be protected by all the powers of a trade union," thus rendering it impossible for any one to seize the funds. Well, there would be no objection to this if the next logical step were also advocated—namely, that the fund should be controlled by "men of straw"! Then there would be no financial inducement for any one to try a fall with the Trust. But could any subscribers be obtained under such conditions?

I will not dilate on the possibility of the Local Panel and Medical Committees instructing the British Medical Association Committee to take an action which would be contrary to the latter's memorandum, thereby involving its buildings, finances, and constitution in a débâcle, but I would urge all medical practitioners to consider seriously at this juncture the situation about to develop if this Trust Fund is launched as proposed, and to express their

views through their Divisions, societies, and local committees. Promises of subscriptions already received show that a strong defence fund is desired but nothing more. What would seem to be required just now is a policy providing for ultimate union in the profession, and not one which seems to contain the seeds for just the opposite.—I am, etc.,

Hove, Sussex, May 19th.

E. ROWLAND FOTHERGILL.

** Dr. Fothergill appears to have forgotten that a Conference of representatives of various medical organizations was held on May 6th at the invitation of the British Medical Association, as reported in the SUPPLEMENT of May 17th. At that Conference a committee consisting of representatives of bodies attending the Conference was appointed. This committee has held two meetings, and will, we understand, present a report to a further meeting of the Conference summoned for June 6th.

OPTIONAL OR COMPULSORY GREEK AT OXFORD?

SIR,—At the third attempt in the course of the last twelve years, and after months of discussion, those resident members of the university who object to compulsory Greek have, by an overwhelming vote in congregation, carried a statute to make Greek optional in the examinations leading to the B.A. degree.

But it is understood that the defenders of compulsory Greek intend to bring up their supporters from the country for the final voting in convocation on Tuesday, June 17th, in the hope of throwing out the statute, and maintaining compulsory Greek in Responsions.

May we, through your columns, appeal to Oxford medical graduates, of whatever opinion, not to leave the decision to one class of voters, but to make it more fully representative by coming up to register their votes in convocation? Greek is already optional at Cambridge, and, in the interests of the Oxford Medical School, it is of great importance that our medical graduates should come to Oxford and personally record their opinion on this pressing question.—I am, etc.,

Oxford, June 3rd.

E. W. AINLEY WALKER.

A TUBERCULOSIS SERVICE.

SIR,—Professor Kenwood does not definitely disagree with the principle involved in our claim that the tuberculosis officer should direct home visitation and after-care. His only objection seems to be that this policy could not be made general, because special tuberculosis nurses and visitors are the "luxury only of the boroughs and of some county councils," and in many areas the nurse or visitor has to do child welfare and other work. Tuberculosis officers will not only endorse his statement but also deplore its corollary—that in many areas the arrangements for combating tuberculosis are inadequate. Special tuberculosis nurses and visitors, so far from being "luxuries," are essential in any comprehensive scheme. We suggest that where they do exist the policy of the Tuberculosis Society should be adopted. Will the Society of Medical Officers of Health agree to this?

To our claim that the tuberculosis officer should be the sanitary authority's direct adviser on the clinical prevention of tuberculosis, Professor Kenwood refers to "the advantages of one chief administrative medical officer." I should like to endorse, from personal experience, the well known fact that in many county and metropolitan boroughs there is close and friendly co-operation between the medical officer of health and the tuberculosis officer. Nevertheless, it is not certain that the "advantages of one chief administrative medical officer" are "so great that no change is likely to take place." If a Parliamentary Committee were to inquire into the treatment and prevention of tuberculosis in Great Britain, it would find the most efficient schemes to be in areas where the chief clinical tuberculosis officer is direct adviser to the sanitary authority, and the most inadequate arrangements in places where he is not. These facts do not prove my contention, but do appear to call for further inquiry. It is unfortunately true that to-day under a "national" scheme the possibility of any poor or insured consumptive getting adequate treatment depends on the pure chance of where he lives.

Obituary.

The following is the kind of arrangement which calls for redress alike in the interest of the public and of the tuberculosis service. In a county borough, which if necessary I will name, with a population of 140,000, the following appointments and salaries are held. For acting as "medical officer of health," "chief tuberculosis officer," "advisory tuberculosis officer to the Insurance Committee," and as "school medical officer," one gentleman receives £900 a year. The "school medical inspector" who does the actual clinical work receives £500. A third gentleman, who does the actual clinical work in the dispensary, is called "assistant tuberculosis officer" and receives £270, being exactly £10 more than the happy Herefordshire rat-catcher mentioned in your columns a few weeks ago. He is also "resident physician to the fever hospital," for which he receives £130.

The Local Government Board by its circular of December, 1912, permitted a medical officer of health, in exceptional circumstances and when he had the necessary qualifications, to act as a clinical tuberculosis officer, and the safeguards in that clause have not always been observed. In some places the medical officer of health became "chief tuberculosis officer" with an addition to his salary. The local authority was then able to advertise for an "assistant tuberculosis officer" at £250, without the appointment being challenged by the British Medical Association, although in reality the "assistant" was actually to do the work of a chief clinical tuberculosis officer, whose minimum salary had been fixed at £500.—I am, etc.,

HALLIDAY SUTHERLAND,
President of the Tuberculosis Society.

London, May 31st.

PROPHYLACTIC USE OF QUININE IN MALARIA.

SIR,—The letters of Colonel Rawnsley (April 19th) and of Dr. Newell (May 17th) lead me to make a suggestion on the point whether quinine—or rather quinine sulphate, as it was the sulphate which was used—is any use as a prophylactic against malaria. It is that the opinion of R.M.O.'s who served in the Struma Valley during 1916 and 1917 might be taken on the matter, more especially as regards the incidence of malaria during 1916.

If a unit is spread out over six or seven miles of front and the ration of quinine has to be sent in bottles (whisky), with the ration parties, accidents may, and did, occur. Quinine sulphate was at first given to the M.O. of units in bulk, and by them made into solution in rum jars; later on it was made into solution at the field ambulances. In the equipment of the field medical pannier there are no scales; this was got over by the issue of a tin measure to hold 10 grains. When tablets were issued, they also consisted of quinine sulphate, and more often than not passed in the motion undissolved. We did not get tablets of quinine hydrochloride.

Before the war I generally found that a mosquito net played a big part in the prophylaxis of malaria; during 1916 there was no mosquito net. The issue was one square yard a man. We were not allowed to demolish any of the cottages; they were wanted as billets during the cold weather. It is not possible to drain the valley, as most of it is below the bed of the Struma. The inhabitants occupied the valley when we went there first. During 1917 there was an issue of a proper mosquito net, and most of the troops were withdrawn during the summer months to the foothills. Also there was an increase of the administration of quinine, and more constant and better supervision. But the harm was already done.—I am, etc.,

Leamington, May 18th.

W. H. SUTCLIFFE, M.B.

By decree dated May 13th an inspectorship of the surgical services of the French army was given in connexion with the subsecretariat of State of the health services. Inspector-General Sieur, President of the Consultative Health Committee, has been appointed to the new post.

A SCHEME for a 56-hour working week for nurses has been approved by the board of management of the South London Hospital for Women. When the nursing staff is at full strength every member will have one whole day off duty in seven. Night nurses will be given four nights off duty a month and one and a half hours' rest away from the wards during the night. The salaries of the nursing staff have been raised during the past year.

LIEUT.-COLONEL JAMES COATS, R.A.M.C.(ret.), died on May 11th at a nursing home at Ayr, aged 70. He was a son of the late Dr. Coats, who was treasurer of the Faculty of Physicians and Surgeons of Glasgow, and graduated with honours at Glasgow University in 1869. He was a resident at the Royal Infirmary, and was for a time clinical assistant to Lord Lister when he was introducing his antiseptic methods. He had many pleasant recollections of Lister, and was fond of telling his experiences of that interesting period. He was a noted raconteur, and nothing pleased him better than to see his friends and have a talk on things new and old. He entered the army as assistant surgeon in 1871, retiring with the rank of lieutenant-colonel in 1896. He served in India, South Africa, and at home. On his retirement he was appointed to Ayr Barracks. He was a member of the Town Council for two years from 1910. During the war he acted on the Medical Service and Pensions Board. He was a most genial, kindly, and sincere man, who will be greatly missed by his many friends.

LIEUT.-COLONEL RALPH HOLYOAKE, R.A.M.C. (retired), died in hospital on May 18th, aged 57. He was born at Droitwich on November 26th, 1861, and educated at the London Hospital, taking the diplomas of M.R.C.S. in 1883 and the L.R.C.P. Edin. in 1884. He entered the R.A.M.C. as captain in 1886, and became lieutenant-colonel in 1906, retiring at the end of 1917. He served in Somaliland, in the Zaila Field Force, in 1890, and in the South African war, when he took part in the operations in Natal in 1899, and was present in the actions of Elandslaagte, Reitfontein, and Lombard's Kop, and throughout the defence of Ladysmith, including the sortie of December 7th, 1899, and the action of January 6th, 1900; in the operations in Natal in 1900, including the action at Laing's Nek on June 6th–9th; in operations in the Transvaal in 1900, with the actions at Belfast and Lydenburg; and in the Transvaal and Orange River Colony in 1901, receiving the Queen's medal with five clasps.

MAJOR FRANCIS MORTIMER TAYLOR, M.C., R.A.M.C.(S.R.), was killed in action on March 17th, presumably in Russia, though the place is not stated. He was the younger son of J. Taylor, C.B., Assistant Under Secretary, Dublin Castle, and was educated in Dublin, taking the diplomas of L.R.C.P. and S.I. in 1914. He joined the Special Reserve of the R.A.M.C. as lieutenant on September 23rd, 1914, was promoted to captain on April 1st, 1915, and recently to major.

MAJOR HUGH HUNTLY ROBINSON, M.C., Royal Air Force Medical Service, was killed in an aeroplane accident at Mons on May 3rd, aged 29. He was the second son of Dr. H. Shapter Robinson of Epsom, was educated at the London Hospital, and took the diplomas of M.R.C.S. and L.R.C.P. Lond. in 1912. He took a temporary commission as lieutenant in the R.A.M.C. on April 10th, 1915, was promoted to captain after a year's service, and recently joined the medical branch of the R.A.F. with the rank of major. He received the Military Cross on November 14th, 1916, and a bar thereto on June 4th, 1918.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on May 31st the degree of Doctor of Medicine was conferred on E. S. Taylor, C. A. Dottridge, and R. Ellis.

Mr. H. W. C. Vines, of St. Bartholomew's Hospital, has been elected to a junior Fellowship at Christ's College.

Dr. J. P. Lowson has been appointed demonstrator in experimental psychology for five years.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—J. J. Connolly, C. T. Cullimore, J. Danaher, T. N. D'Arcy, Ella Gleeson, P. N. Hegarty, B. F. Honan, C. L. L. Wilson, Norah McCormick, D. J. F. O'Flanagan, E. Waide.

D.P.H.—C. F. Murphy.

Medical News.

THE KING has approved the appointment of Sir William Watson Cheyne, Bt., K.C.M.G., to be His Majesty's Lieutenant for the islands of Orkney and Shetland.

THE Prince of Wales has accepted the position of Grand President of the League of Mercy. The office was formerly held by King Edward VII and by his present Majesty.

THE date of the annual meeting of the Metropolitan Counties Branch to be held at 429, Strand, W.C.2, has been changed from Friday, June 27th, to Thursday, June 26th, at 4.30 o'clock.

THE King of Spain has conferred the Grand Cross of the Civil Order of Alfonso XIII on Madame Curie, Professor in the Faculty of Sciences of the University of Paris.

IT is hoped that the report of the interdepartmental committee on the training of tuberculous discharged men will be ready soon after the Whitsun recess.

Major-General Sir Neville Howse, V.C., K.C.B., F.R.C.S., and Major-General Sir Robert Jones, C.B., F.R.C.S., have been appointed Knights of Grace in the Order of the Hospital of St. John of Jerusalem. The same distinction was conferred posthumously upon the late Colonel E. B. Hartley, V.C., C.M.G.

AT the meeting of the War Emergency Fund of the Royal Medical Benevolent Fund held last week, Lieut.-Colonel Sir A. P. Gould in the chair, applications for assistance were considered, and grants amounting to £1,420 made to ten persons. Applications for assistance should be made to the Honorary Secretary, 11, Chandos Street, Cavendish Square, W.1, who will also be pleased to receive donations.

DR. JOHN JOHNSTON of Bolton, who has resigned a number of public medical appointments held by him for many years, has received presentations from the officers and nursing staff of the Townleys Hospitals and Fishpool Institution, Bolton, in token of the respect and esteem in which he is regarded.

THE Ingleby Lecture of the University of Birmingham will be delivered on Wednesday, June 11th, at 4 p.m., by Dr. Walter R. Jordan, senior physician to the Children's Hospital, Birmingham. The subject of the lecture is fibrositis, rheumatism, and rheumatoid arthritis in childhood.

THE conference of the universities of the United Kingdom has requested the representatives who visit the universities of France to convey to them its cordial greetings and congratulations, and its desire for the growth and consolidation of their fraternal relations, in the interest both of humane learning and science and of international comity and progress.

THE annual meeting of the British Science Guild will be held at the Goldsmiths' Hall at 4 p.m. on Tuesday, June 17th. Among the speakers will be the president (Lord Sydenham), the Right Hon. J. E. B. Seely, C.B., M.P., Sir J. J. Thomson, O.M., President of the Royal Society, and Sir Robert Hadfield, Bt., F.R.S. Cards of admission can be obtained from the secretary, 199, Piccadilly, W.1.

THE Medical Society of London, at a general meeting on May 12th, had before it a motion to delete the by-law excluding women from attending the society either as Fellows or visitors. An amendment providing that a woman might be introduced as a visitor by a Fellow to not more than three meetings in any one session was carried. At a second general meeting, on June 2nd, this amendment was submitted as a substantive resolution, and was lost by 28 votes to 8. The proposal accordingly fell to the ground, and the by-law excluding women either as Fellows or visitors remains in force.

A MEETING of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1, on Tuesday, July 8th, at 4 p.m. After a short address by the president, Sir Alfred Pearce Gould, a discussion on alcohol and alcoholism in relation to problems of demobilization will be opened by Professor G. Sims Woodhead.

THE Moncrieff Arnott chair in Clinical Medicine in the University of Edinburgh becomes vacant during the summer, and the University and Royal Infirmary have appointed a joint committee to consider the candidates for this post. The patronage is in the hands of the University Court. The salary is £700, and, unlike the Therapeutic chair, private practice is allowed to the holder. The vacancy is due to the retirement of Professor William Russell under the age limit.

AT the congress of the Royal Sanitary Institute, which opens at Newcastle-on-Tyne on July 28th, the President, the Duke of Northumberland, will give an inaugural address. Sir Robert Hill, K.C.M.G., M.D., the new Director-General of the Medical Service R.N., will give a lecture on marine hygiene and Sir Robert Philip a popular lecture on the heritage of health. There will be five sections and a series of conferences will be held during the meeting.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Aitiology*, Westrand, London; telephone, 2531, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

"R. C." desires to hear of any medical experience of the use of cuprase in malignant disease of prostate.

A SEA HOLIDAY TO THE WEST INDIES.

"M.B.," who contemplates a trip to Jamaica, leaving England on August 14th, asks as to suitable clothing and the risk of malaria.

* * There is no danger of acquiring malaria if "M.B." stays at the main port of call. Thin clothes will be required, as the temperature in August will be high; thin cellular undershirts are probably the best. The voyage may be recommended from a health point of view.

ANTENATAL CONDITIONS AND CHILD WELFARE.

DR. GLEN DAVISON asks to be referred to recent articles on antenatal conditions affecting child welfare work.

* * Numerous articles on the subject have been published during the past four or five years, and we can only make a selection, but it will at least put our correspondent on the right road. Of articles in the *BRITISH MEDICAL JOURNAL* we may mention that by Dr. J. W. Ballantyne on the nature of pregnancy (February 14th, 1914) and two on antenatal hygiene by Dr. Amand Routh, published the one on the same date and the other on April 25th, 1914. Reference may also be made to the discussion on the registration of stillbirths at the Edinburgh Obstetrical Society, reported in our issue of June 6th, 1914. For the past three years the monthly journal, *Maternity and Child Welfare*, has reported progress in these departments of public health. Many articles have been published in America, especially, perhaps, Whitridge Williams on "Prenatal Care," in the *Journal of the American Medical Association* (January 9th, 1915), and many in the *American Journal of Obstetrics*. The reports of the Carnegie U.K. Trust on the physical welfare of mothers and children, especially that on Scotland (1917), may be consulted, as also the discussion at the Pathological Club, Edinburgh (*Edinburgh Medical Journal*, May-June, 1917).

HEXAMINE: OPIUM.

"IGNORAMUS" inquires as to (1) the action of hexamine on the cerebro-spinal fluid, and (2) the alleged bad effect of opium in affections of the kidney.

* * 1. A report on urinary antiseptics to the Science Committee of the British Medical Association by Dr. Anson Jordan was published in the *BRITISH MEDICAL JOURNAL* (1913, vol. ii, p. 648). It contained an account of a series of experiments on hexamine (hexamethylenetetramine) and some of its derivatives. It was shown that in acid urine about 10 per cent. of the drug was split up into formaldehyde. In alkaline solution no dissociation occurred, but the drug was found to disintegrate slowly in any neutral solution, yielding formaldehyde to a very small extent—about 0.05 to 0.1 per cent. It is considered probable that so readily soluble a substance permeates the tissue fluids generally, and it has been found in cerebro-spinal fluid, bile, and saliva. As all these fluids are alkaline, any appreciable antiseptic action would not be expected, but,

Dr. Jordan adds, "none the less, a faintly alkaline and ammonia-free cerebro-spinal fluid is very different to alkaline urine, and if any formaldehyde were present in it it would continue to exist and exert its action." He found that helmitol (hexamethylenetetramine-anhydro-methylene-citrate) yielded *in vitro* formaldehyde as readily under the influence of alkalis as of acids. He considered these drugs, but especially helmitol, were worth further trial in meningitis. Professor Cushny (*Textbook of Pharmacology and Therapeutics*, seventh edition, page 163) says that there is little evidence that hexamine is of benefit in affections of the central nervous system, gall bladder, or pancreas. Hexamine has been given largely in meningitis, especially cerebro-spinal meningitis, but the majority of observers seem to have been unable to convince themselves that it produces any effect.

2. With regard to opium, Cushny (*ibid.*, p. 258) observes as follows: "Morphine and opium are often said to be contra-indicated in Bright's disease of the kidney. This seems to be due to the belief that morphine is excreted in the urine, which has now been shown to be erroneous. There seems no reason to believe that morphine is harmful in these conditions, and in some forms of uraemia it has even been of considerable benefit."

CRANIUM AND PELVIS.

"A. C." writes: A small pelvis and troublesome delivery make me ask whether any careful comparison has been made with respect to the radiate evolution of the human skeleton. For example, would lower jaw or scapula be the analogue of the ilium, and from theinion to the mastoids represent the pelvic outlet? Or are there any means of judging pelvis from head or cranium?

** Undoubtedly the shoulder girdle is the homologue of the pelvic girdle; it includes the scapulae and clavicles, but has nothing to do with the lower jaw. The cranium in a rachitic subject shows characteristic defects of development, but a woman with a small non-rachitic pelvis may have a well developed skull. No formula for calculating the dimensions of the pelvis from the diameters of the skull would be of any value in practical obstetrics.

ARRANGEMENTS FOR DISPENSING BY CHEMIST.

DR. R. C. M. COLVIN-SMITH (Cromer) writes in reply to "M.D.": On the commencement of the Insurance Act in 1913 I arranged with the chemists of this town that they should do all the dispensing for the doctors on the following terms: (1) The doctors agreed to give up all dispensing of their own medicines except in cases of urgency. (2) The chemists agreed not to prescribe over the counter to any person or perform any minor surgical operation beyond "first aid." In consideration of above terms the doctors will send their prescriptions to any of the chemists who entered into this agreement, the chemist retaining the prescription as a voucher, and not allowing the patient to obtain it without the doctor's permission given in writing. The prescription to be marked "P.A." (private account). The medicines, etc., supplied to be paid for by the respective doctor on whose prescription they are dispensed and on the then scale of tariff (as agreed on by the National Insurance Commissioners). With regard to methods for avoiding complex bookkeeping, etc., I use Carlyle's duplicate prescription book, and easily check the chemists' quarterly accounts when rendered. This system has been a great success, and I have had no complaints from either doctors or chemists.

LETTERS, NOTES, ETC.

REDUCTION OF FEES OF LOCUMTENENTS.

"LOCUM" writes: Since the signing of the armistice there has, I notice, been a tendency to reduce the fees of locumtenents. Seeing that food, clothing, and house accommodation are as dear as ever, I consider this unjust, especially in the case of men, like myself, with a limited income and a complaint (rheumatism) that prevents me at times, especially in winter, from taking any active work.

PITUITRIN IN MIDWIFERY.

DR. R. ROLFE (Avonmouth, Bristol) writes, with reference to the interesting note by Dr. E. Arthur Dando (April 5th, p. 432): I have been using pituitrin for a good number of years, and am an enthusiastic advocate of it; but I have been perhaps less fortunate or less skilful than Dr. Dando in a considerably larger number of cases. I have found the following troubles, all of which are, I believe, avoidable; an account of them may be of use to practitioners who have not had experience of pituitrin.

1. Different samples of pituitrin have very different degrees of activity. I have had the best results with Burroughs, Wellcome and Co.'s infundin, but I always now use the 1 c.cm. ampoules.

2. If the injection is given too early, before the os is well dilated, there is in my opinion danger to the child from

pressure asphyxia. The obvious remedy for this is to follow Dr. Dando's advice, and wait for full or nearly full dilatation, especially in the case of primiparae.

3. On two or three occasions the uterus has contracted on the placenta, causing a very troublesome form of retained placenta. This can, I believe, be avoided by rapid removal of the placenta after the birth of the child, by expression if necessary. It is not in my opinion wise to wait for pulsation in the cord to cease before doing it. In the majority of cases the uterus itself rapidly expels the placenta.

4. I have had three very bad cases of delayed *post-partum* haemorrhage coming on about twelve hours after labour. These were, I think, caused by a clot being retained in the same manner as the placenta may be. In neither of the cases was any placenta or membrane retained. All the cases recovered, but had given me a "bad" half hour. I am now always very careful to see that clots as well as placenta are quickly removed from the uterus, and I give ergot (liquid extract 3j) immediately after the delivery of the placenta, and follow it by three or four 2-grain ergotine pills given at four-hour intervals.

I claim for pituitrin (1) that it shortens labour, thereby saving suffering to the patient and to the busy practitioner; (2) that it has reduced my forceps cases by about 50 per cent.; (3) that the patient loses very little blood; (4) that by the good contraction of the uterus "after-pains" are lessened; (5) that by the action of the pituitrin on the bowel and bladder troublesome flatus and retention of urine are avoided.

If it is true that we learn from the mistakes of others, perhaps this confession of my shortcomings may benefit someone in the profession.

RHEUMATIC TONSILLITIS.

CAPTAIN W. T. G. BOUL, R.A.M.C., M.B., Ch.B., writes: The following short account of two cases of rheumatic tonsillitis seen in India may be of some little interest:—Pte. — 8th —, aged 24, was first seen in the usual way on a Tuesday morning complaining of sore throat and pain on swallowing. The throat in the tonsillar region was inflamed and exquisitely painful to touch. The redness did not spread beyond the pillars of the fauces, nor did the tenderness. He was treated with a gargle of sodium phenate and a pint of tannic acid and glycerin. On the following morning the pain and tenderness was almost entirely confined to the left side, though the right tonsil was still swollen and inflamed. He was then treated with sodium salicylate gr. xv twice a day, and was manifestly better the next morning. After four days of this treatment he was perfectly recovered. The case of Captain —, aged 23, was very similar. At the commencement there was pain, redness, and tenderness of the right tonsil; the left appeared normal. Twelve hours later the symptoms had become transferred to the opposite side, and the right tonsil appeared almost better. A small gland in the neck was enlarged. He was treated with sodium salicylate gr. x three times a day, and aspirin gr. x each night, and eventually recovered completely. He stated that many times he had in England been subject to similar attacks of acute tonsillitis, which shifted from side to side in a remarkable manner. Owing to the shifting nature of the pain, etc., the absence in both cases of rise of temperature or pulse, and the nature of the treatment which proved beneficial, I think there can be no doubt as to the diagnosis.

MENTAL EXAMINATION OF A MURDERER.

THE man Beckett, a discharged soldier who has been sentenced to death for murdering a family in the East End of London, has been examined by Sir Robert Armstrong-Jones, Dr. W. H. B. Stoddart, and Dr. Hubert Norman. They appear to be unanimously of opinion that he is not responsible for his actions, and that he is probably a congenital mental deficient. The man gives a history of epilepsy. Representations are being made that the case should be retried in view of the evidence as to the man's state now obtained. From a perusal of the documents before us we are disposed to agree that the case ought to be reviewed.

THE following appointments of certifying factory surgeons are vacant: Letterkenny (Donegal), Malling (Kent).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE PHYSICAL STATE OF THE BLOOD SERUM IN RELATION TO ITS AGGLUTININ AND ANTIBODY CONTENT:

THE EFFECT OF FRICTION AND PRESSURE.

BY

C. J. BOND, C.M.G., F.R.C.S., HON. COLONEL A.M.S.,

HONORARY CONSULTING SURGEON, NORTHERN COMMAND; HONORARY
CONSULTING SURGEON TO THE LEICESTER ROYAL INFIRMARY;
MEMBER OF THE MEDICAL RESEARCH COMMITTEE.

Two years ago I noticed that if two separate drops of a blood serum containing haemagglutinin were allowed to dry on a slide and if one of the drops was dissolved in normal saline solution without friction, while the other was rubbed with a glass rod, the drop which had undergone solution without friction retained its full haemagglutinative capacity, but the drop which had been rubbed failed to agglutinate the red cells or did so very feebly.

Starting from this point I next investigated the effect of combined friction and pressure on certain blood serums of known haemagglutinative capacity. If a serum is ground in a mortar and the turbid liquid then centrifuged a white sediment falls, leaving a more or less clear supernatant fluid. This clear fluid is then pipetted off and again subjected to the grinding process. A second precipitate is thus obtained on centrifuging the liquid, often more rapidly and in larger volume than on the first grinding. The process of grinding, centrifuging, and pipetting off the clear fluid can be repeated a number of times with a gradual loss of volume of fluid partly due to froth formation. This frothing is more noticeable in some serums than in others. It frequently occurs at the second or third grinding with horse, ox, sheep, and some guinea-pigs' serums.

By this fractional mechanical process the constitution of the serum can be profoundly modified. A remarkable change is brought about not only in the physical condition, but also in the haemagglutinins and other antibodies. It will be convenient to describe these changes as they affect the supernatant fluid, which we may designate liquor 1, liquor 2, liquor 3, etc., according to the number of times the grinding process has been applied, and the sediment, which may be designated 1, 2, and 3, etc., in the same way.

The Liquor.

Fig. 1 illustrates the effect of subjecting horse serum which powerfully agglutinates human (C. J. B.) washed red cells and sheep's red cells to three successive fractional grinding processes. The circles represent a drop of the serum, or liquor, or sediment to which the red cells are added. The + and - signs in each circle indicate the presence or absence of agglutinating capacity, while the numbers 1, 2, 3 indicate the number of times the fluid has been ground in the mortar and the precipitate separated by centrifuging.

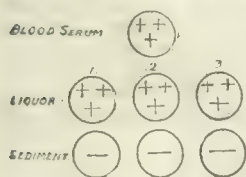


FIG. 1. — Horse serum. Reaction to human (C. J. B.) red cells.

and the precipitate separated by centrifuging.

In the case of horse's serum free haemagglutinin is found in the clear liquor after three fractional grindings, and it is absent from the sediment after this has been washed in normal saline solution and reprecipitated by centrifuging. This result with horse serum is also characteristic of human and some other animal blood serums which I have examined. In some cases the liquor may even show a higher haemagglutinin content than the blood serum from which it has been obtained; thus Fig. 2 represents a human serum (No. 13) which only contained one (+) degree of haemagglutinating capacity for (C. J. B.) red cells, whereas liquor 1 contained two (++) degrees, and liquor 2 three (+++) degrees. If the original serum contains no trace of agglutinating capacity for given red cells, then the liquors obtained by grinding it are also devoid of haemagglutinin for the same red cells. It is, however, necessary to point out that some serums if examined

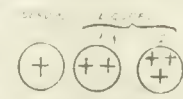


FIG. 2. — Serum 13. Reaction with C. J. B. red cells.

hastily may be set down as negative, whereas if a drop of such a serum on a slide be mixed with a measured volume of a suspension of washed red cells and gently agitated, and then allowed to stand for some time, a trace of agglutinative action will be seen on gentle re-agitation, and such a serum must not be recorded as negative.

This raises the important question of the specificity of the haemagglutinin reaction.

Specificity of the Haemagglutinin Reaction in Blood Serums and Liquors after Grinding.

The clumping of appropriate red cells by normal untreated blood serum is, of course, a highly specific reaction, and the specificity has a practical application in the selection of donors and recipients belonging to appropriate groups in the operation of blood transfusion. It is important to find, therefore, that, in liquors obtained by subjecting such serums to the fractional grinding process, the haemagglutinin reaction retains its specific character. This is true as a general statement; it is possible, however, that as the result of standing, or more rapidly by mechanical treatment, the specificity may be reduced and a serum or liquor may become agglutinative to certain red cells to which it formerly only showed a trace of agglutinative action. This specific character is shown by the non-agglutinating serum 2 and the powerfully agglutinative serum 11 (see Figs. 3 and 4). In serum 2

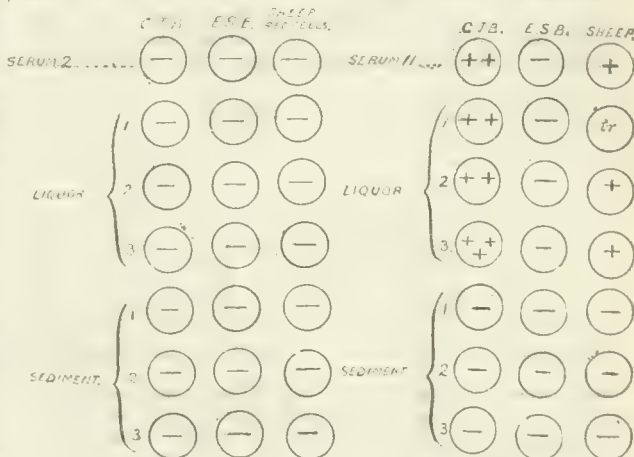


FIG. 3.

FIG. 4. — Serum 11.

the - agglutinating quality appears in both liquors and sediments in relation to human (C. J. B. and E. S. B.) and to sheep's red cells. Serum 11, on the other hand (see Fig. 4), agglutinates C. J. B. red cells two (++) degrees, sheep's red cells one (+) degree, and E. S. B. red cells - degree.

Here the specific action of the haemagglutinin reaction is shown in the liquor in differential relation to these three varieties of red cells.

Increase of Haemagglutinin Capacity on Standing.

It will be observed that in serum 11 (Fig. 4) the haemagglutinin content increases in the liquor as the fractional grinding process proceeds. Liquor 3 shows a higher agglutinating capacity to C. J. B. red cells than the untreated serum. This heightening of agglutinin content in a serum by mechanical treatment was also previously recorded in Fig. 2 (serum 13), and it is on a par with what occurs in some serums as the result of standing. Thus serum 17, marked as negative (but which may have contained a trace of agglutinin to C. J. B. red cells), was pipetted off the blood clot and allowed to stand at room temperature for seven days. When retested it gave a (+) reaction with the same red cells. The same kind of change which tends to occur slowly in a serum as the result of standing is brought about more rapidly by the mechanical effect of friction and pressure. The grinding process seems to set free a certain amount of locked-up haemagglutinin and at the same time separates out a solid residue in the form of a sediment which is non-agglutinative.

The Sediment.

In the case of nearly all blood serums so far submitted to the fractional mechanical process, the sediments obtained on centrifuging the rubbed serum up to the third and even the sixth term have failed to give any haemagglutinin reaction with appropriate red cells.

The various sediments have been washed one or more times in normal saline solution, in which they are very sparingly, if at all, soluble, and a drop of the suspension mixed with the washed red cells on a slide.

This presence of free haemagglutinin in the liquor and its absence in the sediment is in striking contrast to what we find in the case of transudates, exudates, and other body fluids.

Chemical Composition of the Sediment.

The chemical composition of the sediment obtained by grinding the blood serum requires a more elaborate chemical investigation than I have yet been able to give to it. It gives a blue, not violet, colour with the xantho-proteic test, and only a faint trace of black coloration (lead sulphide) with Molisch's test. There is no reduction with Fehling's solution, and the sediment is not appreciably soluble in ether or chloroform, nor does it stain black with osmic acid.

Transudates, Exudates, Secretions, and Excretions.

As a general statement it is true to say that peritoneal and pleural effusions, cerebro-spinal fluid, and lymph frequently fail to give any free haemagglutinin even when obtained from patients whose blood serum shows

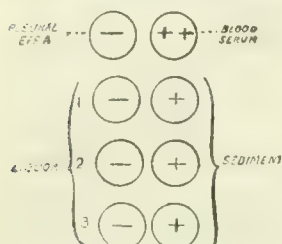


FIG. 5.—Pleural effusion A.

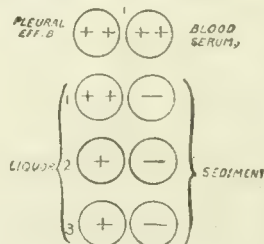
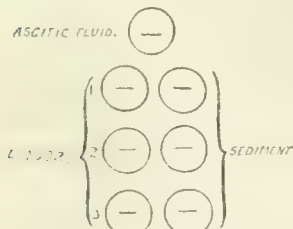
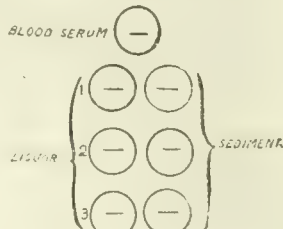


FIG. 6.—Pleural effusion B.

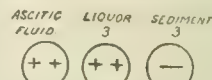
two or more degrees (++) of agglutinative capacity. This is true of pleural and peritoneal effusions of low specific gravity, free from any considerable cellular element, and secreted without marked inflammatory reaction. The following examination of a serous fluid removed by aspiration from the chest of the same patient at an interval of six weeks illustrates this point.

Effusion (a) was a pale watery fluid of low specific gravity, removed from a patient, A. W., whose blood serum was (++) to C. J. B. red cells. The fluid itself gave a (-) reaction with the same red cells. When ground in a mortar, liquors 1, 2, and 3 contained no free haemagglutinin, while the corresponding sediments 1, 2, and 3 showed (+) degrees with the same red cells (see Fig. 5). Six weeks later a second aspiration withdrew a yellow fluid of higher specific gravity closely resembling blood serum. This gave a different result on grinding (see Fig. 6). This second effusion agglu-

FIG. 7.—E. J. ascitic fluid.
C. J. B. red cells.FIG. 8.—E. J. blood serum.
C. J. B. red cells.

tinated (++) C. J. B. red cells, and the liquors 1, 2, and 3 obtained from it were also agglutinative, while the corresponding sediments gave no reaction. Thus the haemagglutinin existed in these two serous fluids in quite different conditions. The first, which resembled a transudate, contained no free haemagglutinin, but haemagglutinin was

recovered from the sediment. In the second fluid, which resembled a blood serum, haemagglutinin was present in the free state in the untreated fluid, and was recovered from the liquor but not from the sediment. I think this is a suggestive fact and one which bears on the problem of the changes undergone by blood plasma when it passes out of the capillaries and comes in contact with the tissue cells. The haemagglutinin ceases to exist in the free state in this altered fluid though it remains in some (at present unknown) combined form, and can be recovered again in the free state by subjecting the fluid to a mechanical process which includes friction and pressure. As a general rule haemagglutinin cannot be recovered from the liquor or sediment of fluids obtained from individuals whose blood serum contains no haemagglutinin. A sample of ascitic fluid from a patient whose blood serum was negative to C. J. B. red cells was itself negative, and Figs. 7 and 8 show the result obtained respectively from the blood serum and the ascitic fluid in this case. On the other hand, a peritoneal effusion poured out during an acute reaction to an infective process in another patient gave a (++) result in the liquor and a (-) result in the sediment. (See Fig. 9.)

FIG. 9.—B. D. ascitic fluid.
C. J. B. red cells.*The Cerebro-spinal Fluid.*

If we regard the cerebro-spinal fluid as the lymph of the brain and as blood plasma altered by the action of the endothelial cells of the choroid plexuses and the serous meninges, it is interesting to find that when subjected to the fractionating grinding process this fluid obeys the rule which we have found to apply to other exudates. I have investigated by this method the cerebro-

FIG. 10.—Blood serum and cerebro-spinal fluid, same patient.
C. J. B. red cells.

spinal fluid and the blood serum from the same individual. The blood serum was positive (8 doses) and the cerebro-spinal fluid negative to the Wassermann test. The blood serum agglutinated (+) C. J. B. red cells while the cerebro-spinal fluid gave a (-) result. (See Fig. 10.) The blood serum of this patient when treated by the grinding process resembled normal blood serum and gave a (+) in the liquor and a (-) in the sediment. The cerebro-spinal fluid in the same individual, on the other hand, which was (-) to C. J. B. red cells in the untreated condition, gave a (+) sign with the same red cells in the sediment and a (-) sign in the liquor.

Non-specificity of the Haemagglutinin Reaction in Exudates and Secretions.

We have already seen that when a blood serum is submitted to the grinding process the haemagglutinin which

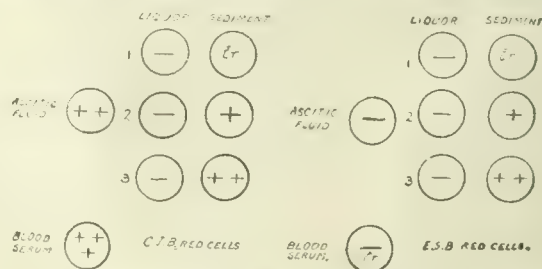


FIG. 11.—B. W. ascitic fluid. Reaction with C. J. B. and E. S. B. red cells.

is recovered from the liquor preserves (for the most part) its specific character. That is to say, it only agglutinates such varieties of red cells as are agglutinated by the corresponding untreated serum. This specificity of reaction frequently disappears when transudates, exudates, and other body fluids are submitted to the grinding

process. For instance, a sample of ascitic fluid obtained from a patient with heart disease was examined by this method. It was found to be (++) to C. J. B. red cells and (-) to E. S. B. red cells. The blood serum of this patient showed (+++++) to C. J. B. red cells and a trace only to E. S. B. red cells. When this ascitic fluid was submitted to three fractional grindings the haemagglutinin recovered from the sediment showed the same degree of agglutinative capacity to both kinds of red cells. Fig. 11 illustrates this result.

The Saliva.

A haemagglutinin has been recovered from the sediment obtained by submitting salivary fluid to the grinding process. This recovered haemagglutinin agglutinated certain varieties of red cells which were not agglutinated by the blood serum of the same individual. There was, however, some evidence of a partial specificity in the reaction because the agglutination was delayed and less complete with these incompatible red cells than with other red cells which were agglutinable by the blood serum of the patient.

Mucus.

It is of interest to find that haemagglutinin can be obtained from the sediments when nasal mucus is submitted to the grinding process. This bears on the important problem of the agglutinin and antibody content of mucus and of the part played by the mucous secretions in combating invasion by pathogenic organisms.

Milk.

I have submitted samples of human, sheep's and cow's milk to the fractional grinding process. The results are of considerable interest and will, I hope, be dealt with more fully in a later communication. A sample of human milk was obtained from a patient whose blood serum was known to be (++) agglutinative to human (C. J. B.) and sheep's red cells. The milk was first centrifuged and the supernatant cream removed, the milk minus the cream then showed (+) agglutination to the same red cells. Some of the slightly turbid yellow fluid was then submitted to the grinding process and three successive liquors

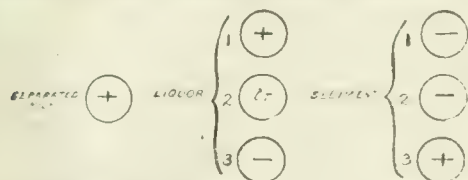


FIG. 12.—Human milk. Reaction with C. J. B. red cells.

and sediments were obtained. Fig. 12 shows (+) haemagglutinin in liquor 1, a trace only in liquor 2, and (-) in liquor 3. The corresponding sediments show (-) haemagglutinin in sediments 1 and 2, and (+) in sediment 3. This corresponding descent and ascent of haemagglutinin content in liquor and sediment is important, and suggests that a passage of haemagglutinin from the combined to the free state takes place as the mechanical treatment proceeds. Speaking generally, we may say that human milk, as a secretion, stands midway between blood serum on the one hand and an exudate like lymph on the other, from the haemagglutinin point of view. One point of considerable practical importance came out in the course of this investigation. Boiling destroys all the haemagglutinin in human milk, whereas pasteurization—that is, the subjecting of the milk to a temperature of 60° C. for forty minutes—does not affect the haemagglutinin content as far as the reaction to human (C. J. B.) red cells is concerned, although it reduces the power of clumping sheep's red cells.

It is interesting to note also that the haemagglutinins do not disappear from human milk when preserved for a considerable time, provided the cream has been removed by separation. A sample of centrifuged separated human milk which had remained in a plugged sterile test tube for six months at room temperature gave when tested (++) of haemagglutinative capacity to human and sheep's red cells.

It is interesting to compare sheep's milk and cow's milk

with human milk from the haemagglutinative point of view. So far, samples of centrifuged separated milk from these animals have given (-) results with human (C. J. B. and E. S. B.) red cells. When the milk was ground, traces only appeared in sediments 2 and 3 in cow's milk, but we must not forget the factor of individual difference. Some sheep's blood serums are (+) and some (-) to the same red cells, and the same may be true of the blood serums, and possibly the milk of cows.

If later investigation should confirm the fact that, on the whole, cow's milk contains less haemagglutinin capable of acting on human red cells than human milk, a further contribution will be added to the comparative study of human and cow's milk. The destruction of the haemagglutinins by boiling but not by pasteurization has not, as far as I can ascertain, been recorded previously. I do not find it mentioned in Dr. Lane-Clayton's book on *Milk in its Hygienic Relations*.

Excretions: the Urine.

Urine may be regarded as the type of a body fluid in which excretory largely replace secretory characters.

Urine probably contains (in a degraded form) waste products of the metabolic activities of body cells of all kinds. Hence it is a matter of interest to find that the haemagglutinin in sediments obtained by submitting urine to the grinding process lose their specific character. That is to say, they no longer only agglutinate such red cells as are agglutinated by the corresponding blood serum. Fig. 13

	C. J. B.	E. S. B.	SHEEP
BLOOD SERUM.....	(-)	(-)	(-)
LIQUOR {	1. (-)	(-)	(tr)
	2. (-)	(-)	(tr)
SEDIMENT {	1. (+)	(+)	(+)
	2. (+)	(+)	(+)

FIG. 13.—Normal urine. Reaction with C. J. B., E. S. B., and sheep's red cells. From an individual with blood serum negative to same red cells.

illustrates the result in a normal urine from an individual whose blood serum was (-) to C. J. B., E. S. B., and sheep's red cells. In this urine sediments 1 and 2 show (+) to all these varieties of red cells; the corresponding liquors, on the other hand, are (-), though they give a trace of reaction to sheep's red cells. We may now compare with this healthy urine an albuminous urine from a patient with acute nephritis (see Fig. 14). The blood serum of this patient contained a trace only of agglutinin to C. J. B. red cells and was (+) to sheep's and (-) to E. S. B. red cells. Liquor 3 gave a (-) result with C. J. B. and E. S. B. red cells, but (+) result with sheep's red cells, to which the blood serum of the patient was also (+). Sediment 3 gave (++) with C. J. B., (++) with sheep's, and (+) with E. S. B. red cells.

	C. J. B.	E. S. B.	SHEEP	L.M.
BLOOD SERUM.....	(tr)	(-)	(+)	(-)
LIQUOR 3.....	(-)	(-)	(+)	(-)
SEDIMENT 3.....	(++)	(+)	(++)	(+)

FIG. 14.—Albuminous urine (L. M.); acute nephritis.

In the *BRITISH MEDICAL JOURNAL* of March 2nd, 1918, I suggested that the diminution of haemagglutinin content observed in the blood serums of some cases of trench nephritis might be due to a leakage of the haemagglutinin with the globulins and serum albumin escaping in the urine.* It is of interest, therefore, to find some slight indication of specificity of action in the haemagglutinin obtained by grinding the albuminous urine from a patient with nephritis. Thus liquor 1 resembles the blood serum and is (+) to sheep's red cells, and although the haemagglutinin from sediment 3 is (+) instead of (-) to E. S. B. red cells, the reaction is less rapid and complete than with C. J. B. or with sheep's cells, to both of which the blood serum of the patient is more positive.

The fact that the sediment obtained by grinding both a normal and an albuminous urine is capable of

* Since this was written free haemagglutinin, specific in character, has been demonstrated in specimens of albuminous urines from two cases of nephritis.

agglutinating the red cells of the individual secreting the urine shows the extent to which the specificity of the reaction has been lost. (See Fig. 14.) At first sight this seems to prove too much, and suggests that the factor, whatever it be, in the sediment which clumps the native red cells is merely an accidental product of the grinding process, and that it has no real relation to haemagglutinins pre-existing in the blood serum, inasmuch as it occurs in the urines of individuals with non-agglutinating as well as with agglutinating blood serums. There are, however, certain facts which suggest that the haemagglutinins recovered from these urines by grinding do bear some relation to haemagglutinins pre-existing in the blood serum of these individuals either in the free or a locked-up state. The appearance of haemagglutinins in blood serums on standing and the increased volume in the liquor of a ground serum suggest that the difference between a non-agglutinating and an agglutinating serum is not due to the entire absence of haemagglutinin in the former but to the fact that it exists in a combined or locked-up form in which it cannot exercise any effect on the red cells until liberated by certain chemical changes which take place on standing or by the grinding process.

Further, if the haemagglutinins which appear in the liquor or sediment when a blood serum or exudate is ground are only the accidental result of the grinding process then they should appear equally in all liquors and sediments. But they are absent from the liquors and sediments obtained by grinding blood serums and exudates from individuals whose blood serums show no trace of any haemagglutinative action on any red cells. There is evidence to show that the blood serum of every individual contains haemagglutinins of one kind or another. Thus my own blood serum has failed to agglutinate the red cells of some hundreds of individuals with whom it has been tested. It belongs to group 4. At the same time my blood serum strongly agglutinates the washed red cells of the pigeon. Hence we are not justified in assuming that the haemagglutinins which appear in the sediments of a ground urine are entirely new products which bear no relationship to haemagglutinins existing in the blood serum of the same individual in a combined form. It is true haemagglutinins of a non-specific kind appeared in sediment 3 of a normal as well as an albuminous urine, but in these cases also the first and second sediments contained no haemagglutinin. On the whole, therefore, I am inclined to think that the non-specific haemagglutinin recovered from urine mechanically treated does bear some relation to a haemagglutinin previously existing in the blood serum in a combined and inactive form. If, on the other hand, it should eventually prove to be possible to produce *de novo* a substance having non-specific haemagglutinative activity in a fluid like the urine by submitting it to friction with pressure, an important point will have been ascertained and one which may be useful in differentiating certain abnormal from normal urines. A word is necessary at this stage concerning the part taken by the sediment in the haemagglutinin reaction. Everything points to the fact that the sediment itself contains no haemagglutinin, but that these substances are locked up in, and are carried down with, the precipitate when the ground liquid is centrifuged. On standing for some time in normal saline solution a sediment may give off haemagglutinin, the clear solution when pipetted off being actively haemagglutinative. Thus the normal saline solution in which sediment 3 from the albuminous urine had stood for four days was (+) to sheep, (+) to E. S. B., and (trace) to C. J. B. red cells. The sediment obtained by grinding a blood serum or an exudate also probably acts as a carrier only of haemagglutinin.

The Effect of Grinding on the Complement Content in Guinea-pig's Serum.

Dr. Mackarell, pathologist to the Leicester Royal Infirmary, has kindly tested with a suitable haemolytic system several samples of serum from different guinea-pigs for complement content after treatment by the grinding process. The following are the details of one such experiment. A sample of guinea-pig's serum was divided into two volumes, A and B. Volume A was submitted to three fractional grindings, and liquor 3 and sediment 3 were each tested for complement content, with the following result:

Liquor 3 (diluted 1 in 3):

0.005 c.cm.	...	No haemolysis
0.01 "	...	Partially haemolyzed
0.015 "	...	Wholly haemolyzed
0.02 "	...	Wholly haemolyzed

Sediment 3 in normal saline solution:

0.1 c.cm.	...	No haemolysis
0.2 "	...	No haemolysis
0.3 "	...	No haemolysis
0.4 "	...	No haemolysis

Volume B, the untreated control serum (diluted 1 in 3), gave:

0.005 c.cm.	...	Almost complete haemolysis
0.01 "	...	Complete haemolysis
0.015 "	...	Complete haemolysis
0.02 "	...	Complete haemolysis

This result, confirmed by other tests, shows (1) that a slight diminution of complement occurs in a guinea-pig's serum when submitted to the mechanical effect of friction and pressure; it also shows (2) that the complement (like the haemagglutinin) passes over in the liquor and is not attached to or precipitated with the sediment.

The Effect of the Grinding Process on Syphilitic Blood Serums.

Dr. Mackarell has also kindly investigated the effect on the complement deviating factor of submitting positive serums to the fractional grinding process. In a number of serums positive (over ten doses) as tested by the Wassermann test, the liquor up to the third term retained its complement deviating power, while the corresponding sediment was negative. Evidently the substance or substances, whatever these may be, in the syphilitic serum which have to do with complement deviation are not thrown down with the precipitate when such a serum is ground in a mortar; they pass over with the liquor. One sample of negative serum was submitted to the grinding process in order to ascertain whether any complement deviating substance was produced; the result, however, was negative.

The Effect of Grinding on the Bacterio-agglutinin Content of a Blood Serum.

Captain Heath, R.A.M.C., pathologist to the 5th Northern Hospital, has kindly tested a number of blood serums which had previously been submitted to the grinding process to ascertain: (1) Whether any effect had been produced in the agglutinating titre of the serum so

DILUTION OF SERUM	1:10	1:20	1:40	1:80	1:160	1:320	1:640	1:1280	1:2560	1:5120	1:10240
CONTROL SERUM	+	+	+	+	+	+	+	+	+	+	+
GRINDED SERUM	+	+	+	+	+	+	+	+	+	+	+
CONTROL SERUM	+	+	+	+	+	+	+	+	+	+	+
GRINDED SERUM	+	+	+	+	+	+	+	+	+	+	+
CONTROL SERUM	+	+	+	+	+	+	+	+	+	+	+
GRINDED SERUM	+	+	+	+	+	+	+	+	+	+	+

FIG. 15.—Shows increase in agglutination titre in polyvalent Flexner Y serum, produced by grinding.

treated, and (2) whether the bacterio-agglutinins present in the serum still retained their specific character. Fig. 15 represents in tabular form the result obtained in a polyvalent Flexner Y serum, R.A.M. College, dilution 1 in 100,

DILUTION OF SERUM	1:40	1:100	1:160	1:250	1:400	1:640	1:1000	1:1600	1:2500	1:4000
CONTROL SERUM	+	+	+	+	+	+	+	+	+	+
GRINDED SERUM	+	+	+	+	+	+	+	+	+	+

FIG. 16.—Stock paratyphoid B serum.

titre 1 in 4,000. Fig. 16 gives the result in a paratyphoid B serum. From these and other examples it seems clear that by submitting a serum to a mechanical process like grinding it is possible to cause (1) a marked increase in agglutinating capacity to certain organisms. This increase may amount in some cases to 100 per cent. when compared with the untreated serum. (2) This increase in agglutinative capacity is specific in character. The agglutinating titre of the treated serum to other species of organisms is not raised above that of the control serum. (3) The agglutinating substances pass into the liquor and are not precipitated with the sediment. In the experiment recorded the serums were submitted to three fractional

grindings and liquor 3 and sediment 3 tested for agglutinin content against the untreated or control serum. In each case the titre of the liquor was markedly increased, while that of the sediment and the normal saline solution in which the sediment was suspended was considerably below that of the control serum.

GENERAL CONCLUSIONS.

The above observations seem to show that by submitting blood serum and other body fluids to a mechanical process, which includes friction combined with pressure, physical changes can be brought about in these fluids which throw some light on the condition in which haemagglutinins, bacterial agglutinins, complement, complement deviating substances, and antibodies exist in the blood serum. They suggest that the blood serum and the body fluids, the secretions and excretions, form a graded series with the blood serum at one end, and the excretions, such as the urine, at the other. The haemagglutinins seem to be present for the most part in a free state in the blood serum, and in a more or less combined form in the transudates and exudates, while in excretions, like the urine, the haemagglutinins when liberated and recovered in the free state are found to have lost their specific character. This is shown by testing the agglutinative capacity of the fractional series of liquors and sediments to the same varieties of washed red cells. Not only do the haemagglutinins show marked differences of composition in the different liquors and sediments, but they also vary according to the extent to which the fluid has been submitted to the mechanical fractional process. This is also true of the bacterial agglutinins contained in blood serum, and it has been found possible by these means to considerably increase the agglutinating titre of a blood serum to a given organism while retaining at the same time the specificity of the reaction. This suggests that it may be possible to raise the agglutinating capacity of a serum by a mechanical process *in vitro* for therapeutic purposes. These observations also show that the complement deviating factor in positive syphilitic serums passes over along with the haemagglutinins and bacterial agglutinins into the liquor, and is not thrown down with the sediment.

A word must be added about the relative leuco-toxicity of the liquors and sediments obtained by the fractional grinding treatment of blood serums and body fluids. In the *BRITISH MEDICAL JOURNAL*, December 8th, 1917, and January 11th, 1919, I drew attention to the fact that some blood serums are far more toxic to the leucocytes of some individuals than to those of other persons, my own (C. J. B.) leucocytes being taken as a standard. Thus, if a drop of the serum to be tested is incubated in a closed cell with a drop of whole (C. J. B.) blood, the effect of the foreign serum on the vitality of the leucocytes can be ascertained. Emigration from the clot, capacity to elaborate iodophil substances and phagocytic activity are taken as the standard of vitality. I find that out of 60 different blood serums from different individuals 13 were very toxic, 25 were slightly toxic, and 42 were non-toxic to my own leucocytes. In practically all cases the sediment is markedly toxic, while the liquor may or may not be toxic to the same leucocytes. In a few cases the liquor obtained by grinding a toxic serum has become non-toxic to the same cells. This problem of the leuco-toxicity of different blood serums is of considerable practical importance in regard to the operation of blood transfusion and vaccine and serum therapy. From some recent observations I am inclined to regard horse serum as markedly toxic to the leucocytes of certain individuals, and this fact may have some reference to the varying liability to serum sickness shown by different individuals.

Finally, while I am fully aware of the incomplete character of these observations, I think that they show the great importance of certain physical factors—for instance, friction and pressure—in relation to the antibody content of the blood serum and other body fluids. I am hopeful that the treatment of these fluids by a mechanical process which combines friction and pressure may open up a road for the further investigation of the biochemistry of the blood serum.

A FULLY equipped hospital, to be maintained by the French Government, has been opened at Athens by the French Minister.

A REPORT ON TWO CASES OF ENCEPHALITIS LETHARGICA.

BY

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AND

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The disease which has been termed "encephalitis lethargica" appears to have been first observed in Vienna during the winter of 1916-17, and thirteen cases have been described by C. von Economo.¹ It does not appear that any connexion between these cases and an epidemic of influenza was observed, but the two cases described below are of interest on account of their occurrence during the epidemic of influenza in October, 1918, and also because the micro-organism found in the cerebro-spinal fluid in both cases was not the diplo-streptococcus found by von Eisner in an ape infected by material from some of these cases in the Vienna epidemic.

The micro-organism found by one of us (J. R. C.) appeared to be morphologically identical with that which was found in the blood, sputum, pleural fluid, and cerebro-spinal fluid in cases of influenza, trench fever, and nephritis among British troops in France during the autumn of 1917 and the spring and summer of 1918, described by Major-General Sir John Rose Bradford, A.M.S., Captain E. F. Bashford, R.A.M.C., and Captain J. A. Wilson, R.A.M.C., in their "preliminary report on a 'filter-passing' virus to the Director-General Medical Services, British Armies in France."² The filter-passing Gram-positive organism described by these observers as having been found in cases of encephalitis lethargica is regarded by them as allied to that which has been isolated in cases of polyneuritis, but it does not appear that this organism has been found in cases of typical influenza followed by encephalitis lethargica.

Both of the cases described below were admitted as influenza in which pneumonia supervened prior to the onset of cerebral symptoms.

CASE I.

Pte. W. H. L., aged 22, was admitted to the Military Hospital, Fargo, Salisbury Plain, on October 19th, 1918, from Southern Command Malaria Centre, Larkhill, where he had been undergoing treatment for malaria contracted at Salonica.

He was very ill on admission, with severe headache, pains in limbs, and generalized bronchopneumonia; the temperature was 103°. He was given 5 c.cm. polyvalent vaccine (*B. influenzae*, *Streptococcus longus*, and *Micrococcus catarrhalis*). Some improvement was noted, and the vaccine was repeated at intervals of three or four days, but the headache persisted and the temperature oscillated between 100° and 103°. The spleen was not palpable, and blood films were examined for malarial parasites, as it was thought that the persistent fever might be due to malignant tertian malaria. No malarial parasites were found. The patient became very emaciated, he was somnolent, and lay curled up in bed with head retracted. When awake he complained of persistent severe headache, and it was thought that he might be suffering from acute tuberculosis with meningitis. The pupils were equal, dilated, and reacted sluggishly to light. The optic discs were normal, and no choroidal tubercles could be seen. A differential blood count showed no lymphocytosis, but, on the contrary, there was a distinct leucopenia. The relative proportion of white cells being normal—but the total number was only 12,000 per c.cm. on admission—this was regarded as pointing to chronic malaria, and quinine hydrochlor. gr. xx was given thrice daily, without benefit.

On October 29th the temperature rose to 104°, pulse rate 110, respiration rate 24; rigidity of neck and Kernig's sign were present. The latter symptoms persisted until November 6th, when lumbar puncture was performed, but the cerebro-spinal fluid was normal.

November 16th. The condition had improved since November 6th, but there was persistent pyrexia.

November 20th. Dullness left apex and upper lobe and apex of lower lobe, crepitations and tubular breathing. Curvature of spine in dorsal region.

November 26th. The tubercle bacillus was not found in the sputum, and x-ray examination revealed no sign of tuberculosis in the chest. Blood count:

Reds	4,000,000
Whites	5,000
Hæmoglobin content	80 per cent.
Colour index	1
Mast cells	0.5 per cent.
Polymorphonuclears	79
Eosinophils	5
Small lymphocytes	5
Large lymphocytes	15
Transitionals	0.5

On January 2nd, 1919, Captain E. J. Coombe took over the case. The patient lay in a lethargic state, curled up; the head was retracted; very wasted. When awakened was fairly intelligent, but he fell asleep immediately he was left alone. No convulsions; no "cephalic cry." Intense pain on moving head, slight headache at times. Pupils widely dilated. Paralysis of lower limbs, incontinence of urine and faeces. Ophthalmoscopic examination (artificial dilatation of pupils not necessary): Optic disc pale; blood vessels engorged. Diagnosis: Encephalitis lethargica.

On January 3rd lumbar puncture was performed, and 20 to 30 c.cm. fluid withdrawn; it was under great pressure, milky, and somewhat opalescent. Ten grains of urotropin in 10 c.cm. of physiological salt solution were injected into the spinal canal. The patient improved somewhat after the lumbar puncture, and on January 5th was less lethargic.

January 6th. Report on cerebro-spinal fluid: Milky; 20 c.cm. centrifugized gave a greenish deposit $\frac{1}{2}$ in. in depth. Polynuclear leucocytosis of 1,000. Stained films (Gram and Leishman) showed a minute coccus Gram-positive, chiefly extracellular, but occurring occasionally intracellularly; usually diplococci and having apparently no capsule. Seen also in short chains of 3 to 5 cocci. All attempts at growth on agar, blood serum, Loeffler's serum, and haemoglobin agar failed. Anaerobic cultures could not be tried as the laboratory has not the equipment.

On January 9th it was noted that the patient slept continuously and was unable to speak when awakened. Lumbar puncture: fluid under pressure less than before; 15 to 20 c.cm. withdrawn and 10 c.cm. saline solution containing 10 grains urotropin in solution injected. The patient collapsed with respiratory failure. Ether was injected and artificial respiration performed for thirty minutes before respiration was restored. Urotropin gr. 10 was ordered thrice a day. The condition remained almost unchanged. On January 12th the cerebro-spinal fluid from lumbar puncture was almost clear; a minute deposit on centrifugization. Stained films showed few pus cells present and no cocci.

On January 15th the lethargic condition was less pronounced; he was able to say "Yes," and recognized people when awake. The paralysis and incontinence had not improved. From this date the patient gradually sank, the bronchitis increased, and he died on January 29th, 1919. Permission for autopsy was refused.

CASE II.

Pte. J. M., aged 16 years, one month's service, was admitted to Fargo Military Hospital, Salisbury Plain, on October 27th, 1918. Temperature 103°, pulse 104, respirations 32. He complained of headache, pains in the abdomen and limbs, and frequent cough.

October 28th. Coarse râles at bases of both lungs. Symptoms of early consolidation at the right base. His condition on October 30th was unchanged, and 5 c.cm. polyvalent vaccine was given.

On November 10th he complained of pains in head and joints, and became very collapsed and pulseless. Hypodermic injection of strychnine (gr. $\frac{1}{3}$) given. Vomited brown fluid. Marked retraction of head and rigidity of neck (*tache cérébrale*). Kernig's sign present; 0.5 c.cm. vaccine given. Ice-bag to head. There was slight improvement on November 12th. He was conscious, had no headache, and no vomiting. Kernig's sign still present. Rigidity of neck persisted; complained of intense headache.

November 15th. Sputum purulent; cough loose; moist râles all over both lungs. Headache less severe.

November 18th. Headache improving. Answers questions intelligently. Moist râles all over both lungs.

November 19th. Kernig's sign still present. Dullness at right base and left upper and lower lobes. On November 21st 10 c.cm. antistreptococcic serum were given.

December 3rd. He has periodic attacks of severe occipital headache, with occasional attacks of vomiting. Has become very emaciated. The temperature varies between 101° and 104°.

December 5th. Vomiting of "cerebral type." Persistent severe headache. "Cephalic cry." Knee-jerks sluggish. No ankle clonus.

January 2nd, 1919. Temperature 101°, pulse 108, respirations 24. Patient emaciated. Pupils dilated, reacting sluggishly to light. Head retractions. Complaints of frequent headache. Slightly drowsy, but intelligent. Intense pains on moving neck. Incontinence of urine and faeces. Occasional "cephalic cry." Ophthalmoscopic examination: Pale disc; engorged vessels; pupils dilated sufficiently for examination. Calomel gr. $\frac{1}{2}$ thrice a day was ordered.

January 3rd. Lumbar puncture; fluid under pressure; 20 c.cm. withdrawn and 10 c.cm. saline solution containing 10 gr. urotropin injected. The cerebro-spinal fluid was colourless. The fluid was examined on January 6th. It was clear, and contained a few polynuclear leucocytes, but no lymphocytes. Stained Gram and Leishman. A few minute cocci were seen, Gram-positive, generally extracellular, sometimes intracellular; no capsule observed; usually diplococcus but sometimes in short chains, 3 to 5 cocci. The patient improved after lumbar puncture. Temperature 99°, pulse 104, respirations 24. Headaches less frequent. Paralysis and incontinence as before. Appetite good.

January 9th. Lumbar puncture; fluid under pressure and milky; 10 c.cm. saline solution containing 10 gr. urotropin injected. Urotropin gr. 10 thrice a day was ordered. On January 12th he was better, and wanted to get up, had no headaches and less pain on moving the head. Paralysis and incontinence

remained. Stained films from the cerebro-spinal fluid showed many pus cells and no cocci. On January 16th the condition was unchanged; but on January 21st he was very lethargic, inarticulate, and very emaciated. Incontinence of urine and faeces persisted, and he had difficulty in swallowing fluids.

February 3rd. Died. Permission for autopsy was refused.

The symptoms in both patients exhibited a remarkable similarity.

The persistent headache and head retraction suggested tuberculous meningitis, but there was no paralysis of cranial nerves, and the differential blood counts showed no lymphocytosis. One common symptom was the widely dilated pupils, at first reacting sluggishly to light, but later there was no sign of contraction, even during examination of the fundi. The appearance of the fundi in both cases was remarkable; instead of the usual signs of the onset of optic neuritis the discs in both were somewhat pale, with clearly defined edges and marked congestion of the retinal veins. The patients, when not suffering from severe headache, were so lethargic that they hardly seemed conscious that the fundus was being examined, and on one occasion Pte. M. was found to be soundly asleep at the conclusion of the examination.

Pte. L. showed, in the earlier stages of the disease, more pronounced symptoms of cerebral irritation than Pte. M. He lay curled up on his left side with his head beneath the bedclothes, but in the later stages both lay on their backs, sleeping quietly. At no time was stertorous breathing observed in either case, nor did either patient suffer from convulsions. Paraplegia and incontinence of urine and faeces supervened at an early stage in both cases and persisted until death.

Lumbar puncture gave temporary relief from headache in both cases, but, as already noted, Pte. L. had respiratory failure on one occasion after removal of 15 to 20 c.cm. of fluid and injection of 10 c.cm. normal saline solution containing 10 grains urotropin. This treatment was tried as a last resort in the hope that it would destroy any infective organism. The fact that urotropin is inert in neutral or alkaline media makes it improbable that it would have any action on micro-organisms suspended in the cerebro-spinal fluid.

The onset of encephalitis lethargica in two typical cases of influenza suggests that the minute Gram positive coccus isolated by Captain J. A. Wilson in cases of influenza and the apparently identical organism found by one of us (J. R. C.) in both of these cases, is the probable cause of encephalitis lethargica, as well as of the other diseases enumerated in the preliminary report. Subsequent lumbar punctures showed no trace of this coccus, or the cerebro-spinal fluid would have been sent to a larger laboratory for more detailed investigation.

It is recognized that in the absence of *post-mortem* observations and of any result from the attempts to obtain cultures of the coccus this report is incomplete, but the unusual clinical symptoms which appear to differentiate this disease from various forms of meningitis and from other types of encephalitis may assist in the diagnosis of other cases.

REFERENCES.

¹ Von Economo, C.: *Die Encephalitis Lethargica*. Leipzig: Franz Deuticke, 1918. ² BRITISH MEDICAL JOURNAL, February 1st, 1919, p. 127.

HYPNOSIS, SUGGESTION, AND DISSOCIATION.

BY

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THERE is an overwhelming consensus of opinion at the present day that the one satisfactory method of treating the various forms of functional nervous disorder is that of mental analysis and re-education. The physician endeavours to unravel the tangled emotional skein of the patient's past life, as well as the emotional circumstances which ushered in the disease in its manifest form. He reveals mental conflicts and misunderstandings of the past, and mal-adaptations to the present, which he then helps the patient to correct and to solve. He demonstrates the causal connexion of these mental antecedents with the physical or mental symptoms from which the patient is suffering. He thus helps the patient to understand

himself, practically as well as theoretically. When this understanding is complete and is acted upon by the patient, the latter is cured.

To sum up this method, I would suggest the term "autognosis," or self-knowledge. It embraces the two conceptions of analysis and re-education, and is free from the implications which the term psycho-analysis carries at the present day.

The question then arises whether the old-time methods of suggestion and hypnosis can find any place within the autognostic method. The principal use to which hypnosis was put before the war was as a means of reinforcing suggestion. Having hypnotized the patient, the physician proceeded to suggest away his various functional symptoms, and, to make doubly sure, often gave post-hypnotic suggestions to produce other general and specific effects. This method is undesirable for several reasons. In the first place, it treats the symptoms and not the cause. The same or other symptoms may therefore appear later on. Secondly, the patient is passive and abnormally suggestible. This increased suggestibility persists after the treatment, and is a source of mental weakness to the patient. Thirdly, repeated hypnosis, which is necessary in the more severe cases, tends to produce automatism and somnambulism. If the hypnosis is so deep that the patient loses touch with his waking consciousness and awakes as from a dream, these defects are serious and are only to be accepted as a choice between two evils—for example, in cases of alcoholism of long standing, or in other drug habits that have resisted all ordinary methods of treatment. In light hypnosis, where the patient has reached the arbitrarily defined stage at which he is unable to open his eyes when the operator tells him that he cannot, but is otherwise fully conscious of his surroundings, the drawbacks are correspondingly less.

But hypnosis can be used with a different purpose from that of reinforcing suggestion. All the severe cases of "shell shock" of the hysterical type (that is, showing functional disturbance, or loss, of sensory or motor powers) which I saw near the firing line in France suffered from loss of memory. I used light hypnosis to clear up this amnesia, and, as might be expected, I invariably succeeded. At first I used the method in the ordinary way, as an aid to the employment of suggestion, and suggested away the various other symptoms—mutism, paralysis, contracture, tremor, etc. But I soon discovered that if, after hypnotizing the patient, I suggested the recall of the lost memories with hallucinatory vividness, and reinstated the accompanying emotion of fear as an actual present experience, the voice returned of itself and the paralysis, etc., disappeared or diminished, without any suggestions directed towards these symptoms. The extent to which the symptoms disappeared varied in proportion with the extent to which I succeeded in reinstating the original emotional experience.

To illustrate by an example:

A patient, Pte. J. A., aged 41 years, was admitted to my neurological wards on the Somme suffering from deafness, mutism, and right-sided paralysis. His right arm was held stiffly across the chest, and he walked with the right leg stiff and the right foot turned outwards. There was also slight paralysis of the right side of the face. The tendon reflexes were exaggerated, but the plantar reflex was flexor and there was no ankle clonus. The abdominal reflexes were present, and equal on the two sides. The tongue was steady and protruded in the middle line.

The patient's history was as follows: He was partially buried by a bomb that went over his left shoulder and burst just behind him, causing him to lose all control of himself. He was then sent to a field ambulance, where he remained for four days and then returned to duty. On arrival at his unit he was noticed to be still tremulous, and was sent to see his regimental medical officer. Just as he reached the aid post a shell exploded near him and rendered him unconscious. On regaining consciousness he could neither hear, speak, nor walk. It should be added that, about six weeks before this, he had received a blow on the right arm from another man's shovel while trench digging. Since then his right arm had been tremulous whenever he was under shell fire.

I got the patient to lie down on a couch, and then showed him written instructions to close his eyes and think of sleep. He was instructed to relax all his muscles, breathe slowly and deeply, and think only of sleep. After a few seconds his breathing and facial expression showed me that he was asleep. I then made a sudden loud noise by banging two books together. His eyelids flickered and I found that he could hear.

I sent him to sleep again, and gave him the suggestion that the moment I put my hand on his forehead he would again feel

the explosion of the shell which knocked him down near the aid post, and would seem to be going through the same experience again, exactly as it happened. The moment my hand touched his forehead he became very tremulous, breathed rapidly, and then shouted out: "Feeny, Feeny, kill them! . . . Feeny, Feeny, where are you? It's getting too hot here. I can't put up with it any longer. . . . Feeny, come here and get me out, I can't move my legs. I can't stand up. [Very rapid breathing.] I can't walk to the dug-out. Take hold of my arms, then I shall manage to get along. . . . I don't want to lie on that wire bed. I want to get out of this. We have had everything from a rifle bullet to a Jack Johnson over here to-day, and three parts of us are knocked out." While the patient was talking like this, his right arm and leg showed signs of movement. Before waking him I reminded him where he was, who was speaking to him, and the principal facts about his admission to hospital, thus reassociating his hypnotic dream with his present experience. I also told him that on waking he would remember everything that he had just been going through. I then woke him up, and found that he could speak (although with a stammer), and could walk about normally. His right arm was still tremulous, and showed marked extensor paralysis.

Some days later I again sent him to sleep, and suggested that he would again live through his experience of being hit on the right arm by his comrade's shovel. He showed signs of pain, seized hold of his right upper arm with his left hand, writhed, and shouted "Oh my arm! . . . put it in my pocket." He then put his hand in his pocket. His hand was trembling. Thereupon I sent him more deeply to sleep. He then withdrew his hand from his pocket; it was quite steady.

In the case of this patient, then, the revival of memories of his two accidents, in a state of light hypnosis, with such vividness that he again felt the same emotions and seemed to be living again through the actual experiences, restored his voice and to some extent the motor power in his right arm and leg, and abolished the tremor of his right arm. All this occurred without the use of specific suggestions. But I had to help myself out later on with specific suggestions, as the case was more than usually difficult, nor could I keep him long enough to complete his cure.

During a period of sixteen months 121 cases of mutism passed through my neurological wards. Every one of them spoke when made to live again through their terrifying experiences. Some of them stammered, but these were a small minority. I did not need to give a specific suggestion that they would be able to speak. Cardio-vascular and secretory changes (tachycardia, hyperidrosis, etc.), dependent upon disturbance of the sympathetic nervous system, showed alteration under the same method of treatment. Curiously enough, paralysis of the voluntary muscles (apart from those concerned with the voice) diminished less readily than other symptoms. On the other hand, voluntary paralysis cleared up, sometimes quickly, sometimes slowly, under the influence of suggestion and persuasion, without the need of hypnosis.

These are facts. What conclusion can be drawn from them? It seems to me that we have a twofold dissociation in these cases. In the first place the shock of the shell explosion has produced a dissociation from the patient's personal consciousness of certain psycho-physical functions together with the memories linked with them immediately after the shock. But a second dissociation has also occurred, namely, that between the psychical and physical counterparts of the emotional reaction of fear. The physical counterpart then persists instead of being evanescent. The first dissociation has to do with the central nervous system, the second has to do with the sympathetic. Revival of emotion with hallucinatory vividness soon after the original shock, abolishes the second dissociation as well as the first, and so brings the physical manifestation of the emotion again under the sway of the conscious personality.

In cases seen in England and Scotland I found that lost memories were not so easily recalled, and that the reinstatement of emotion with hallucinatory vividness was very difficult to effect. However, in the few cases in which this did occur, the symptoms showed definite and sudden improvement. Chronic cases pass through a period of later mental development, in which different mental processes, memories and motives, recent and remote, interact and produce the well-known fixation of symptoms. We are thus brought back to the method of autognosis, in which memories are revived, in reverse order, by patient questioning and heart-to-heart talks. But it is the experience acquired in the field, with early and what I would call relatively "pure" cases, that

enables us to understand the therapeutic value of the revival of memories; and in light hypnosis we have a helpful method, if judiciously and sparingly used, to speed up the process or make it sufficiently complete. It is only in a small minority of the cases that this is needed or advisable.

TRANSVENOUS ANEURYSMORRHAPHY.

DESCRIPTION OF THE OPERATION.

BY

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I wish to draw attention to an operative procedure which I have employed in the treatment of aneurysmal varix with most gratifying results, and which I have termed "transvenous aneurysmorrhaphy." It appears to meet the needs of a certain number of cases in an admirable manner.

I will first give an account of the case, which presents some points of peculiar interest, and will then offer some observations in regard to the operation itself.

CASE.

Pte. H. M., aged 22, was wounded in the right thigh by a rifle bullet on October 1st, 1916. On October 10th he came under the care of Captain P. Cheal, R.A.M.C., who found a small healed entrance wound on the antero-internal aspect of the thigh 4 in. above the knee-joint, with an exit wound at the same level on the posterior surface not quite healed. Considerable persistent swelling developed in the leg and foot, and was considered to be due to venous thrombosis. There were no signs of aneurysm. On January 5th, 1917, massage was instituted, after which a very marked vibratory thrill was observed for the first time in the neighbourhood of the wound. On January 6th I saw the case in consultation with Captain Cheal. The foot and leg were dusky and showed slight general oedema, and there was definite dilatation of the superficial veins from the knee downwards. In the upper part of the popliteal space there was slight swelling, with systolic pulsation, and other signs of arterio-venous aneurysm were present. There was faint pulsation in the anterior and posterior tibial arteries. I regarded the case as one of varicose aneurysm, and advised operation.

Description of Operation.

The operation was performed on January 15th, 1917. The popliteal vessels were exposed in the upper part of their course where the artery and vein were firmly adherent to one another without any intervening sac.

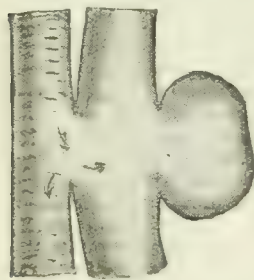


FIG. 1.—Aneurysmal varix of popliteal vessels, with a sacculated venous aneurysm on the opposite wall of the vein.

Here the vein was greatly dilated and the artery below was considerably smaller than usual. When freeing the side of the vein remote from its connection with the artery a sacculated venous aneurysm was exposed (see Fig. 1) and was removed, disclosing the arterio-venous stoma through the lumen of the vein. It was of elongated elliptical form, $\frac{3}{4}$ in. in length, and lying in the long axis of the vessel. The opening in the vein was enlarged very slightly upwards and downwards, and through it the aneurysmal opening was sutured (see Fig. 2) with fine silk sterilized in liquid paraffin. The vein was then closed in a similar manner.

On removal of the tourniquet there was no bleeding and the circulation through the vessels seemed perfect. Operation was completed by suture of the fascial tissues and the skin.

After operation good pulsation was felt in the dorsalis pedis and posterior tibial arteries. On the following day there was no trace of oedema in the limb, the colour was normal, and the dilatation of the superficial veins had disappeared. Healing was uneventful, the circulation remained good, and the patient was allowed to walk four weeks after operation. He was kept under observation for two months longer and was then discharged to light duty, the circulation being normal.

It is remarkable that until massage was instituted, three months after he was wounded, the patient exhibited no signs of arterio-venous aneurysm, although there were evidences of venous obstruction present from the beginning. I have previously¹ drawn attention to the rapid development of traumatic aneurysm following massage in certain cases of gunshot injuries, and it would appear that massage was the exciting cause here also, though naturally the vascular injury dated from the time of the wound, and

it is probable that in the absence of massage active movements would have produced the same result. A reasonable explanation of the signs previously present is that the arterio-venous opening and the lumen of the vein were occluded by a clot which was disturbed by massage, but in that case it is difficult to understand why no evidences of embolism appeared, and at operation the lumen of the vein appeared perfectly smooth and normal. Consequently I find it hard to account for the train of events in this case. Another point of interest is the presence of a distinct venous aneurysm which accounted for the swelling and pulsation at the upper end of the popliteal space, and led to the diagnosis of varicose aneurysm rather than of aneurysmal varix.

A few words are necessary in regard to the technique of this operative procedure:

Apart from the necessity for rigid asepsis, scrupulous care must be exercised to avoid injury to the delicate intima of the vein. Consequently any blood which may obscure the view on opening the vessel must be washed away by gentle irrigation with saline solution, which is then carefully mopped up by a gauze swab or aspirated by a syringe. On no account must a swab be introduced into the vein for the purpose of wiping off blood; such a measure will favour subsequent venous thrombosis. The vessel wall should be smeared with sterilized vaseline, as recommended by Carrel.

The method of introducing the suture to close the arterio-venous communication is important: The needle is first passed through a small portion of the fibrous tissue which binds the vessels together at one end of the communication, on its external aspect (that is, entirely outside the vessels and between the two), and does not penetrate the intima of either—it thus resembles the commencement of the outer row of sutures in a gastro-jejunostomy. This stitch is immediately tied and the needle is then passed obliquely from without inwards, emerging on the inner surface of the vein close up to the extremity of the stoma (see Fig. 2). The extreme edges of this are then brought together by fine continuous sutures through intima and media until the opposite end

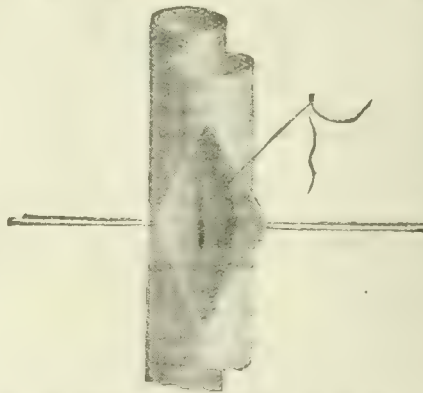


FIG. 2.—The venous aneurysm has been removed and the opening in the vein slightly enlarged, its edges being retracted by fine traction 'tit-hea.' The arterio-venous stoma is being closed by a fine continuous suture. Note that no knot appears on the interior of the vessels (see text). In practice the stitches do not lie so close together as figured, and when drawn taut they do not present so much on the surface.

is reached, when the needle is again passed out from the lumen of the vein obliquely through its wall and the overlying tissue which binds it to the artery, so as to emerge between the two, when it is secured in a similar manner to the other end. Thus it will be seen that there is no knot projecting in the lumen of either vessel, and if the stitches are placed accurately and drawn taut throughout they do not present in the lumen of either vessel any more than in the case of ordinary through-and-through stitches which produce eversion of the edges in vascular suture. The closure of the incision in the vein presents no difficulty, being effected by the ordinary method advocated by Carrel.

While many cases of aneurysmal varix cause little or no inconvenience to the patient and do not require operation, others demand treatment by reason of circulatory disturbances. In some of these, when conservative and reconstructive measures are desirable, the procedure I

have described presents certain clear advantages over the usual operation, which consists in division of the junction between artery and vein followed by suture of each. The dissection and freeing of the anastomosis from the surrounding parts is sometimes very difficult and tedious, while it involves risk of injury to the vessels themselves and to neighbouring structures—for example, nerves—which may be adherent. These disadvantages are obviated by the transvenous operation, which thus offers the same facilities as does the transsaccular operation in cases of simple traumatic aneurysms and varicose aneurysms, and which I have previously emphasized.² I may say that since my former communication my further experience in the two latter types of cases fully justifies the claims I made for the transsaccular route. I have adopted it in every case where it was feasible, and it has invariably been successful.

While the case I have cited was an ideal one for transvenous aneurysmorrhaphy, in view of the presence of the venous aneurysmal sac, I do not advocate its adoption in all instances. Each case should be considered carefully when the local conditions are exposed at operation, and a decision should then be taken by the surgeon.

I desire to express my indebtedness to my former colleague, Mr. Harold Squire, for the admirable drawings of this case, and to Captain P. Cheal for his assistance at the operation and his after-care of the patient.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, December 9th, 1916. ² Ibid.

SOME OBSERVATIONS ON ABDOMINAL WAR SURGERY.

By ECHLIN S. MOLYNEUX,

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THREE qualifications are essential to the surgeon who undertakes the treatment of wounds of the abdomen.

The first is speed in operating. He should not spend more than half to one hour over the operation. This will be greatly facilitated by making a liberal incision, which may, if necessary, extend from the ensiform process to the symphysis pubis; large incisions cause practically no shock and heal well. The second qualification is gentleness. The more gentle the surgeon's manipulations the less the shock, and this again is aided by a liberal incision. The third is good judgement. During a push it is very important for the surgeon to be able to judge whether a given case is likely or not to recover if he decides to operate; and time that might be devoted to saving other lives may be wasted in operating on an abdominal case that is hopeless from the first.

It is generally said that a patient who is alive thirty-six hours after a wound of the abdomen, is better left alone; a small percentage of such patients recover. My experience is that very few patients with injuries of the hollow viscera of more than twenty-four hours' standing are benefited by operation. If the lacerations are severe he usually already has diffuse peritonitis and operation does no good. If they are slight, they may already be shut off by adhesions, and the patient has a chance of recovering, which will be diminished by having the adhesions pulled asunder.

Indications for Operation.

The most important guide to a patient's condition is the pulse rate and blood pressure. If the pulse rate is over 120 chances of recovery are very small, but not always hopeless if a speedy operation is performed. To quote two instances:

CASE I.

An American had a shell wound over the stomach. The foreign body was localized 2 in. deep to the site of the injury. It was thought that haemorrhage was the chief trouble and not injury to many viscera. On operation the foreign body was found in the transverse mesocolon which was much torn, no hollow viscera were injured, but a large vessel was bleeding vigorously. The vessel was secured and the wounds sewn up; 300 c.cm. of 6 per cent. gum solution was injected intravenously, and the man made an uninterrupted recovery.

CASE II.

A man had a penetrating shell wound of the left buttock, and also a shell wound of the left arm, with fracture of the humerus,

a shell wound of the left leg complicated by fracture of the fibula, and a wound of the right arm.

After resuscitation his pulse was 138; he was warmed up further in the theatre and given hot drinks, and improved somewhat, but was still in a very feeble condition. It was decided to operate. The wounds were excised, the fractures put up, and the abdomen opened, while assistants adjusted the splints. One perforation of the large bowel and eight perforations of the small intestine were sutured, and the blood and extravasated faeces swabbed out. A rubber dam drain was left in Douglas's pouch. He was then infused with 1,000 c.cm. of gum solution. This was followed by a rigor. He vomited on and off for two days, but from that time onwards steadily improved, and was evacuated about eighteen days later, eating his food well and in excellent condition.

A very useful guide is the effect of moving a patient from the resuscitation ward to the theatre. He may have a pulse of 110 in the resuscitation ward, but by the time he has been carried the few yards to the theatre the pulse rate may have increased to about 130, and be difficult to count. This is a strong contraindication to operation. If he cannot stand being moved to the theatre, he will not survive an operation.

My practice has been as follows:

Any patient who is in a fit condition, and who, from the site of the wound, the physical signs, and the localization by *x* rays of the foreign body, probably has a wound of a hollow viscus, or a large foreign body in the liver or spleen, or shows signs of much haemorrhage, is after being sufficiently resuscitated, when this is necessary, taken to the theatre.

He is then anaesthetized. I have found Coxeter's gas and oxygen apparatus (invented by Boyle) the best—an injection of morphine and atropine having been given previously. It is usually necessary to let the gas and oxygen flow through the ether bottle that is provided, when the time for sewing up the parietes draws near.

All the entry and exit wounds are first thoroughly excised, and flavine packs introduced and left in. In most cases it is found best to make a separate incision to explore the abdomen. A para-medial is the most generally useful incision, as it is easier to make a complete examination through such an incision. In a wound of the side a para-costal incision is often suitable if the foreign body is localized near the entrance wound, and therefore it is not necessary to examine the whole of the abdominal contents. In the majority of cases the foreign body, from its position and the distance it has traversed, may have damaged many organs, and it will therefore be assumed that a para-medial incision has been made. I then make a systematic examination of the whole of the stomach and intestines, if necessary exploring the posterior surface of the stomach through the lesser sac and taking care that as little of the intestine as possible lies outside the abdomen at one time. This need not take long if a liberal incision is employed. A piece of gauze is clamped to each perforation to mark it. Then the solid viscera are inspected and the foreign body looked for and removed.

The next step is to suture all the perforations. A single continuous suture which inverts the peritoneum is all that is necessary to close a perforation. If a loop of intestine is in rags it may be necessary to resect it, and in this event an end-to-end union is best. But the mortality from shock is very great in these war resections, and it is better to sew up many perforations and tears rather than resect bowel; in fact, this latter procedure should be avoided if it is in any way possible to suture the wounds and preserve a sufficient blood supply. The large intestine will stand more traumatism to its blood supply than the small. Either fine catgut or linen thread may be used for suturing the intestine, but preferably the former. For the bladder, catgut should always be employed. For haemorrhage from the liver, spleen, or kidney, mattress sutures of catgut may be tried, but gauze packing, left in, will usually be found to control haemorrhage best. Relatively seldom is it necessary to remove the kidney or the spleen except for secondary haemorrhage which is usually due to sepsis. Wounds of the pancreas require a gauze pack to stop haemorrhage and prevent the pancreatic juice running over and digesting the abdominal contents. But pancreatic wounds are very fatal owing to concurrent damage to contiguous important structures. If there is a large foreign body in the liver it should be removed, if feasible, as it sometimes leads to dangerous hepatitis.

The blood and all faecal soiling is now sponged out with gauze wrung out in hot saline. If there is much faecal contamination a drain is left in Douglas's pouch. A rubber dam generally suffices, and drainage is often considerable for forty-eight hours, after which the drain is removed. Drainage is specially necessary after wounds of the colon and rectum. If the colon is greatly damaged colostomy of the damaged portion should be performed. Lacerations of the diaphragm, unless minute, should always be carefully sutured. The abdomen is closed in layers.

In wounds of the right chest, with a large foreign body penetrating into the liver, I have found the following technique useful. After performing thoracotomy and dealing with the lung, the foreign body is removed, if possible through the hole in the diaphragm, which is enlarged if necessary. The diaphragm is then sewn to the costal pleura, as in the operation for subdiaphragmatic abscess. A gauze drain is left in. By this method the risk of any septic discharges from the liver wound running down into the abdomen is avoided; they drain straight to the outside of the chest, through the diaphragm. The pleural cavity is of course closed off. In wounds of the left side of the chest involving the spleen and stomach, in which the foreign body is localized near the diaphragm, when thoracotomy is being performed the rent in the diaphragm can often be enlarged, the foreign body removed, and the wound of the stomach and spleen dealt with. The diaphragm is subsequently sewn up and the chest closed.

If a wound of the bladder is small but leakage of urine has occurred into the abdomen, it is not always easy to find the wound. In one case I was unable to do so, and performed suprapubic cystotomy; a tube was left in for a few days, by which time the original wound had healed; the patient made a good recovery. A foreign body should always be removed if inside the bladder. In wounds of the buttock or back, penetrating the abdomen, the back wounds should always be dealt with first, as patients suffer considerable shock from being turned over late in the operation.

After-Treatment.

It is important to keep the patient warm. Fowler's position is adopted after about six hours, and the patient is only gradually raised if there is much shock. Saline and brandy are given by the rectum. I allow plenty of fluid by the mouth as soon as the patient wishes it; if perforations have been properly sewn up it will do no harm, and if they have not they are sure to leak anyhow when the peristaltic power returns. Moreover, if the stomach be wounded it is easily made watertight, as the walls are thick. These patients are always thirsty, and need fluids badly. For flatulence pituitary extract, injected intramuscularly, is often useful.

On the second or third day it is usual to administer an enema after an injection of pituitrin. I have often noticed considerable shock after these enemata, though they have been carefully given, and have seen two cases die of shock after an enema. One of these was a patient with a large tear of the hepatic flexure of the colon that had been sutured. Three days later he was doing well, and his pulse was only 100. He was given an enema, and collapsed immediately. At the *post-mortem* examination the wound of the bowel was found quite sound, and nothing abnormal was seen. Miss Wade—a very observant sister who nursed many of these abdominal cases—tried different enemata and aperients under my direction; she always noticed some degree of shock after an enema, but found that castor oil was more satisfactory than anything else; after its administration shock was negligible. Mention is made of this as it may be worth further investigation, and apply also in cases of severe civil abdominal operations.

Results.

I kept notes of 34 consecutive cases during the final campaign of 1918. I retained them in the casualty clearing station till convalescent; 23 of these made a good recovery, 11 died—a recovery rate of 67 per cent. Six of this series had wounds of the chest penetrating the diaphragm into the abdomen.

By operating on war wounds of the abdomen some lessons are learnt that should prove of great help in civil abdominal surgery. The foremost of these is how speedily an abdominal operation can be performed without roughness and without undue sacrifice of thoroughness; the

shock of a severe operation is thereby greatly lessened. Gas and oxygen is an excellent anaesthetic for a civil abdominal operation of an urgent and critical character. It is now common to examine the whole of the abdominal contents systematically in a short space of time; lastly, a single layer of continuous suturing is ample for most cases requiring resection of bowel or anastomosis.

A satisfactory feature of these abdominal wounds is that if a patient recovers from the immediate injury he usually becomes a strong healthy man again and an asset to the community, whereas many wounds of the extremities—for example, fractured femur—nearly always leave some permanent disability.

A SUGGESTION FOR A HEALTH CENSUS.

BY

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IN a paper published recently in the *Medical Officer*¹ I pleaded for a health census. The subject is of such importance to the community that I wish to draw attention briefly to it in your widely circulated JOURNAL. The points made are: (1) That the Ministry of Health is essential to attain the maximum of efficiency and for the co-ordination of the different authorities dealing with the subject; and (2) that prevention of illness takes the first place in any national scheme, and of next importance to this comes the protection of the community from communicable disease. It is now fully realized that any measures, however far-reaching, will be of little use unless better houses are provided for the poorer classes.

The waste of man and woman power from ill health is an economic problem of the first importance to the country, and money wisely expended on health, particularly on the prevention of disease, will prove a sound investment for the nation.

Medical examination for the army has proved the enormous number of unfit in this country. Medical examination of school children had already drawn serious attention to the large percentage of defective children, and had also made evident that many of the conditions by early discovery and efficient treatment could be prevented from irretrievably ruining the child's health and future.

It seems to me to be the duty of medical officers of health to indicate what may be considered the only method likely to achieve these invaluable ends—the prevention or the early treatment of disease. The advantages of this are likely to appeal to an intelligent community, though compulsory measures for any ordinary purpose are rightly resented by the average Briton. If active measures are to be taken, now is the time, for the existing organizations with trained doctors and suitable buildings can readily be turned to a good purpose. It is suggested that examination of every man, woman, and child under sixty years of age should be made periodically, and that each person examined should be supplied with a "health record card," on which would be entered all particulars of the physical condition found on such examination, this card to be produced at all subsequent examinations and necessary corrections and additions made upon it.

Four examples of well known diseases are offered as illustrations of the importance of such a scheme.

1. *Cancer*.—Every decade shows an increase of the progress of this dreadful disease. Though the cause of it has not yet been discovered, many conditions well known to surgeons predispose to its development. By removing these predisposing causes cancer can be prevented. In the public mind pain is so closely associated with the name of cancer that an apparently insignificant swelling, or a small painless sore, or a trifling haemorrhage from one of the internal organs, is apt to be ignored. Yet each of us knows that any of these may be the first evidences of cancer. Surgeons are agreed that 75 per cent. of cases now seen by them have poor chance of cure from even the most radical operations, but that in the great majority of patients there was a time when a suitable operation could have effected a good result and permanent cure.

2. *Arterio-sclerosis* claims an increasing number of victims at the most efficient and productive period of

their lives. Its early detection requires skilled examination and its progress can then be arrested.

3. *Tuberculosis*.—Many of the predisposing causes of tuberculosis are known, and their recognition may be the means of preventing its development. It is probably more widely spread than any other disease, and unfortunately the tubercle bacillus is possessed of such resistance that it can continue to exist in almost any environment. The conclusion following this knowledge is that any attempt to stamp out tuberculosis is for the present doomed to failure. If recognized in its early stages and promptly treated, we know it is not the deadly disease public opinion has supposed. But, in spite of notification and sanatorium treatment, the results have not been what they should, because it is exceptional for cases to be discovered in their early stages. As proof of this, our experience may be quoted. The best results in Cumberland have followed the discovery of early cases during examination of school children or the examination of contacts of notified cases.

4. *Syphilis*.—The costly arrangements now being inaugurated for the treatment of this deadly disorder, though beneficial to the affected individual will do little to stamp out the disease, but this could be done in two years if medical knowledge could be applied on scientific lines. The organism believed to be the cause of syphilis, unlike that of tubercle, is delicate and easily destroyed. It dies after a few hours of exposure to the air, and can only be propagated by intimate personal contact. When introduced into the human body it invades all the tissues, and untreated is likely to remain actively infective for years. Unless treatment is made compulsory every doctor knows that it is going to be a failure. The diagnosis of syphilis by clinical examination, the microscope, and blood tests is relatively easy, so that such a health census as I have suggested would reveal the syphilitics in any community. The only scientific method of disease prevention ever introduced into this country was Mr. Walter Long's Rabies Order of 1897, and this magnificent bit of far-seeing statesmanship stamped hydrophobia out of Britain. In the interests of the community and of themselves infective syphilitic persons should be segregated in healthy surroundings till the risks of spreading infection and of leaving the disease uncured have gone. A small extension of the work done by port sanitary authorities would ensure that new cases were not introduced from overseas.

If the Prime Minister's wishes are to be realized they demand radical improvement in the methods so far recognized and employed for the prevention and treatment of disease.

REFERENCE.

¹ *Medical Officer*, April 12th and 19th.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A NOTE ON THE TREATMENT OF MALARIA.

A CONSIDERABLE number of men who have contracted malaria abroad, and who have been demobilized, are being admitted to the malaria section of the 4th London General Hospital with relapses. In most cases they give a history of having been treated by civil practitioners before admission to hospital, but that the treatment has failed to stop the attacks of fever. This is apparently due to a dread of giving adequate doses of quinine; and I think it might be of advantage to point out that we have found here that quinine sulphate in solution, given in doses of 10 grains three times a day, never fails to cut short the attacks and cause disappearance of the parasites from the peripheral blood in a few days, whilst no serious ill effects have followed such doses. If each relapse were treated promptly with this amount of quinine daily for a week, it would mean a considerable saving in lost time, and the general health of the patients would not deteriorate as it does under repeated attacks of fever. After the week's dosage of 30 grains of quinine daily, a dose of 10 grains of quinine should be given regularly once a day to prevent relapses, as in the Malaria Concentration Centres in England (*Lancet*, May 10th, 1919, pp. 780-781). My thanks are due to Colonel Sir Ronald Ross, Consultant

in Malaria, and Colonel Smart, Officer Commanding 4th London General Hospital, for permission to publish this note.

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A SUDDEN DEATH UNDER AN ANAESTHETIC.

On May 20th I gave an anaesthetic to a stout well-grown girl of 16 (she looked quite 20) for enucleation of tonsils by dissection. Anaesthesia was induced without difficulty by C_2E_3 on a domette mask. The mouth was then opened by gag and the vapour of Billroth's mixture (C_2E_3) blown in through a tube from a Junker apparatus. While the first tonsil was being enucleated, which was done with some difficulty, she gave signs of coming to, and I replaced the mask for a minute and gave a little more C_2E_3 , then returning to the Junker apparatus and tube. The fauces were swabbed out, and there was no indication of blood in the air passages. When the second tonsil was on the point of removal the patient suddenly ceased to breathe, the pupils dilated, and the heart stopped beating. Artificial respiration was carried on for nearly two hours, air entering the chest quite freely, but there was never the slightest response. *Post mortem* a fairly large persistent thymus was found, and some enlarged abdominal glands; the left ventricle was uncontracted.

The persistent thymus probably affords an explanation, though a little understood one, of the sudden cardiac failure; but I ask for information on two points. (1) Is there special danger in the operation of enucleation of tonsils? Several deaths have been recorded. (2) Can it be that the necessarily light anaesthesia given by a Junker apparatus and tube when the mouth is widely open is a source of peril? Auricular fibrillation is said to occur with light chloroform anaesthesia.

Eastbourne.

H. S. GABBETT, M.D.

Rebivus.

DR. JOHN FOTHERGILL.

THE appearance of *Dr. John Fothergill and his Friends*,¹ from the pen of Dr. Hingston Fox, will be welcomed by all those who are students of the eighteenth century. It is the fashion for some, quite unjustly, to sneer at that century as an age of artificiality and stagnation; yet during the greater part of that epoch the final blows were being struck which emancipated the human intellect, we may hope for ever, from the fetters of superstition and authority so-called. That age witnessed the fall of the obsolete edifice of feudalism, and saw the road traced out up which we have since travelled to the enjoyment of civil, intellectual, and religious freedom. In that century also were re-established the sound principles governing scientific inquiry at the present day, which, lying dormant since the close of the seventeenth century, suddenly burst forth with such power during the last thirty years of the century. With this book as an introduction it is pleasant to join the circle of representative Georgians who shared the friendship and hospitality of Dr. Fothergill, and who played a not inglorious part in the intellectual and social developments of the age in which they lived.

Dr. Hingston Fox, as we already knew, is quite at home in the eighteenth century. He prefers the silk stockings, the knee breeches, and the brocaded waistcoat to the doublet and the hose. He has made full use of his great knowledge of this period, and by inheritance and conviction he is ably equipped to describe the life and times of a man who was certainly the most prominent member of the Society of Friends in the eighteenth century. The result is notable for accuracy and wealth of research, and the book is written in a sober and correct style that would surely have earned the encomiums of the most precise of Fothergill's friends.

Whatever may be said of the general reputation of Fothergill as a figure in his age, the estimation of his exact position as a physician is a difficult problem. Like

¹ *Dr. John Fothergill and his Friends. Chapters in Eighteenth Century Life.* By R. Hingston Fox, M.D. Macmillan and Co., Ltd. (8vo, xxiv + 434, 21s. net.)

many other physicians who flourished in the eighteenth century, his name has been rendered famous not only by his skill in medicine, but also on account of his varied interests and his irreproachable character as a man. As a practitioner of medicine he was accorded a large share of public support; few indeed have been so successful. But of the two criteria by which the medical reputation of a physician is judged, his ability as a teacher and his medical writings, the former was never tested, and the latter are so scanty, and so evidently composed under pressure of other work, that they afford no true basis for an opinion. With his extensive practice, and the other demands upon his time, it is not to be wondered that Fothergill had little leisure for reflection and writing, and much of what has come down to us bears evidence of haste, and careless composition. He wrote entirely from the clinical standpoint, and out of the wealth of his unrivalled clinical experience. As Dr. Hingston Fox points out, his ability in presenting a picture of disease, as he knew it, was great, and it may be doubted if Heberden himself could have written anything better than Fothergill's account of "sore throat." Nor must he be blamed for confining himself to the clinical side of disease. At the time in which he lived the clinical features of disease were the only avenues to medical knowledge, for the sciences of physiology, chemistry, and even anatomy, had hardly begun to have an effect upon the study of morbid conditions. That came later through familiarity with the work of Haller, Morgagni, and Baillie. Still, within these limitations the writings of Fothergill possess considerable merit, not least on account of the total absence of blind adherence to "systemic" authority, and theories that had emanated from the metaphysics of the "schools." He studied the only book he knew—his own large clinical experience of disease.

Fothergill as a physician recalls to our mind two other great exponents of clinical medicine who lived in his time—Heberden and Sir George Baker—and the trio had much in common. They were all pure clinicians, they all enjoyed a large share of public patronage, they were all distinguished for public and private virtue, and they were never attached to the staffs of any London hospital. Their influence was great, and it was uniformly exerted for the good of the profession they adorned. Heberden, we think, stands high above the other two. In clinical ability he may justly claim to be the descendant of Sydenham in the direct line, and the prototype of Bright, Watson, and the other great clinicians of the nineteenth century. His *Commentaries* have established his reputation for all time, and in them we have evidence that the praise of his contemporaries was not exaggerated. The fame of Baker rests upon his great work in explaining the cause of plumbism in Devonshire, and his knowledge of Greek; while Fothergill, if he did not equal the other two in erudition and medical ability, had yet a wide sympathy with science, perhaps in advance of Heberden and Baker.

But an imperfect conception would be formed of the character of Fothergill if the medical side of his life only be considered. Here we think Dr. Hingston Fox has performed a signal service to history in devoting so much of his book to the activities of Fothergill as a botanist, an educationalist, and as a politician of the school of Burke and Fox. After reading what Dr. Fox has told us our admiration is increased for the man who, besides spending his day in arduous medical practice, could find time to care for a botanic garden of upwards of thirty acres, employing fifteen men, and catered for by collectors all over the world in Fothergill's pay. We always had a respect for Dr. William Pitt-Rivers's garden at Islington, but his five acres pale into insignificance when compared with the magnificent expanse at Upton Park. Only a glance at the long list of plants and trees introduced into this country by Fothergill is needed to appreciate how much succeeding generations owe to him for making our country more beautiful. The formation of Ackworth School also claimed a large part of Fothergill's energies, and he found time to take an active part in the government of the Society to which he belonged. Dr. Fox writes with the skill of an expert concerning the history of the Society of Friends during the eighteenth century, and from his temperate account we are glad to learn that Fothergill's influence in the Society was always exerted in the direction of justice and toleration. With regard to the dispute with Leeds we are, however, unable to understand how

Fothergill could expect justice in a matter concerning medical skill from a court composed of fifteen lay members of the Society. A description is given of the Friends' Meeting House in Gracechurch Street, and this is of peculiar interest, for we believe it was to this place of worship that Voltaire was taken by his Quaker friend during his stay in England; a full account of the visit will be found in his delightful *Letters on England*.

Few will associate Fothergill with those engaged in negotiations connected with the movement for American Independence, but Dr. Fox has explained with great ability the considerable part played by the physician to avert, or at any rate to soften, that unhappy event. As we might expect, Fothergill was on the side of Chatham, Burke, and Fox, and his attitude throughout is characterized by prudence and toleration.

Here we must take leave of this excellent book, in which Dr. Fox has performed a real service to medical history in this country. We leave it with a clearer perception of Fothergill's character than we had obtained from Lettsom or others who have essayed his portrait. Fothergill will not, perhaps, find a place in medicine beside Hunter, Heberden, Baillie, and Bright; he will rank below Prout, Wells, and Young in the realm of science, and his well of human sympathy may not have been so deep as that of John Howard and Wilberforce. But for all that he was endowed in a remarkable degree with all those qualities of heart and mind that make us respect and love him as a physician and a man. He was representative of all that was best in human nature in his century.

EMERGENCY SURGERY.

ANY general practitioner may be suddenly called upon to perform urgent surgical operations, and as his opportunities for practising surgery are few he is no doubt glad to have at his elbow a book of easy reference which will quickly tell him what he wants. Dr. JOHN W. SLUSS has supplied such a want in his book, *Emergency Surgery*.² As this is the fourth edition it is evidently popular with American general practitioners, for whom it was written. The new edition has been brought up to date in so far that the chapters on wound infections and those dealing with the surgery of war have been rewritten or revised. A great deal of information is packed into comparatively small space, and it can be reached readily through the index, which is fairly full. But the information is dealt out unequally. For example, immense detail is expended on the manipulative method of reducing the dislocation of the thumb where the head of the metacarpal is caught between the two portions of the short flexor and the glenoid ligament is interposed between the phalangeal base and the metacarpal head, but no description is given of the operation to be performed should manipulation fail. The account of the operations for herniotomy and radical cure of hernia is greatly over-illustrated, as indeed are those of many other of the surgical emergencies. To a few points exception must be taken. We cannot agree with the author in recommending that drainage tubes in empyema after resection of rib should be long, nor do we believe that the bony points of the elbow in any position of the joint form an equilateral triangle; and lastly, boric acid is not a constituent of Dakin's solution. Readers will observe many faults in the English composition and the use of words, and what is worse, wrongly figured references and proof reader's omissions. They will be consoled to find that the majority of the pictures are from well known books and compensate for textual delinquencies.

It cannot be said to be an easy business to write a *Text-book of First Aid and Emergency Treatment*³ for the "untrained first-aid worker" and for the "advanced student." Dr. BURNHAM has essayed this task, and has accomplished it with considerable success. The text is clear and precise, and the very numerous pictures, mostly borrowed, are illustrative. The introductory chapter on anatomy and physiology is full enough to interest and not

²*Emergency Surgery*. By John W. Sluss, A.M., M.D., F.A.C.C., Associate Professor of Surgery, Indiana University School of Medicine, etc. London: William Heinemann. 1917. (Post 8vo, pp. xix + 848; 685 figures. 17s. 6d. net.)

³*A Textbook of First Aid and Emergency Treatment*. By A. C. Burnham, M.D., Medical Corps U.S.R., Instructor in Surgery in the Polyclinic Hospital, New York City, etc. Philadelphia and New York: Lea and Febiger. 1917. (Post 8vo, pp. 307; 160 figures. 2 plates. 2 dols.)

overload the student in beginning the study of first aid; the pictures are chosen from well-known textbooks of anatomy. Wounds and wound infection, bandaging, fractures, and dislocations, regional and general injuries, are thoroughly well represented as far as possible in non-technical phraseology, with insistence on observance of general principles to guide treatment. The book is nicely balanced and proportioned, and appears likely to lessen the dangers associated with the possession and application of small stores of knowledge. We would like to point out, however, that it is not right to say "the first symptoms of tetanus noted are convulsions beginning in the muscles of the jaw" (p. 164); all recent teaching in this disease draws attention to local muscular rigidity and spasm as the first sign to be watched for. Again, we think the author, in the anatomical chapter, should not employ the terms "bregma," "inion," "gnathion," etc., in describing the bony prominences of the skull, and should correct the statement that the spinal cord is "about the size of, or a little larger than, a lead pencil," or at least give the cross section measurements of the lead pencil. Apart from these minor faults the book is excellent of its kind.

LEONARDO DA VINCI AS AN ANATOMIST.

In his study of Leonardo da Vinci as an anatomist, Dr. H. Hopstock,⁴ Professor of Anatomy at the University of Christiania, has drawn on the Windsor manuscripts (*Fogli A and B*) which have been reproduced by Sabachnikoff and Piumati, and has utilized also the remaining 129 Windsor Leonardo manuscripts translated by Vangen, Fonahn, and Hopstock, and published by Dybwad as *Quaderni d'anatomia I-IV*. His comparison of the *Fogli* with the *Quaderni* shows that the former deal almost exclusively with anatomy and physiology. The dissections reveal Leonardo as a great and original anatomist, and his comparatively fluent and easy diction is, in Dr. Hopstock's opinion, proof that the *Fogli* were written in the anatomist's later years; the *Quaderni* show better the way in which Leonardo acquired his knowledge of anatomy. About one quarter of them deals with subjects other than anatomy and physiology; the style is in many cases obscure and heavy, and they probably represent the notes of his early anatomical and physiological studies.

Dr. Hopstock thinks that Leonardo started with some knowledge of anatomy derived from old sources, but that he soon struck out independently, developing his methods of research on original and scientific lines. His method of dissection, his opinion of different authors, his views on the arts of dissection, and the interesting sentiments he experienced while dissecting are analysed by Dr. Hopstock, who has come to the conclusion that Leonardo had more than a vague idea of the phenomena of the circulation of the blood, but admits that no clear account of it is given. Dr. Hopstock is of opinion that nobody had previously made so many dissections of the human body as Leonardo and that he was the first to describe the uterus as an organ with a single cavity. He was also the first to give a correct description of the skeleton and practically all the muscles of the human body. In his study of the blood vessels he was the first to practise the injection of a solidifying substance the better to trace them. No one before him had depicted the heart so well, and it was he who gave the names auricle and ventricle to its chambers. Dr. Hopstock, who reproduces many of Leonardo's drawings, sums up by saying that Leonardo, though a mediæval artist, should be regarded as a modern biologist whose anatomical and physiological drawings belong to science rather than to art.

NOTES ON BOOKS.

THOSE in search of a practical and scientifically written book on British birds will welcome the appearance of the *Practical Handbook of British Birds*,⁵ edited by Mr. H. P. WITHERBY. The price of each part is 4s., and as the whole work is to be completed in eighteen parts its cost may be considered moderate. To judge by the two

sections now before us the work, when completed, will contain a vast amount of information carefully analysed and recorded; all birds on the British list are to be included, and both plates and text figures will be given in abundance. The plan of the work shows much originality, upon which the editor and his five collaborators are to be congratulated. The information is very systematically arranged, and a feature of novelty and particular value is a description of the sequence of plumages and moults, from the nestling to maturity and from season to season, of each bird. An account is given of the flight, notes, and song of each bird, and of its characteristic habits as observed in the field; the sections on the food of birds will help the reader to form his own opinion on the vexed question of which species are injurious and which are not.

The second edition of *Details of Military Medical Administration*,⁶ by Colonel FORD, of the Medical Corps, U.S.A., is a massive and apparently exhaustive work on a subject now happily of less importance than it was a year ago. It contains twenty chapters and two appendices, and is full of detailed orders, instructions, forms, schedules, and the like, with constant reference, of course, to U.S.A. service regulations.

It is generally agreed that some reconstruction of our methods of regulating the traffic in drink is necessary. Since D.O.R.A. of 1915 is soon about to expire automatically, the old *ante bellum* licensing arrangements will come again into force unless Parliament takes action. The case for the State purchase of the liquor trade has been ably set out by Messrs. ROWNTREE and SHERWELL⁷ in a pamphlet that well repays reading, and should find a wide circle of readers at the present critical time.

In the third number of the *Seale Hayne Neurological Studies*⁸ Lieut.-Colonel A. F. HURST and his colleagues continue the record of their experiences in the diagnosis and treatment of war and other neuroses. Dr. Hurst contributes, with Dr. Symms, an important paper on the hysterical element which is to be found in many organic affections of the central nervous system. Other articles, no less important, on such phenomena as hysterical vomiting, disorders of micturition, ocular symptoms, aphonia and convulsions, written by his co-workers, complete the number. These studies make fascinating reading, and are of the greatest medical interest and importance. Every subscriber to the monographs will wish to pay a visit to Seale Hayne, and he will be amply repaid for his trouble by so doing. Medical men who are not as yet subscribers will become so at once if they make the journey and witness the remarkable work which is being done there by, and under the inspiration of, Dr. Hurst.

The cleverness of Mr. SOMERSET MAUGHAM's last novel cannot be denied. It is somewhat fantastically named *The Moon and Sixpence*,⁹ and the main outline of the story is so simple that the publisher is able to indicate it sufficiently in seven lines on the outside paper cover. The book is entertaining, and there are many witty passages—some of them not quite free from malice. Now and then the author carries realism a little too far to be agreeable, but his object is to show in crude colours the egotism of an artist savagely seeking to express his genius. We have the author's word for it, on p. 203, that the book is meant for "family" reading, but the context suggests that this may have been written with the tongue in the cheek. The old French doctor, Coutras, and one or two other characters are drawn with much sympathy. We do not know whether the digression about the strange career of Dr. Abraham, of St. Thomas's Hospital, is taken from life, but the author understands his business so well that he makes one think it has at least a foundation of fact. The introductory chapter with its make-believe bibliographical footnotes is very ably done, and whets the reader's appetite at once.

⁴ *Anatomien Leonardo*. By Dr. H. Hopstock. Christiania: Steen'ske Bogtrykkeri og Forlag. 1919. (Demy 8vo, pp. 85; illustrated.)

⁵ *A Practical Handbook of British Birds*. Edited by H. P. Witherby, F.Z.S., M.B.O.U. Parts I and II. London: Witherby and Co. (Demy 8vo, pp. xvi + 64; 65-128; coloured plates and figures. In 18 parts. 4s. net per part.)

⁶ *Details of Military Medical Administration*. By Joseph H. Ford, B.S., A.M., M.D., Colonel, Medical Corps, United States Army. Second, revised edition. Philadelphia: P. Blakiston's Son and Co. 1918. (Med. 8vo, pp. xiii + 816; 30 figures. 5 dollars.)

⁷ *State Purchase of the Liquor Trade*. By Joseph Rowntree and Arthur Sherwell. London: G. Allen and Unwin, Ltd. 1919. (Demy 8vo, pp. 87. 1s. net.)

⁸ *Seale Hayne Neurological Studies*, vol. I, No. 3. November, 1918. Edited by Lieut.-Colonel A. F. Hurst, R.A.M.C. London: H. Milford, Oxford University Press. 1918. (Roy 8vo, pp. 56, illustrated. 3s. 6d.)

⁹ *The Moon and Sixpence*. By W. S. Maugham. London: W. Heinemann. 1919. (Cr. 8vo, pp. 263. 7s. net.)

PORTRAIT OF SIR CLIFFORD ALLBUTT.

As announced a few weeks ago, Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the members of the Association, and subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is prepared to receive subscriptions of one guinea or less.

The following is a further instalment of the list of subscribers; other subscriptions, received this week, will be acknowledged in an early issue.

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BATHS EXTENSION AT BATH.

A new wing added to the Royal Baths at Bath was opened by Dr. Addison, M.P., on June 5th. The main block of the Royal Baths, facing the Grand Pump Room, and consisting of about fifty apartments, was completed early in 1916, but the increased demand for treatment has made necessary the provision of further accommodation. The whole of one side of Bath Street has therefore been converted into a range of bathing and dressing rooms. Fortunately it has been possible to carry out this work without sacrificing the exterior façade of the buildings, for this is one of the very few completely colonnaded streets in the kingdom. No one would suppose from the outside that behind the old Georgian pillars was a modern bathing establishment with every convenience for bathing and douching and electrical and mechanical massage. The newest kind of bathing treatment installed in this wing is one in which the patient lies in a shallow bath—about nine inches deep—and a stream of water is poured through a douche over the masseur's shoulder. Other features are whirlpool and aëration baths, in both of which the water

is agitated, in the one case by a revolving turbine and in the other by compressed air driven through a series of finely perforated tubes in the bottom of the bath.

Dr. Addison, who was welcomed to the city by the Mayor (Mr. A. W. Wills), in his speech at the opening ceremony, referred to the ancient history of Bath, its stateliness and ceremony and fashion, and to its modern developments, which proved it to be as virile and full of imagination as ever. Virility and imagination were needed in these days, by municipalities as by individuals, and he congratulated the West of England spa upon its possession of these qualities. The Act of Parliament establishing a Ministry of Health had received the royal assent two days previously, so that on the day before at Bristol and on that day at Bath the President of the Local Government Board was making his last public oration and the Minister of Health his first. The establishment of a Ministry of Health, said Dr. Addison, was a most significant indication of the national purpose. Its more immediate effect was to concentrate in one body the duties, so far as they could be exercised by any State department, of safeguarding and promoting the interests of the health of the people. That in itself marked a revolution in our method of approaching and dealing with these matters. It might well be that, in time to come, as the local health services were developed, the Ministry of Health would look to the Bath Corporation to make as fully available for the service of the country as might be possible the local advantages which Bath enjoyed. Whilst it would be the first duty of the Ministry of Health—he hoped before very long—to make proposals to Parliament in connexion with the consolidation and development of local health services, if they read the signs of the times aright they would not be far wrong in supposing that, as in the past, certain responsible duties—duties and not options—had been laid by the Government upon local authorities, that principle would find new extensions, not only in respect to health services but also to housing. He was glad to know that the Bath Corporation had housing schemes in hand, and in the furtherance of those schemes they could count upon the sympathy of his department without, he hoped, being troubled by red tape. He was well aware of the difficulties which surrounded the whole housing question, but both from the point of view of the provision of useful employment and from that of social well-being no purpose could be more urgent. The housing question, however, was common to all localities, but healing springs were the property only of a few. He heard with pleasure of the readiness of the Bath Corporation to co-operate with the Ministry of Health in placing its resources at the service of the whole community, and he was sure that in this matter, as in the general development of its natural properties, Bath would ably sustain its reputation.

Dr. PRESTON KING, in proposing a vote of thanks to Dr. Addison, expressed regret that in Governments past and present there had not been more doctors. He believed that Dr. Addison was the first medical man to hold a position so high in the councils of the State. Doctors were a necessary institution, and even if all the medicine in the *Pharmacopœia* were thrown overboard, the profession would still be necessary to teach people how to keep well.

Speeches were also delivered by Mr. G. T. COOKE (chairman of the Baths Committee) and others, pointing the moral of Bath's war record. More than two hundred thousand "war baths" have been administered, the greater number, of course, swimming and shower baths for troops in training, but more than forty thousand have been medical treatments for sick or wounded officers and men who have come, as did the soldiers of ancient Rome, to gain new vigour from the health-giving springs.

THE American Red Cross and the United States Children's League have offered £60,000 to the Paris Faculty of Medicine for the foundation of an institute of puericulture on condition that a further sum of £40,000 shall be raised in France. For this purpose a committee has been formed in Paris, and in its name the Dean of the Faculty, Professor Roger, has issued a strong appeal to the people of France. Already contributions amounting to about £20,000 have been received.

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SATURDAY, JUNE 14TH, 1919.

THE WHIRLIGIG AT OXFORD.

"Thus the whirligig of time brings in his revenges." Oxford with a coy air of martyrdom may boast herself the home of lost causes, but when the men who seemed to lose, who in their generation lost, had patience, the whirligig has brought in its revenge. The Oxford whirligig moves with the majestic deliberation of some sidereal revolution, but is as inevitable. Of all lost causes in Oxford none seemed more utterly lost than the cause of science. Opprobrious terms with Old English roots were applied to it; has not an Oxford dictionary defined "stink (n.pl. slang)" as "chemistry, natural science, as subject of study"? Even the science of astronomy, which it might have been supposed would, by reason of its respectable antiquity, have commanded more consideration, was allowed to decay; in so much that when the *Cista Mathematica*—known by an inventory printed in 1697 to have contained the elaborate instrumental outfit of the Savilian Professors of Astronomy—was opened in recent times there remained two beggarly four-inch spheres of beechwood "bisected on the ecliptic."

Oxford ceased for generations to be a school of science, and thus failed in her duty, as was presently borne in upon her by the march of events and of knowledge. Doubtless she has suffered in fame and influence, but not irreparably. There were always, in the nineteenth century at least, a few faithful found among the faithless, and their faith has removed mountains. Science—let us go again to the Oxford Dictionary for the definition, "systematic and formulated knowledge" of natural phenomena—if it has not yet won its rightful share in the life of the university, has come to play in it a part already not small and destined to become greater. Medicine in Oxford decayed so completely that the position was truly expressed in the epigrammatic title of a leading article in this JOURNAL, "The Lost Medical School." The title aroused resentment, as epigrams sometimes will, but it helped to awaken Oxford medical graduates to the truth, and their influence has been one of the causes contributing to the happy fact that the Oxford medical school has found itself.

On Tuesday last Convocation decided that the University should apply for a Government grant or grants on the conditions stated by the President of the Board of Education—namely, that the University should co-operate with the Government in an inquiry into its whole resources and the use which is being made of them. From the speech of the mover (the Warden of Wadham) it appeared that one main motive for seeking a Government grant was the need to find money for science and to ensure that the teachers of science should have something approaching a living wage. Dr. Perkin, professor of chemistry, insisted that the teaching of science was an integral part of the work of the University; it was, he said, inconceivable that its science department should be so hampered for want of money that its teaching should fall below that of other universities. The proposal was carried by 126 votes to 88.

Oxford is now also, and for the third time in twelve years, in the throes of a controversy as to compulsory

Greek. Resident members of the university have by an overwhelming vote in congregation carried a statute to make Greek optional in the examinations leading to the B.A. degree; but it is expected that in the final vote in Convocation on Tuesday next there will be a heavy vote by graduates outside Oxford in favour of retaining compulsory Greek in Responsions. This examination is the first on the way to the B.A., and if Greek ceases to be compulsory in it the consequential changes will certainly remove compulsory Greek from all examinations for degrees other than those given for classical studies; thus Greek will cease to be a compulsory subject for the B.A. degree. If Greek is made optional in Responsions it will have an effect upon the secondary schools, for most boys take the examination from school or pass some exempting examination, such as the Oxford and Cambridge Schools Examination, while still at school. The effect will be the greater because Cambridge has already taken a similar course. We published last week a letter on the subject from Dr. Ainley Walker, lecturer in pathology in the university, and this week an appeal, signed by teachers in the Oxford medical school, to medical graduates to go to Oxford on June 17th and vote. Another appeal asking graduates to vote against the proposed statute abolishing compulsory Greek has been issued. The signatories fear that if it is passed the distinctive work and influence of Oxford as the chief home of classical study in this country will decay. They propose as a compromise that Greek should be an optional subject for students of science and mathematics, as well as of agriculture, forestry, and engineering, but should be retained in other cases. They plead that one university shall remain in Britain where "the humane studies are traced back to the springs where they rise." To others the demand that Greek should be compulsory for the B.A. degree seems tantamount to an admission of failure. Does not the demand imply forgetfulness of the history and purpose of universities? They came into existence in response to the demand of youth for knowledge. Greek, which at the Renaissance opened the door of thought and speculation, was eagerly studied on that account. If to-day the need has passed away, and therewith the demand to be taught Greek, is it not the part of Oxford to reconsider its policy of compulsion?

But science in Oxford is far from being an enemy of the old learning. The Regius Professor of Medicine was President of the Classical Association when it met in Oxford last month, and gave an address which left no doubt about this. Afterwards he opened an exhibition of early scientific instruments gathered together from various collections in Oxford, but chiefly from Merton College, where in a cupboard a number had lain forgotten but undamaged. By his kindness a few persons interested in such matters had the opportunity on Whit Monday of spending some interesting hours in the picture gallery of the Bodleian Library, when Mr. Gunther told the story and described the purpose of the objects in the collection which he had been chiefly instrumental in bringing together—astrolabes in their perfection, telescopes in an early stage, and among the microscopes a "double microscope for viewing the circulation of the blood" (1693). Also he showed the book in which an Oxford mathematician first used, to the discomfiture of his printer, the + and - signs, now universally employed. Thereafter Dr. Singer demonstrated a large number of early medical drawings and books, and drew conclusions as to the history of scientific and especially anatomical literature of a very far-reaching

nature, which will require careful and respectful consideration when all the evidence he has accumulated is fully set out. There is much material for the history of science in Oxford, and before the war a school was growing up. Now there are welcome signs of its revival, and it is the ambition of the young school, under the inspiration and with the encouragement of Sir William Osler, presently to embark on a history of science which may be the complement of the great modern history issued by the sister University. It will be as appropriate as fortunate if this aspiration be fulfilled, since Oxford has always been disposed to look for the spirit behind the achievement. Should the modern spirit in Oxford make such a history it would be indeed *une bonne revanche*.

FRENCH WAR SURGERY.

THE complete establishment within the fighting zone of centres of study and instruction by our French colleagues was the outcome of tentative efforts in that direction in 1915 and 1916.

When the French saw that the war was to be a long one, they adopted a general scheme whereby groups of medical officers, twenty to forty in number, could be brought back from the front line and given a short course of instruction mainly in the treatment of war wounds. One of these centres was placed at the Hôpital d'Evacuation (corresponding as near as may be to our casualty clearing station) at Bouleuse. The activity of this field university continued during the summer of 1917 up to January, 1918. We are unable to locate Bouleuse, but as "the military history of the Bouleuse centre was stirring and its end tragic," it probably was involved in the last great German drive. There were gathered together professors of the faculties, hospital surgeons, and highly qualified specialists in various departments of war surgery, for the purpose of systematizing and teaching the principles of the treatment of war wounds. Though in the course of things the study centre was swept away, the teaching has been preserved in the volume before us. *Leçons de Chirurgie de Guerre* is edited by Cl. Regaud of the Pasteur Institute, and published under the auspices of the Military Medical Service.¹ The names of Professor Regaud's collaborators are a sufficient guarantee that we shall find collected together in this volume the best and the final teaching in war surgery of the French school. Leriche, Nogier, and Policard of Lyon; Roux-Berger, Lecène, Guillaumin of Paris, Tissier of the Pasteur Institute, Piolet of Clermond-Ferrand, and Jeanbrau of Montpellier are some of the authors, each well known in the French surgical world.

Tissier deals with the bacteriology of wounds. The surgical deductions of practical importance are worth quoting. He points out that the gravity of putrid wounds depends on the anaërobic process, but as anaërobic organisms cannot live in healthy tissue they must be assisted by aerobic organisms, or a tissue deprived of its blood supply, or, better still, by both of these conditions. Besides this, the more or less rapid extension of the process depends on the nature of the super-added aerobic. Further, in purulent wounds the infection will develop just as fast as it finds lacerated tissue; each wound possesses a peculiar microbial flora, and its evolution depends on that flora. Only the most careful excision of dead tissues performed with the greatest possible rapidity can arrest the anaërobic process and paralyse the development of the aerobic infection. Then, as every open wound is

exposed to secondary infection, the method of prevention is to close by suture. The streptococcus is invariably to blame for rapid extension of putrid or purulent infection. He accepts the dictum of Gross: every wound not containing streptococci ought to be closed by primary suture, and, if excision has been possible, ought to heal.

Transfusion of blood is described by Jeanbrau. He maintains the great efficiency and ease of the citrated blood method. The lower end and angled nozzle of an ampoule modelled on Kimpton's is charged with 25 c.cm. of 10 per cent. sodium citrate solution. The nozzle is inserted into the vein of the donor, pointing distally, and the blood is coaxed into the ampoule by suction and is citrated as it passes in. When 500 c.cm. have been collected the nozzle is inserted into the recipient's vein proximally, and the blood is helped out of the ampoule by the pump. The author is frank enough to say that he never worried about the special selection of a donor. If he had time to do a Wassermann and the haemolysis and agglutination test, well and good; but apparently any attempt to find out how the patients and donors stood in relation to Moss's groups was not made. Only by questioning did he exclude syphilis and malaria. On one occasion he inoculated a patient, presumably a Frenchman, with malaria, from the blood of a Senegalese; but the interesting point of possible racial blood incompatibility is not mentioned.

Primary suture of wounds is described by Lemaitre. He began this method of treatment in July, 1915, and in the two years following he had 48 per cent. of complete successes in all sorts of wounds. From July, 1917, to February, 1918, in wounds of the soft parts, some of these involving bone (without fracture) and joints and vascular lesions, he achieved success in nearly 80 per cent. Lemaitre's operative method consisted in suture after meticulous aseptic excision of the wound, careful haemostasis and "fixation" by thorough swabbing with 5 per cent. tincture of iodine—"fixation" means that the organisms on the surface of the wound are killed along with the superficial cells.

The chapters on the operative and on the orthopaedic treatment of fractures are by Leriche, as also is the lecture on wounds of joints. The well known technique of this surgeon, by which he preserves the periosteum and especially its subjacent osteogenetic layer, by carefully chipping off the ragged soiled splinters of bone, is fully set forth and deserves to be studied by all British surgeons. Similarly we commend the chapter on pulmonary wounds by Roux-Berger—that most accomplished surgeon and (a rare finding) excellent English scholar. He insists on pulmonary wounds being dealt with in the same manner as wounds of limbs: cases requiring operation should be done early, the broken pieces of ribs removed, the pleural cavity thoroughly dried out, and the lobe of the injured lung should be delivered into the wound, the pulmonary wound excised, the foreign body removed, the lung sutured again, and finally the pleural cavity should be completely closed off.

Consideration of space prevents us quoting further from these lectures. We most heartily commend them to the attention of English-speaking surgeons. The book should be of great historical value, and the experience embodied in it will certainly find a place in future French textbooks of surgery. British readers will recognize, what has been already evident to those of us fortunate enough to meet French surgeons and see their work, that a brilliant revival of French surgery was imminent before the war, which has indeed acted as a stimulant to greater enterprise.

¹ *Leçons de Chirurgie de Guerre*. Published under the direction of Cl. Regaud, Professeur à l'Institut Pasteur, etc. Paris: Masson et Cie. (Med. 8vo, pp. 394; 171 figures. Fr. 9 + 10 per cent.)

BIRTHDAY HONOURS.

THE Birthday Honours List, which is being issued in sections, contains some interesting announcements of the recognition of the services rendered during the war by temporary and territorial medical officers. The K.C.B. is conferred on Sir Anthony Bowlby, who was consulting surgeon at General Head Quarters in France from the black autumn of 1914 until the other day. The K.C.M.G. is conferred on Major-General Sir Wilmot Herringham, who served as consulting physician at various times of the First, Third, and Fourth Armies, and was at Head Quarters during the greater part of the war; on Major-General Cuthbert Wallace, who was consulting surgeon with the First Army throughout; on Colonel W. T. Lister, who was ophthalmic specialist with the armies in France; and on Major-General Richard H. Luce, C.B., of Derby, a territorial medical officer of long standing, who was D.D.M.S. of the Eastern Force. Among officers of the Australian Army Medical Corps honoured are Sir Neville R. Howse, V.C., K.C.B., Director of Medical Services, and Colonel Henry C. Maudsley, of Melbourne, who served in Europe throughout the war; both receive the K.C.M.G. Surgeon-General Charles S. Ryan, C.B., Consulting Surgeon to the Australian Force, receives the K.B.E. The same distinction is conferred upon a number of consulting officers of the Territorial Force who served chiefly in this country; among them are Colonel Henry Davy, C.B., of Exeter, who has been consulting physician in the Southern Command; Lieut.-Colonel D'Arcy Power; Colonel Hamilton A. Ballance, C.B., of Norwich; Colonel Charters J. Symonds, C.B., Sir Arthur W. Mayo-Robson, who have been consulting surgeons of the Southern Command; on Sir Robert Jones, C.B., Inspector-General of Military Orthopaedics; on Lieut.-Colonel Sir Shirley F. Murphy, who placed his immense knowledge of London sanitary administration at the disposal of the London Command; on Colonel G. Sims Woodhead, Professor of Pathology in the University of Cambridge; on Lieut.-Colonel Douglas Reid, C.M.G., of St. Thomas's Hospital, who has been President of the War Office X-ray Committee; and on Lieut.-Colonel F. W. Mott, F.R.S., of the value and importance of whose work at the Maudsley Military Neurological Hospital our readers have had some opportunity of judging. The medical staff of the British Forces in Italy is honoured in the person of Major-General F. R. Newland, C.B., who was D.M.S., and receives the K.C.M.G., and Colonel C. Gordon Watson, C.M.G., who receives the K.B.E. The same distinction, conferred on Colonel H. M. W. Gray, C.B., of Aberdeen, will give great pleasure to those who served with him in the Third Army in France and afterwards when he came home to work with Sir Robert Jones in the department of military orthopaedics. Among the regular officers honoured are Lieut.-General Sir William Babbie, K.C.M.G., who receives the K.C.B.; Major-General Harry N. Thompson, who was D.M.S. of the First Army and is now D.M.S. of the army on the Rhine, who receives the K.C.M.G.; and Major-General G. B. Stanistreet, C.B., Deputy Director-General at the War Office, and Colonel R. H. Firth, C.B., so well known as an authority on general as well as military hygiene, who receive the K.B.E. The distinction of C.B. is conferred on Colonel William Taylor of Dublin, one of the consulting surgeons to the forces. Lists of other honours are printed at p. 749, where also will be found particulars of the services of medical officers of the Royal Navy who have received appointments in the Orders of knighthood. Of the civil honours conferred we may note the knightships to Dr. John Baker, Superintendent of the Broadmoor Lunatic Asylum, and to Dr. Douglas Shields, a Melbourne graduate who has been senior surgeon to the Officers' Hospital, Park Lane, London, during the war, and the C.B. to Dr. R. W. Branthwaite, one of the Commissioners of the Board of Control.

THE FILTER-PASSING VIRUS OF INFLUENZA.

A SERIES of three papers on filter-passing virus in certain diseases, contributed to the Section of Preventive Medicine and Pathology at the clinical and scientific meeting of the British Medical Association last April, was published in the *BRITISH MEDICAL JOURNAL* on May 17th. The first, by Major-General Sir John Rose Bradford, gave a general account of observations made in polyneuritis, encephalitis, trench fever, influenza, and nephritis; the second, by Captain E. F. Bashford, M.D., described the experimental reproduction of influenza, nephritis, and encephalitis by inoculating subcultures of the isolated virus; and the third, by Captain J. A. Wilson, the bacteriological character of these filter-passing organisms. These authors had published a preliminary paper in our columns on February 1st, and a full account of the observations on acute infective polyneuritis in the *Quarterly Journal of Medicine* early this year. In the current issue of the same periodical the same three authors publish three papers on the filter-passing virus, illustrated by excellent drawings of the appearances presented by artificial cultivations of the organism and of the effects produced by experimental inoculation. Captain Wilson summarizes his bacteriological observations by stating that an organism possessing definite morphological and cultural characters has been isolated from cases of influenza, and can be demonstrated in the blood, sputum, and other exudates, and in the tissues *post mortem* by appropriate methods of staining. It passes through bacteriological filters, has been seen microscopically in the filtrate, and has been cultivated therefrom. It has not been found in a large series of controls. At the onset of the disease blood culture is the only reliable method of examination. Though organisms can be seen microscopically in stained films of the blood the procedure is difficult and lengthy, and may fail even in the hands of one who has had considerable experience. When sputum is obtainable, usually on the second day, microscopic examination is sufficient for the purpose of clinical diagnosis. The films may be stained by Gram's method or by methylene blue. There is no difficulty in finding the organisms, and their size, arrangement, and distribution would appear to be diagnostic. The same is true of pleural fluids and other exudates. Sir John Rose Bradford, in summing up the matter, says that inoculation of pure cultures of the organism has reproduced in the experimental animal the characteristic lesions of influenza in man, including the peculiar lung lesion, the fatty change in the heart and liver, the nephritis, the cerebral lesions, and the peculiar haemorrhagic lesion in the voluntary and cardiac muscles. The experimental results revealed further the remarkable vascular lesions produced in the small arterioles by the virus of influenza. They therefore support the view that influenza is not a local disease of the respiratory tract, but a general infection of the blood stream, with localization of definite lesions in the smaller blood vessels, the vessels of the lung suffering to a very special degree. Tissue so damaged, it may be assumed, is specially prone to suffer secondary infections, and this may be held to account for the frequent prominence of pulmonary lesions in influenza. The virus is allied to the filter-passing virus of the other diseases already mentioned, resembling them in its morphology, in cultural reactions, and to some extent in the action on living tissues. There are, however, individual differences which justify the authors in stating that the lesions produced by the filter-passing virus of influenza are specific and characteristic. Appended to the paper are clinical notes by Dr. F. Clayton of sixty cases of influenza from which the virus was recovered. The cases are grouped under four heads: firstly, mild cases, in which the upper part of the respiratory tract alone is affected; secondly, haemorrhagic influenza, the most fatal type; thirdly, influenzal pneumonia, and fourthly, influenzal pleurisy with effusion.

The haemorrhagic type is characterized by the sudden onset of bleeding after perhaps a few days of high temperature without localizing symptoms. The pulmonary haemorrhage is preceded by the expectoration of an increasing amount of watery sputum, which rapidly becomes blood-stained, and in a few hours intimately mixed with an abundance of pure bright blood. The haemoptysis is often accompanied by bleeding from the nose. After the onset of the haemorrhage the whole aspect of the patient is changed; he becomes increasingly cyanosed and restless and often passes quickly into a moribund state. Recovery in severe haemorrhagic cases is unusual, and their fatal character finds an explanation in the profound vascular lesions described. The great interest of these researches is obvious, and we are glad to know that Sir John Rose Bradford and his colleagues are pursuing their inquiries and that they are enjoying the hospitality of the Lister Institute. In a discourse at the Royal Institution a fortnight ago Sir John gave a general account of these researches and indicated their significance.

THE TEACHING OF PEDIATRICS.

ADVANTAGE was taken of the presence in this country of several physicians belonging to the staff of pediatric divisions of medical schools in the Dominions and the United States of America to hold an informal conference last March at the Local Government Board to consider generally the subject of pediatrics. Sir George Newman was in the chair, and we are indebted to the Secretary of the Board for a copy of a report containing notes of the speeches made and the text of a series of resolutions adopted by the conference. The print contains three appendices, one of which, defining the manner of working of schemes of maternity and child welfare in England and Wales, will be found useful for reference. The discussion did not elicit any very novel opinions, except possibly on one point, and the resolutions expressed the general view of the profession with regard to the supreme importance of breast feeding, the impropriety of suckling a child too often, and recommendations that practical and theoretical instruction in infant hygiene should form part of the training of midwives and of all persons engaged by public authorities in infant welfare work, and that maternity nursing should only be undertaken by competent and adequately trained persons, preferably by qualified midwives. A point of some novelty was contained in the statement by Dr. Ramsey, Associate Professor of Diseases of Children in the University of Minnesota, and Lieut.-Colonel G. S. Strathy, C.A.M.C., Assistant Physician to the Hospital for Sick Children, Toronto, and Demonstrator in Clinical Medicine in the University. Dr. Strathy explained that the fifth year at Toronto was entirely devoted to clinical work, and that of this period three months were given to specialties and one half of that time to pediatrics. The student attended the clinic at the Children's Hospital regularly, and might be instructed to visit the infant at its home from day to day during the interval between its visits to the clinic. The Children's Hospital was practically a university hospital, and all the sick children in the town who were in public charge came under its care. There were two sections in the hospital staff—the Pediatric Division, which looked after the child from birth until 18 months, and the Medical Division, which had it in charge from the age of 18 months to 14 years. Dr. Ramsey said that in the medical school of the University of Minnesota there was a separate department of pediatrics, with a whole-time professor, an associate professor, and its own staff of clinical assistants, mostly half-time men. In establishing a separate department Minnesota had followed the lead of Harvard. He considered that in a medical school there should be intensive teaching in pediatrics, which was a fundamental subject, and that this should be given in very close co-operation with the obstetrician. The average

medical man made the mistake of approaching a child from the pathological standpoint; it was far more important to teach the student to understand the normal infant and to recognize the causes which laid the foundations of disease. Speaking of the advantages of breast feeding, he said that there should be only five feedings in twenty-four hours—that is to say, every four hours, except at night. Children so managed thrived better and gained weight better. An interesting observation was made that whereas English, German, and American textbooks laid it down that the normal number of stools in twenty-four hours in an infant was three to six a day, with only five feeds in the twenty-four hours the number of stools was two a day. No case of acute dyspepsia occurred among 300 new-born infants carefully observed; they slept at night and their mothers slept also. Another observation bearing on the impropriety of too frequent feeding was that the German professors' allowance of a diet yielding 100 calories per kilo was not applicable to the first two weeks. In the series of 300 infants it was found that they gained most satisfactorily on from 45 to 70 calories per kilo, and that when the amount was increased to 100 they tended to have diarrhoea. The conference adopted two resolutions with regard to the education of medical students; the first was: "That every medical student preparing for a registrable qualification shall receive adequate training in the subjects of infancy and childhood in health and disease; that attendance in a department where instruction is given in these subjects should be compulsory for a period of not less than three months; and that some special part of the final examination in medicine should be devoted to these subjects." The second was: "That, as far as practicable, this study shall follow upon, and be co-ordinated with, a satisfactory course in obstetrics and gynaecology, and should be made available for post-graduate students; further, we are convinced that the present training in obstetrics leaves much to be desired, especially in regard to the lack of facilities for bedside teaching in midwifery."

THE CONSTITUTION OF NITROGEN.

THE discovery by Becquerel in 1896 that uranium salts spontaneously emitted radiations led to investigations into the properties of radio-active substances, which showed that the atoms of this class of bodies were not the immutable units of matter the chemist had assumed. It was found that in fact atoms of radium and other radio-active bodies were perpetually changing by the expulsion of particles. Such observations stimulated speculation and experiment as to the constitution of the atom, and we have been presented with the idea of a central nucleus surrounded by particles—a kind of planetary system held together by an attractive force strong enough in most cases to prevent disruption, but weaker in radium and the other radio active substances, so that from them alpha particles are perpetually being expelled. This fact and these speculations prepared us to believe that the atoms of other substances might be compelled to undergo partial disintegration. The recent researches which Sir Ernest Rutherford related in a consecutive manner to the Royal Institution last week appear to prove that nitrogen can be compelled to undergo such disintegration. He used the alpha particle—which travels with almost inconceivable speed and possesses enormous energy—as an analytical instrument, and found that when one of them hits the nucleus of a light atom, such as that of hydrogen, in a head-on collision the hydrogen atom is displaced a certain distance in the line of motion of the particle. Owing to its swift motion and great energy the alpha particle penetrates into the structure of an atom of nitrogen before it is deflected or turned back. When this heavier atom of nitrogen is hit, a few particles are forced from it and travel as far as hydrogen atoms; they in fact

appear to be hydrogen atoms. The conditions of experiment were held to exclude the possibility that the hydrogen came from external sources, and the conclusion was that it must come from the nitrogen. It would appear as though an atom of hydrogen is chipped off from the atom of nitrogen by the alpha particle, and Sir E. Rutherford ventured the hypothesis that the nitrogen atom, the weight of which is 14, consists of a central nucleus of three atoms of helium, each of mass 4, and of two atoms of hydrogen.

VENTILATION OF CINEMA THEATRES.

THERE is a very general belief, shared, we imagine, by most members of the medical profession, that the infection of influenza is frequently spread in places of public assembly, such as churches, lecture rooms and theatres, and that among the theatres cinematograph halls are particularly to be dreaded, not because they are worse ventilated than other places, but because children and young adults visit them frequently and spend many hours in them. An investigation of the ventilation of cinematograph theatres in Birmingham has been made by Dr. W. H. Davison, one of the assistant medical officers, and his report has been presented to the Public Health Committee by Dr. John Robertson, the medical officer of health. It is suggested in the report that the standard of ventilation should be such as to ensure that the proportion of carbonic acid in the air at about the breathing level does not rise beyond twenty volumes per 10,000 of air; to achieve this it is recommended that fans should be fitted and maintained in good order, and that the space allowed for each person should be not less than 120 cubic feet. Dr. Robertson observes that the provision of adequate ventilation everywhere in a cinematograph theatre when the house is full is no easy matter, but the difficulty has been solved in some of the houses in Birmingham, where in mid-winter full houses were ventilated under the most difficult conditions. The general principles he lays down as necessary for securing adequate ventilation are, first, that efficient extraction fans must be kept continuously at work during the performance, and secondly, that adequate inlet openings must be provided and kept open in such situations as will permit of uniform distribution of the fresh air. During cold weather this incoming air must be heated, otherwise unbearable draughts will be experienced. A point made by Dr. Robertson is that doors should be so arranged that in the intervals between performances houses may be thoroughly flushed with fresh air. Unfortunately, in some of the larger houses there is no break in the afternoon and evening performances.

SYPHILIS AND HERPES ZOSTER.

CAPTAIN W. H. BROWN and Dr. B. DUJARDIN¹ have recently investigated the question of the relation, if any, between syphilis and herpes zoster. Among 12 cases of herpes zoster observed by Brown there were 2 only in syphilitic subjects, and among 19,000 cases of syphilis Major C. White observed herpes zoster during treatment with salvarsan or neo-salvarsan in two only; but these patients after discharge from hospital return to their units, and consequently herpes zoster, which is more likely to develop some time after treatment, would be reported through another channel. It is specially interesting to note the rarity of herpes zoster during the course of this form of arsenical treatment, for during the epidemic of peripheral neuritis, which also takes some time to develop, due to beer contaminated with arsenic in 1900, herpes zoster was observed to be specially frequent, and indeed suggested to Dr. E. S. Reynolds

that arsenical poisoning might be responsible for the extensive outbreak of peripheral neuritis. But among 1,200 syphilitic patients kept under observation for a much longer time than those tabulated by Major White, Dujardin found 9 cases of herpes zoster, or 0.4 per cent., as compared with an incidence of 10 cases of zoster, or 0.1 per cent., among 13,000 other patients under his observation. It would therefore seem that syphilitic patients are disposed to herpes, and it is suggested that the meningeal reaction present in the majority of luetic subjects, especially after the primary stage, opens the way to infection by the unknown cause of herpes zoster, and that inefficient arsenical treatment may in certain circumstances accentuate this syphilitic meningeal reaction, and so reinforce this predisposition to herpes zoster. It also appears that in syphilitic patients herpes zoster has a predilection for the lumbar and sacral ganglia, and hence the possibility of previous syphilitic infection should be more especially considered when the zoster involves the lower spinal ganglia. In view of the well marked inflammatory changes in the posterior root ganglia it would be natural to expect alterations in the cerebro-spinal fluid in herpes zoster, but comparatively few observations have been made on this point. The authors have accordingly examined the cerebro-spinal fluid in 42 cases of zoster, mainly non-syphilitic, and found that in the majority (28) there was some lymphocytosis, but that it varied enormously from the normal 1 or 2 up to 470 cells per cubic millimetre, 10 cases registering over 50 cells per cubic millimetre. There was no explanation for these differences, and certainly they bore no relation to the intensity of the eruption, as might perhaps have been anticipated, for on the whole the highest counts were found in patients with a very slight abortive eruption. On the other hand, some cases with a mild eruption had normal counts, and cases with acute and extensive zoster varied in an extraordinary way from a normal cell count up to 200 per cubic millimetre.

AERIAL SPAS.

In a brightly written article in the current number of the *National Review*, Captain E. Brown, R.A.M.C., first argues in favour of the truism that mankind is ever slow to change the fixed beliefs of the ages, adding the rather sarcastic corollary that his conservatism is always supported by the best expert advice of the day, and then brings forward certain novel ideas in order to disseminate in the public mind the view that there may be something in aerial medicine. Although a permanent residence in the air is not yet feasible, the development of the giant airship provides possibilities of remaining at high altitudes for considerable periods at a stretch. Thus a germ-free atmosphere (superior in this respect to that for which the rich journey to Davos-Platz) can be obtained 5,000 feet above Oldham or Bradford for those with shallower purses; and the picture of aerial hospitals for early pulmonary tuberculosis, gliding gracefully over our cities, is drawn, not as the phantom of a dream, but as a realizable possibility. The advantages and disadvantages of the altered atmospheric pressure are discussed; they are, of course, familiar, but the reader's attention is specially directed to the volume and movement of the air at high altitudes as possibly factors of considerable importance, for the degree of motion and the immense volume present at high altitudes can rarely, if ever, be obtained on the earth. The author, who certainly writes with enthusiasm, foresees vast curative possibilities from the stimulating effect thus provided, and prophesies that we may in time go to aerial spas just as we now go to Bath or Harrogate for certain diseases. A month or two ago we received from Captain H. W. Bernard, R.A.M.C., a communication in which he worked out in some detail the requirements for fitting out a captive airship as a tuberculosis sanatorium.

¹ *Brain*, 1919, xlii, 86-91.

BIRTHDAY HONOURS.

The following is a further instalment of honours conferred on the occasion of the King's birthday.

ROYAL NAVY.

The distinctions indicated have been bestowed upon the following officers of the medical service of the Royal Navy:

K.B.E.

Surgeon Rear Admiral Patrick B. Handyside, C.B.

This officer was Deputy Surgeon-General at the Royal Naval Hospital, Plymouth, on the outbreak of war. He was promoted to Surgeon Rear Admiral on April 17th, 1917, and was appointed in charge of the Royal Naval Hospital, Chatham, on August 14th, 1917, where he is still serving.

Surgeon Captain Daniel J. P. McNabb, C.B.

On the outbreak of war he served at the Medical Department as First Assistant to the Director-General. He was in charge of the landing of Belgian wounded at Dover after the fall of Antwerp in 1914, was promoted to Surgeon Captain on August 7th, 1915, and appointed Deputy Director-General Medical Department on June 5th, 1916.

Surgeon Captain Arthur Stanley Nance, C.B., R.N.

From the beginning of the war he was Naval Medical Transport Officer for Scotland, with head quarters at Edinburgh, and was largely concerned in the development of the land medical transport system in the North.

Surgeon Rear Admiral William W. Fryn, C.B.

On the outbreak of war he was in charge of the R.N. Hospital, Gibraltar, as Deputy Surgeon-General. In January, 1916, he was transferred to R.N. Hospital, Plymouth, as senior physician. He was promoted to Surgeon Rear Admiral on September 6th, 1916, and appointed in charge of R.N. Hospital, Plymouth, on April 26th, 1917, where he is still serving.

C.B.

Surgeon Captain William J. Colborne.

On the outbreak of war he was serving in the *Iron Duke*, flagship of the Commander-in-Chief, Grand Fleet, and was senior medical officer on the staff of the Commander-in-Chief until February, 1916. He was then appointed in charge of the Royal Marine Artillery, Portsmouth, where he served until promoted Surgeon Captain on September 6th, 1916. In October, 1916, he was appointed to R.N. Hospital, Haslar, where he has been in charge of the Senior Medical Section.

Surgeon Captain George T. Collingwood, M.V.O.

He was placed in charge of H.M. Hospital Ship *Soudan* on the outbreak of war and served in the Gallipoli campaign until 1915, when he was appointed to the Royal Marine Division, Forton, Portsmouth. In November, 1916, he was promoted to Surgeon Captain, and has served in R.N. Hospital, Chatham, up to the present time.

Surgeon Rear Admiral Alexander G. Wildey.

At the outbreak of war he was Deputy Surgeon-General at Haslar Hospital, where he was the senior operating surgeon. In January, 1916, he was transferred as principal medical officer in charge of R.N. Hospital, Gibraltar, where his administration was most successful. He was promoted Surgeon Rear Admiral on September 13th, 1918, and was appointed in charge of Haslar Hospital in October, 1918, where he is still serving. He is also naval member of the Medical Consultative Board.

C.B.E.

Surgeon Captain Octavins W. Andrews, R.N.

He served in H.M.S. *Revenge*, and during the early bombardments of Zeebrugge, and in *Prince George* in the Gallipoli campaign. He was then in charge of the East London Recruiting District until July, 1917, when he was appointed to H.M.S. *New Zealand* in the Grand Fleet, and he served therein till the end of hostilities. He was mentioned in dispatches by the Vice-Admiral Commanding in the Eastern Mediterranean and awarded the Silver Medal for Valour by H.M. King of Italy in November, 1917.

Military Cross.

Temporary Surgeon Lieutenant Reginald K. Shaw, R.N., attached *Anson* Battalion R.N. Division, R.N.V.R.

K.C.B.

Major-General (temporary Lieutenant-General) Sir William Babbie, V.C., K.C.M.G., C.B., K.H.S.

Temporary Major-General Sir Anthony A. Bowlby, K.C.M.G., K.C.V.O., C.B.

K.C.M.G.

Major-General Sir Neville R. Howse, V.C., K.C.B., A.A.M.C.

Major-General Foster Reuss Newland, C.B., C.M.G.

Major-General H. Neville Thompson, C.B., C.M.G., D.S.O.

Temporary Major-General Sir Wilnot P. Herringham, C.B.

Temporary Major-General Cuthbert S. Wallace, C.B., C.M.G.

Colonel (temporary Major-General) Richard H. Luce, C.B., C.M.G., T.F.Res.(A.M.S.).

Colonel Henry Carr Maudsley, C.M.G., C.B.E., A.A.M.C.

Temporary Colonel Wm. Tindall Lister, C.M.G.

K.B.E.

Colonel (temporary Major-General) George B. Stanistreet, C.B., C.M.G., A.M.S.

Colonel (honorary Surgeon-General) Charles S. Ryan, C.B., C.M.G., A.A.M.C.

Colonel Robert H. Firth, C.B., A.M.S.

Temporary Colonel C. Gordon Watson, C.M.G., A.M.S.

Lieut.-Colonel and Brevet Colonel G. Sims Woodhead, O.B.E., R.A.M.C.(T.F.).

Lieut.-Colonel (temporary Colonel) Henry Davy, C.B., R.A.M.C.(T.F.).

Lieut.-Colonel Sir Shirley F. Murphy, R.A.M.C.(T.F.).

Lieut.-Colonel D'Arcy Power, R.A.M.C.(T.F.).

Major (temporary Major-General) Sir Robert Jones, C.B., R.A.M.C.(T.F.).

Major (temporary Colonel) Hamilton A. Ballance, C.B., R.A.M.C.(T.F.).

Major (temporary Colonel) Charters J. Symonds, C.B., R.A.M.C.(T.F.).

Major and Brevet Lieut.-Colonel Frederick W. Mott, F.R.S., R.A.M.C.(T.F.).

Major (temporary Colonel) Henry McI. W. Gray, C.B., C.M.G., R.A.M.C.(T.F.).

Major (temporary Lieut.-Colonel) Sir Arthur W. Mayo-Robson, C.B., C.V.O., R.A.M.C.(T.F.).

Captain (temporary Lieut.-Colonel) Archibald Douglas Reid, C.M.G., R.A.M.C.(T.F.).

Knights Bachelor.

Dr. John Baker, Superintendent of the Broadmoor Lunatic Asylum.

Mr. Douglas Shields, Administrator and Surgeon-in-Chief of the hospital at 17, Park Lane, which he gave free of charge for the use of the War Office.

C.B.

Dr. Robert Welsh Branthwaite of the Board of Control.

Temporary Colonel William Taylor, F.R.C.S.I.

C.M.G.

Lieut.-Colonel and Brevet Colonel Allan James Macnab, C.B., I.M.S.

C.S.I.

Colonel Charles Mactaggart, C.I.E., I.M.S., Inspector-General of Civil Hospitals, United Provinces.

C.I.E.

Lieutenant-Colonels: Ralph Henry Maddox, I.M.S., Richard Arthur Needham, D.S.O., I.M.S., Deputy Director-General I.M.S., John Stephenson, I.M.S., Principal and Professor of Biology, Government College, Lahore.

Majors (acting Lieutenant-Colonels): William M. Anderson, I.M.S., Arthur B. Fry, D.S.O., I.M.S., Leonard E. Gilbert, I.M.S., William D. A. Keys, I.M.S., Patrick L. O'Neill, I.M.S.

Captain (temporary Major) Gordon G. Jolly, I.M.S.

D.S.O.

Lieut.-Colonels: Hugh B. Lewers, O.B.E., 11th Field Ambulance, A.A.M.C.; Ronald H. Macdonald, M.C., 4th Field Ambulance, C.A.M.C.; Gerald Eugene M. Stuart, A.A.M.C., commanding 3rd Light Horse Field Ambulance; Clive W. Thompson, 14th Field Ambulance, A.A.M.C.; Frank C. Wooster, 13th Field Ambulance, A.A.M.C.

Major and Brevet Lieut.-Colonel (acting Lieut.-Colonel) Herbert M. H. Melhuish, I.M.S., commanding 11th Combined Field Ambulance.

Majors (temporary Lieut.-Colonels): Philip J. Jory, 2nd Field Ambulance, N.Z.A.M.C.; John R. Muirhead, 5th Field Ambulance, A.A.M.C.; Clive V. Single, A.A.M.C., commanding 4th Light Horse Field Ambulance.

Majors (acting Lieut.-Colonels): Samuel H. Lee Abbott, I.M.S., attached 14th Cavalry Brigade Field Ambulance; Charles M. Drew, 134th Field Ambulance, R.A.M.C.; Richard H. M. Hardisty, M.C., 6th Field Ambulance, C.A.M.C.; Donald de C. O'Grady, R.A.M.C.; Henry T. Samuel, R.A.M.C.(T.F.), commanding 170th Indian Combined Field Ambulance; Ernest R. Selby, 8th Field Ambulance, C.A.M.C.

Majors: A. Henry Falkner, R.A.M.C.(T.F.) attached 8th Battalion, Liverpool Regiment; Marcus V. Southey, 1st Field Ambulance, A.A.M.C.

Captains (acting Lieut.-Colonels): Henry N. Burroughes, 2/2nd (South Midland) Field Ambulance, R.A.M.C.(T.F.); John H. P. Fraser, M.C., R.A.M.C.(T.F.), attached 53rd Field Ambulance, R.A.M.C.; Rudolf W. Galloway, 2nd Cavalry Field Ambulance, R.A.M.C.; For R. Hudleston, 135th Field Ambulance, R.A.M.C.; Arthur C. H. McCullagh, 2/2nd (Northumbrian) Field Ambulance, R.A.M.C.(T.F.); John Miller, M.C., 1/2nd (N.M.) Field Ambulance, R.A.M.C.(T.F.); E. Phillips, M.C., 106th Field Ambulance, R.A.M.C.; John W. C. Stubbs, M.C., 16th Field Ambulance, R.A.M.C.; Edmund W. Vaughan, M.C., 23rd Field Ambulance, R.A.M.C.; Leslie F. K. Way, 101st Field Ambulance, R.A.M.C.

Captain and Brevet Major (acting Lieut.-Colonel) Percy S. Tomlinson, R.A.M.C.

Captain (temporary Major) Charles J. O'Reilly, M.C., 70th Field Ambulance, R.A.M.C.

Temporary Captains: Guy de H. Dawson, R.A.M.C., Allen E. Thompson, M.C., R.A.M.C., attached 8th Battalion York and Lancashire Regiment.

Bar to the Military Cross.

Captain (acting Major) Henry Joseph Milligan, M.C., R.A.M.C., T.F. (M.C. gazetted June 4th, 1917).

Military Cross.

Captains (acting Majors): Andrew R. F. Clarke, R.A.M.C. (S.R.), attached 154th Indian Combined Field Ambulance; Alexander E. Drynan, 56th Field Ambulance, R.A.M.C.; Alfred J. Dunlop, 43rd Field Ambulance, R.A.M.C.; William P. Ferguson, 2/3rd East Lancashire Field Ambulance, R.A.M.C. (T.F.); Alexander M. Gibson, 1/2nd East Lancashire Field Ambulance, R.A.M.C.(T.F.); Alfred M. Hughes, 4th London

Field Ambulance, R.A.M.C.; Thomas B. McKee, 2/2nd Home Counties Field Ambulance, R.A.M.C.; John F. W. Sandison, R.A.M.C.(S.R.); Sidney Scott, R.A.M.C.(T.F.), attached 48th Field Ambulance.

Captains: Laurence Ball, R.A.M.C.(T.F.), attached 1/4th Battalion Royal Berkshire Regiment (T.F.); Thomas D. Bennett, 13th Canadian Field Ambulance, C.A.M.C.; David H. Bodycomb, 1st Australian Field Ambulance, A.A.M.C.; William K. Churchouse, R.A.M.C.(T.F.), attached 2/20th Battalion London Regiment; Archie S. Cockburn, A.A.M.C., attached 5th Battalion Australian Infantry; David G. Gardiner, R.A.M.C., attached 9th Battalion Devon Regiment; Hector C. Hall, C.A.M.C., attached H.Q. 2nd Canadian Division; Arthur G. P. Hardwick, 59th Field Ambulance, R.A.M.C.; Alistair C. Macdonald, R.A.M.C.(S.R.); O'Connell O'Sullivan, R.A.M.C.(T.F.), attached 14th Battalion Royal Warwick Regiment; Henry J. Rice, R.A.M.C.(S.R.), attached 10th Battalion Liverpool Regiment; Albert H. Veitch, 3rd Canadian Field Ambulance, C.A.M.C.; Josiah Walker, R.A.M.C.(T.F.), attached 270th Brigade R.F.A.; George H. H. Waylen, R.A.M.C.(T.F.), attached 1/4th Battalion Wilts Regiment (T.F.); George S. Williamson, 2/1st South Midland Field Ambulance, R.A.M.C.(T.F.).

Temporary Captains (acting Majors): Robert K. Birnie, R.A.M.C.; Walter Crabtree, 93rd Field Ambulance, R.A.M.C.; Joseph S. Doyle, 104th Field Ambulance, R.A.M.C.; Wilfred V. Macaskie, R.A.M.C.; Allan Massey, 111th Field Ambulance, R.A.M.C.; Arthur Herbert Spicer, R.A.M.C.; Henry W. Turner, 104th Field Ambulance, R.A.M.C.; Alfred S. Wakely, 1st Field Ambulance, R.A.M.C.

Temporary Captains: Owen A. Beaumont, R.A.M.C., Robert B. Carter, R.A.M.C., Howard E. Collier, R.A.M.C., attached 1st Battalion Gloucester Regiment; Max E. Delafield, R.A.M.C., attached 1/3rd (East Lancashire) Field Ambulance; George E. Elkington, 103rd Field Ambulance, R.A.M.C.; Gilbert J. Farie, 141st Field Ambulance, R.A.M.C.; John B. Galligan, R.A.M.C., attached 62nd Brigade, R.G.A.; Joseph Graham, 38th Field Ambulance, R.A.M.C.; James L. Hendry, R.A.M.C., attached 55th Army Brigade, R.G.A.; George A. Hodges, R.A.M.C., attached 5th Battalion Tank Corps; Havelock T. Lippiatt, R.A.M.C., attached 93rd Brigade, R.G.A.; John B. McCabe, R.A.M.C., Roderic MacGill, R.A.M.C., attached 6th Tank Battalion; John McMillan, R.A.M.C., attached 1st Battalion Tank Corps; Duncan Malloch, R.A.M.C., attached H.Q. 150th Army Brigade, R.F.A.; John B. Matthews, R.A.M.C., attached 14th Battalion Oxford and Bucks Light Infantry, T.F.; William L. Paterson, R.A.M.C., attached H.Q. 17th Brigade R.G.A.; William M. Penny, R.A.M.C., attached 64th East Lancs Field Ambulance T.F.; James D. Robertson, R.A.M.C., attached 19th Battalion Machine Gun Corps; Robert H. Thomson, R.A.M.C., attached 7th Cavalry Field Ambulance; Eric M. Townsend, R.A.M.C., Mohammad Salamat Ullah, I.M.S., attached 1/152nd Punjab, I.A.

Lieut. Arthur Kennedy, R.A.M.C.(S.R.), attached 2/3rd Home Counties Field Ambulance R.A.M.C.(T.F.).

Temporary Quartermaster and Captain Henry G. Miller, 9th Field Ambulance R.A.M.C.

C.B.E.

Major-General Oliver R. A. Julian, C.B., C.M.G., A.M.S.

Colonels: John G. Adami, C.A.M.C., John D. Alexander, D.S.O., late R.A.M.C.; Thomas B. Beach, C.M.G., A.M.S., Frank W. Begbie, late R.A.M.C.; Wilfred W. O. Beveridge, C.B., D.S.O., late R.A.M.C.; James W. Bridges, C.A.M.C., Thomas W. Gibbard, C.B., K.H.S., late R.A.M.C.; Percy G. Goldsmith, C.A.M.C., Henry W. Grattan, D.S.O., late R.A.M.C.; Robert I. D. Hackett, R.A.M.C. (R. of O.), Wilfrid E. Hudleston, C.M.G., D.S.O., late R.A.M.C.; James A. Hutchison, C.A.M.C., Henry H. Johnstone, C.B. (R.F.), late R.A.M.C.; Robert L. R. Macleod, C.B., R.A.M.C., Reginald J. Millard, C.M.G., A.A.M.C., Frederick J. Morgan, C.M.G., late R.A.M.C.; Daniel O'Sullivan (R.P.), A.M.S., Edgar M. Pilcher, C.B., D.S.O., late R.A.M.C.; Harold V. Pryne, D.S.O., late R.A.M.C.; Herman M. Robertson, C.A.M.C., John C. B. Statham, C.M.G., late R.A.M.C.; Philip G. Stock, C.B., S.A.M.C., Hugh S. Thurston, C.B., C.M.G., late R.A.M.C.; Octavius Todd (R.P.), late R.A.M.C.; Charles R. Tyrrell, C.B. (R.P.), late R.A.M.C.

Brevet Colonel Abraham W. Browne (R.P.), R.A.M.C.

Temporary Colonels: Albert Carless, A.M.S., Sir Arthur Chance, A.M.S., John Marshall Cowan, M.D., A.M.S., Leonard S. Dudgeon, C.M.G., A.M.S., Thomas R. Elliott, D.S.O., F.R.S., A.M.S., Francis Kelly, R.A.M.C.(T.F.), Walter McKeown, C.A.M.C., Joseph P. O'Carroll, A.M.S., John H. Parsons, A.M.S., James Sherren, R.A.M.C., A. E. Webb-Johnson, D.S.O., R.A.M.C.

Lieut.-Colonels and Brevet Colonels: James Paul Bush, C.M.G., R.A.M.C.(T.F.), Reginald J. C. Cottell (R.P.), R.A.M.C., William I. E. Eames, C.B., R.A.M.C., Archibald B. Gemmel, R.A.M.C.(T.F.), Louis K. Harrison, R.A.M.C.(T.F.), Herbert P. Hawkins, R.A.M.C.(T.F.), Frank Marsh, R.A.M.C.(T.F.), Robert R. H. Moore (R.P.), R.A.M.C., C. W. Mansell Moullin, R.A.M.C.(T.F.), Frederick H. Westmacott, R.A.M.C.(T.F.).

Lieut.-Colonels (temporary Colonels): H. Gilbert Barling, C.B., R.A.M.C., Laurence J. Blandford, R.A.M.C.(T.F.), Arthur Winniett Nunn Bowen, D.S.O., R.A.M.C., Bernard Bruce Burke, D.S.O., R.A.M.C., John Hay Campbell, D.S.O., R.A.M.C., John Clay, R.A.M.C.(T.F.), David G. Croll, A.A.M.C., Thomas Fraser, D.S.O., R.A.M.C.(T.F.), Dermot Owen Hyde, D.S.O., R.A.M.C., Hugh M. Morton, D.S.O., R.A.M.C., Charles Edward Pollock, D.S.O., R.A.M.C., James C. Robertson, C.M.G., C.I.E., I.M.S., John P.

Silver, D.S.O., R.A.M.C., A. S. Woodwark, C.M.G., R.A.M.C., Ernest Arnold Wraith, D.S.O., R.A.M.C.(T.F.).

Lieutenant-Colonels (acting Colonels): Otto W. A. Elsner, D.S.O., R.A.M.C., George Mills Goldsmith, R.A.M.C., Cyril Henry Howkins, D.S.O., R.A.M.C.(T.F.), Arthur Maunsell MacLaughlin, R.A.M.C., Charles P. Templeton, D.S.O., C.A.M.C.

Lieutenant-Colonels: Hugh T. Dyke Acland, C.M.G., N.Z.M.C., Ernest Rudolf Brown, C.A.M.C., Eustace M. Callender, R.A.M.C.(T.F.), James Calvert, R.A.M.C.(T.F.), Anderson R. D. Carberry, N.Z.M.C., Alexander R. Falconer, N.Z.M.C., Herbert French, R.A.M.C., George E. Gabites, N.Z.M.C., Sir A. Pearce Gould, K.C.V.O., R.A.M.C.(T.F.), David Harvey, C.M.G., R.A.M.C., Edwin C. Hayes, R.A.M.C., Frederick W. Higgs, R.A.M.C.(T.F.), Edward V. Hogan, C.A.M.C., John P. D. Leahy, N.Z.M.C., Charles A. Lees, R.A.M.C.(T.F.), Robert H. Makgill, N.Z.M.C., James F. Martin, C.M.G., R.A.M.C., Hugh M. Morton, D.S.O., R.A.M.C., John H. G. Robertson, N.Z.M.C., Lancelot W. Rolleston, R.A.M.C., Peter C. Smith, R.A.M.C.(T.F.), Francis S. Walker, R.A.M.C., Sinclair White, R.A.M.C.(T.F.), Francis W. E. Wilson, C.A.M.C.

Temporary Lieut.-Colonels: James Johnstone Abraham, D.S.O., R.A.M.C., Sir Robert Armstrong-Jones, R.A.M.C., Maurice Craig, R.A.M.C., Arthur W. Falconer, D.S.O., R.A.M.C.(T.F.), Francis R. Hill, R.A.M.C., Gordon M. Holmes, C.M.G., R.A.M.C., John Robert Lord, R.A.M.C., George Edward Miles, R.A.M.C., Andrew M. Paterson, R.A.M.C. (to date from February 12th, 1919), David George Thomson, R.A.M.C., Charles M. Wenyon, C.M.G., R.A.M.C.

Temporary honorary Lieut.-Colonels: Mervyn H. Gordon, C.M.G., R.A.M.C., Richard G. Rows, R.A.M.C., Thomas E. K. Stansfield, R.A.M.C.

Majors and Brevet Lieut.-Colonels (temporary Lieut.-Colonels): Herbert Vale Bagshawe, D.S.O., R.A.M.C., George S. Jackson, D.S.O., Northumberland Fusiliers (T.F.) and R.A.M.C.

Majors and Brevet Lieut.-Colonels: A. Pearson Luff, R.A.M.C., Henry J. Parry, D.S.O. (R.P.), R.A.M.C.

Major (temporary Major-General): Sir J. Rose Bradford, K.C.M.G., C.B., R.A.M.C.(T.F.).

Major (temporary Lieut.-Colonel) Archibald M. H. Gray, R.A.M.C., James Swain, C.B., R.A.M.C.

Major Philip G. Easton, D.S.O., R.A.M.C.

Major (acting Lieut.-Colonel) John Robinson Harper, R.A.M.C.(T.F.), Henry MacCormac, R.A.M.C.

Temporary Major and Brevet Lieut.-Colonel Frederick S. Brereton, R.A.M.C.

Temporary Major (temporary Colonel) Charles Hewitt Miller, R.A.M.C.

Temporary Majors (temporary Lieut.-Colonels): W. Bickerton Edwards, O.B.E., R.A.M.C.(T.F.), Walter de M. Hill, R.A.M.C.

Temporary Majors and acting Lieut.-Colonels: William P. Sutcliffe Branson, R.A.M.C., Robert Higham Cooper, R.A.M.C.

Temporary Major Frederick N. G. Starr, R.A.M.C.

Captain and Brevet Major (acting Colonel) Claude H. S. Frankau, D.S.O., R.A.M.C.(T.F.).

Captain and Brevet Major (acting Lieut.-Colonel) E. Hurry Fenwick, R.A.M.C.(T.F.).

Captain (temporary Colonel) Harold Burrows, O.B.E., R.A.M.C.(T.F.).

Captain (temporary Lieut.-Colonel) Eric G. Gauntlett, D.S.O., R.A.M.C.(T.F.).

Captain (acting Major) Charles F. Morris Saint, R.A.M.C. T.F.

Temporary Captain (acting Lieut.-Colonel) Forbes Fraser, R.A.M.C.

Temporary Captain (acting Major) Ernest Charles Lindsay, R.A.M.C.

To be Lieutenant-General.

Major-General (temporary Lieut.-General) Sir C. H. Burtchaell, K.C.B., C.M.G., K.H.S.

To be Major-General.

Colonel (temporary Major-General) S. Guise Moores, C.B., C.M.G., late R.A.M.C.

Honorary Major-General on Retirement.

Colonel (temporary Major-General) Sir J. M. Irwin, K.C.M.G., C.B., ret. pay, late R.A.M.C.

To be Brevet Colonel.

Lieut.-Colonels (temporary Colonels): H. B. Fawcett, C.M.G., D.S.O., R.A.M.C., J. S. Gallie, C.M.G., D.S.O., R.A.M.C., J. A. Hartigan, C.M.G., D.S.O., R.A.M.C., L. Humphrey, C.M.G., R.A.M.C., T. C. Mackenzie, D.S.O., R.A.M.C., W. H. Ogilvie, C.M.G., I.M.S., J. Powell, D.S.O., R.A.M.C., A. H. Safford, R.A.M.C.

Lieut.-Colonels (acting Colonels): W. R. Blackwell, C.M.G., R.A.M.C., J. C. Connor, C.M.G., R.A.M.C., C. R. Evans, D.S.O., R.A.M.C., W. R. P. Goodwin, D.S.O., R.A.M.C., C. T. Green, R.A.M.C.(T.F.), F. McLennan, D.S.O., R.A.M.C., W. Riach, C.M.G., R.A.M.C.

Lieut.-Colonels: T. H. Corkery, ret. pay, late R.A.M.C., W. Howorth, R.A.M.C.(T.F.), H. Littlewood, C.M.G., R.A.M.C.(T.F.).

Surgeon Lieut.-Colonel P. H. Whiston, ret. pay, late Irish Guards.

Temporary Lieut.-Colonel J. W. Alexander, D.S.O., R.A.M.C. and T.F. Res.

To be Brevet Lieutenant-Colonel.

Majors (temporary Lieut.-Colonels): F. J. Brown (ret. pay), R. of O., late R.A.M.C.; F. D. G. Howell, D.S.O., M.C., R.A.M.C.

Majors (acting Lieut.-Colonels): R. B. Ainsworth, D.S.O., R.A.M.C., T. S. Coates, O.B.E., R.A.M.C., F. P. Connor, D.S.O., I.M.S., J. M. H. Conway, D.S.O., R.A.M.C., W. F. Ellis, O.B.E., R.A.M.C., R. Griffith, R.A.M.C.(T.F.), R. A. Lloyd, D.S.O., I.M.S., J. L. Lunham, I.M.S., E. J. Maclean, R.A.M.C.(T.F.), A. W. Sampey, R.A.M.C., R. T. Turner, R.A.M.C.(T.F.), W. F. Tyndale, C.M.G., D.S.O., R.A.M.C.

Majors: A. J. Chambers (ret. pay), R. of O., late R.A.M.C.; W. McAdam Eccles, R.A.M.C.(T.F.), B. F. Hamilton, ret. pay, late R.A.M.C.; R. W. W. Henry, R.A.M.C.(T.F.), H. A. Leebody, R.A.M.C.(T.F.), M. G. Pearson, O.B.E., S.A.M.C., H. Skelding, R.A.M.C.(T.F.), W. C. Smiles, D.S.O., R.A.M.C., W. A. Stott, R.E.(T.F.), attached R.A.M.C.; Sir H. F. Waterhouse, R.A.M.C.(T.F.).

Temporary Majors: S. Fleming, R.A.M.C., L. E. Lanyon-Owen, R.A.M.C., A. W. Robertson, R.A.M.C., T. R. St. Johnston, R.A.M.C., T. L. L. Sandes, O.B.E., S.A.M.C.

To be Brevet Major.

Captains (acting Lieutenant-Colonels): J. D. Bowie, D.S.O., R.A.M.C., T. A. Weston, R.A.M.C.

Captain (temporary Major) H. C. Todd, R.A.M.C.

Captains (acting Majors): T. H. Balfour, M.C., R.A.M.C., W. B. Bristow, R.A.M.C.(T.F.), C. M. Fegen, R.A.M.C.(T.F.), R. Gale, D.S.O., R.A.M.C., F. R. Laing, R.A.M.C., N. V. Lothian, M.C., R.A.M.C., W. C. Paton, M.C., I.M.S., M. Purvis, I.M.S., B. Shires, R.A.M.C.(S.R.).

Captains: W. Brander, R.A.M.C.(T.F. Res.), H. Brian-Pearson, R.A.M.C.(T.F.), H. C. Dent, R. of O., A.M.S., H. S. Dickson, R.A.M.C., A. W. Howlett, R.A.M.C., G. H. Hunt, R.A.M.C.(T.F.), R. A. Peters, M.C., R.A.M.C.(S.R.), J. A. Sinton, V.C., I.M.S.

Temporary Captains (acting Majors): W. Fell, R.A.M.C., W. E. P. Phillips, R.A.M.C.

Temporary Captains: J. S. Dunn, R.A.M.C., A. E. Giles, R.A.M.C., R. McC. H. Hill, D.S.O., R.A.M.C., W. B. Purchase, M.C., R.A.M.C., W. S. Stalker and E. C. Williams, R.A.M.C.

Kaiser-i-Hind Medal.

Lieut.-Colonel Richard Henderson Castor, I.M.S. Civil Surgeon, Moulmein, Burma.

Dr. Clement Cornelius Caleb, Professor of Physiology, King Edward Memorial College, Lahore.

Dr. Hugh Gordon Roberts, Officiating Civil Surgeon, Shillong, Assam.

O.B.E.

Colonel Walter Ernest Summons, A.A.M.C.

Lieut.-Colonels (temporary Colonels): William Bennett, D.S.O., R.A.M.C., Harold Simpson, R.A.M.C.

Lieut.-Colonels: Philip O. Andrew, N.Z.M.C., Allan E. K. Bennett, C.A.M.C., Henry F. Bernau, N.Z.M.C., Henry Arthur Berryman (R.P.), R.A.M.C., R. of O., Cole E. C. Cole, C.A.M.C., Martin P. Corkery, R.A.M.C., Charles E. Dennis, A.A.M.C., Henry P. Dimmock, I.M.S., Henry C. S. Elliot, C.A.M.C., Henry G. Falkner, R.A.M.C.(T.F.), P. Fiaschi, A.A.M.C., John G. Foster, R.A.M.C., Francis E. Fremantle, R.A.M.C.(T.F.), Alexander G. Hamilton, R.A.M.C.(T.F.), Michael L. Hearn (R.P.), R.A.M.C., Alexander W. Hogg, N.Z.M.C., Herbert E. R. James, C.B., C.M.G., R.A.M.C., William Love Kirkwood, A.A.M.C., Glen A. W. J. Knight, A.A.M.C., William Little, N.Z.M.C., Thomas D. McDermot, R.A.M.C., Edward G. Mason, C.A.M.C., Charles Milne, I.M.S., Eugene J. O'Meara, I.M.S., Principal, Medical School, Agra; R. J. W. Oswald, R.A.M.C.(T.F.), Christopher T. Parsons, R.A.M.C., Clifford H. Reason, D.S.O., C.A.M.C., Athelston John H. Saw, A.A.M.C., George C. E. Simpson, R.A.M.C.(T.F.), Julian C. C. Smith, I.M.S., Valentine Stacy, A.A.M.C., Guy Neville Stephen, R.A.M.C., Arthur B. S. Stewart, R.A.M.C.(T.F.), George H. Stewart, I.M.S., Hugh C. Taylor-Young, A.A.M.C., James Tidbury, R.A.M.C., Frederick S. Toogood, R.A.M.C., George Usmar, S.A.M.C., William J. N. Vincent, R.A.M.C., R. Melbourne West, D.S.O., R.A.M.C.(T.F.), David A. Whitton, C.A.M.C., Robert E. Wodehouse, C.A.M.C., Frederick A. Young, C.A.M.C., John R. Yourdi (R.P.), R.A.M.C.

(To be continued.)

Correspondence.

THE DETERMINATION OF OCULAR TENSION.

SIR,—May I point out that your annotation on this subject (BRITISH MEDICAL JOURNAL, June 7th), while it insists on the value of the eye tonometer, says nothing of its uncertainties and limitations. The Schiötz tonometer is an excellent instrument, and does well what such an instrument can do, but neither this nor any other can tell us exactly what we want to know.

The term "tension of the eye" is convenient as ordinarily used, but should be avoided when precision is in question; we are concerned with the "intraocular pressure." I will not stop to prove that the tension of the envelope is a different thing from the pressure that falls on it from within, and that it bears no fixed relation to

that pressure. The tonometer measures neither of these things. It measures simply the impressibility of the eye, and from this we infer the internal pressure, with some uncertainty, by means of a table or curve showing the average relation of the one to the other; it can only be the average because the relation is not constant. It is not possible to ascertain the exact pressure in any eye by measuring, however accurately, the impressibility of its cornea. Suppose, for example, that in the case of a given eye the tonometer and its curve declare the intraocular pressure to be 25 mm. Hg, we cannot be sure that the figure is correct. Professor Schiötz's test experiments, and my own, have shown that it may err by at least 5 mm. Hg in either direction.

The tonometer can detect change of pressure in a given eye with great precision, but it cannot compare the pressures in different eyes with nearly equal certainty. The problem is more intricate than some "up-to-date" ophthalmic surgeons have yet realized, and I write this brief note as a warning against the present tendency to attribute to the tonometer a degree of precision which no instrument of the kind can possibly achieve. Professor Schiötz himself is far more cautious. I have written more fully in an article which will appear shortly in the *British Journal of Ophthalmology*.—I am, etc.,

PRIESTLEY SMITH.

Birmingham, June 8th.

INFECTIVE CATARRHS—SO CALLED "COLDS."

SIR,—Although given scanty notice in medical textbooks, periodicals, and literature generally, infective catarrh and so-called "colds" are a most important factor—perhaps the most important—in the national morbidity and mortality rates.

At the best, a "cold" getting into an average household is a very great nuisance, attacking one child after another, the parents, and the maids (if any), causing some degree of dislocation for probably six weeks; whilst at the worst it is a great danger, carrying off some member by its development into bronchitis, pneumonia, etc., and so never appearing by name on the death certificate or in the mortality returns. In educational and industrial matters "colds" must be the cause of a vast wastage, and of much inefficiency.

The remedies for this unsatisfactory state of affairs lie, broadly speaking, in two directions:

1. In bacteriological research, with a view to identifying more precisely the causes, and to find an effective remedy.
2. In better education, both of the profession and the public.

As regards (1) we will only suggest that research should be on a much wider and broader scale than heretofore. Each individual case may be of comparatively little importance, but a "cold" being the commonest disease in the country, it merits investigation commensurate with its frequency. We would suggest that the Medical Research Committee might well turn its attention in this direction.

As regards (2) we think by far the most important step in the educational line is to adopt a proper name for this class of infection. As long as a definitely infective condition is called a "cold" or a "chill" by the doctor, it will quite naturally be treated by the patient as if due to a cold—that is, he will wrap up (probably too much), shut up the windows, and so unconsciously do his best to spread infection to the rest of the household. This line of treatment has been seen in numberless cases in the recent epidemic with disastrous results. But we would go further, and say that as long as the view of the patient that his condition is due to "chill" or "cold" is acquiesced in by his doctor, or as long as the latter tolerates the designation "cold" (and one quite realizes how very easy it is so tacitly to agree with one's patient), there will be no real educational progress in such matters.

In reading old medical and surgical textbooks one is struck by the fact that almost every ailment to which flesh is heir has been said to be due to cold, whereas comparatively few are so attributed by modern physicians. Apparently, when no other cause could be demonstrated, "cold" was always invoked; and as exposure to some degree of cold in our climate cannot be avoided, it was quite easy to confuse the "post hoc" with the "propter hoc."

But now we, as members of a scientific profession, should have outgrown such weaknesses, and should not

use terms implying an etiology for which there is no justification.

In bulletins about the health of distinguished personages we are frequently informed that "So-and-so" is suffering from "a severe chill" or "a bad cold," etc. Surely it would be better to say "a pyrexial attack" or "acute nasal catarrh," if such are meant. If men high up in the profession use loose terms, what can be hoped of the humble G.P.?

We should like to see some eminent authorities, such as the Presidents of the Royal Colleges, the President of the British Medical Association, or those who have evinced particular interest in the matter, like Sir A. Newsholme or Dr. Leonard Hill, definitely propose to the profession that the terms "cold" and "chill" (as signifying diseases) should be once for all discarded as unscientific and false etiological. When, however, we come to consider what terms shall be used in place of those dropped, difficulties arise. The correct term for a "heavy cold in the head" extending from nose to larynx would be, we suppose, "acute infective nasal, nasopharyngeal, and laryngeal catarrh," but this would obviously be too cumbersome; it might be abbreviated to "infective catarrh" perhaps, or even some shorter term coined.

The term "coryza" has much to recommend it, being short and non committal. But as this term does not cover a laryngeal catarrh, we think it is not entirely suitable. Also it is important that the *infective* element should appear even in the name, if the latter is to have in future a positive educational value in any way comparable to the pernicious and negative educational value hitherto enjoyed by the term "cold."

The term "chill," perhaps, is more often used to designate a rise of temperature and slight malaise without definite catarrhal signs, and "febricula" would seem to be a suitable and more convenient term, "infective" being affixed if desired.

It will doubtless be asked, "What's in a name?" and be argued that the present terms are short, convenient, and hallowed by tradition. Our reply is that there is a very great deal of harm in any name implying a false etiology. In fact, we would say that as long as these affections are called "colds" and "chills" there is not much chance of getting them treated generally on common-sense lines. If the public had been educated to the point of treating "a bad cold" on the fresh-air plan before the onset of the recent epidemics of influenza, it is probable that many thousands of lives would have been saved.—We are, etc.,

N. I. SPRIGGS.

C. KILICK MILLARD.

Leicester, May 28th.

TENDON TRANSPLANTATION IN DROP-WRIST DUE TO NERVE INJURY.

SIR,—In the BRITISH MEDICAL JOURNAL, June 7th, Captain Vernon Pennell, R.A.M.C., publishes a paper on this subject. The problems presented by this procedure cannot be discussed within the limits of a letter, but while I am in agreement with much of his communication there is one point on which I desire to offer some comments.

Amongst the conditions for which he advocates tendon transplantation in preference to nerve suture are "all cases of division of the posterior interosseus nerve." These are included chiefly on the score of difficulty in finding and dealing with the nerve. While it is true that the majority of such cases present conditions which render nerve suture impossible, there are others in which it is feasible, and in these I think it should always be performed in preference to operations on the tendons, provided the muscles have not been seriously injured or very extensively wasted.

I have performed suture of the posterior interosseus nerve in two cases, in each with complete success. In one case the nerve had been severed in its course through the supinator brevis muscle on the outer and posterior aspect of the radius; in the other it was involved in a dense scar immediately below the division of the musculo-spiral into its posterior interosseous and radial branches. Both cases were treated by end-to-end anastomosis. In each case clinical signs of regeneration appeared within three months of operation, followed later by perfect recovery of function in wrist and fingers.

Owing to the small size of the nerve the operation is not simple, and it requires considerable delicacy of technique, but the results in these cases show that

success may be achieved. Tendon transplantations in cases of drop wrist, while yielding gratifying results and enormously improving the use of the hand, are, in my experience, never followed by the complete restoration of function which results from successful nerve suture, and are at best only palliative measures. When the local conditions are favourable I suggest that an attempt should be made to suture the nerve.

In regard to Captain Pennell's suggestion that tendon transplantation at the wrist may be performed at the same time as suture of the musculo-spiral nerve in the arm, a number of considerations arise which I shall not discuss here. Personally I have not adopted the procedure in any case.—I am, etc.,

WILLIAM PEARSON, F.R.C.S.I.,
Late Major R.A.M.C., and a District
Consultant Surgeon.

Dublin, June 9th.

OPTIONAL OR COMPULSORY GREEK AT OXFORD.

SIR,—We, the undersigned, members of the Board of the Faculty of Medicine, teachers in the medical school, and resident medical graduates, appeal to all Oxford medical graduates who are members of Convocation and are opposed to compulsory Greek to come to Oxford on Tuesday, June 17th, and by their votes in Convocation, at 2 o'clock, support the statute rendering Greek *optional* in Responsions.—We are, etc.,

ARTHUR THOMSON, Exeter College; Professor of Human Anatomy.

A. P. DODDS-PARKER, Magdalen College; Lecturer in Applied Anatomy.

S. E. WHITNALL, Magdalen College; University Demonstrator in Human Anatomy.

C. S. SHERRINGTON, Fellow of Magdalen College; Professor of Physiology.

H. C. BAZETT, Fellow of Magdalen College; Welch Lecturer in Clinical Physiology.

G. DREYER, Fellow of Lincoln College; Professor of Pathology.

E. W. AINLEY WALKER, Fellow and Tutor of University College; Lecturer in Pathology.

A. G. GIBSON, Christ Church; Lecturer in Morbid Anatomy.

A. D. GARDNER, University College; Bacteriologist, Students' Laboratory, Department of Pathology.

J. A. GUNN, Queen's College; Professor of Pharmacology.

S. H. VINES, Fellow of Magdalen College; Professor of Botany.

G. C. BOURNE, Fellow of Merton College; Professor of Zoology and Comparative Anatomy.

W. H. PERKIN, Fellow of Magdalen College; Professor of Chemistry.

D. H. NAGEL, Fellow and Tutor of Trinity College.

W. COLLIER, Exeter College; Honorary Physician Radcliffe Infirmary.

W. T. BROOKS, Christ Church; Litchfield Lecturer in Medicine; Honorary Physician Radcliffe Infirmary.

R. H. ANGLIN WHITELOCKE, Lincoln College; Litchfield Lecturer in Surgery; Honorary Surgeon Radcliffe Infirmary.

C. G. DOUGLAS, Fellow and Tutor in Natural Science, St. John's College.

A. L. ORMEROD, New College; M.O.H. City of Oxford.

E. MALLAM, Magdalen College; Honorary Physician Radcliffe Infirmary.

G. SINGER, Tutor of Exeter College.

G. B. CRONSHAW, Fellow and Bursar of Queen's College; Honorary Treasurer Radcliffe Infirmary.

H. M. VERNON, Fellow of Magdalen College; Investigator to the Industrial Fatigue Research Board.

THE ETIOLOGY OF AORTIC REGURGITATION.

SIR,—I should like to traverse Dr. Theodore Fisher's statement that "there is no evidence that scarlet fever causes endocarditis," from my experience of thirteen years' work in large fever hospitals during which the performance of *post-mortem* examinations on cases of scarlet fever was a routine procedure.

The evidence is as follows:

In children dying during the acute stage of scarlet fever it is quite common to find the valves of either the aortic or mitral orifices swollen and brilliantly injected, with the cusps slightly thickened, lustreless, and sometimes also covered with small flecks of lymph.

* Any Master of Arts or Doctor of Medicine whose name is on the books of his college is a member of Convocation.

On microscopical examination the entire substance of the valve is seen to be infiltrated with leucocytes and organizing fibrin, and in Gram-stained sections micro-organisms are commonly present also. In practice I was always able to demonstrate to my classes at the Manchester University by *post-mortem* examination one or more such cases during each session. There is also clinical evidence, which is in my opinion conclusive, as to the existence of endocarditis in scarlet fever, but I gather from Dr. Fisher's letter that he regards *post-mortem* appearances as a firmer basis for discussion. I shall be interested, therefore, to learn how he would explain those which I have described, and which I submit are familiar to the residents in every large fever hospital.—I am, etc.,

London, W.O., June 5th.

A. KNYVETT GORDON.

LIQUOR CONTROL.

SIR,—I trust the Council of the Association will agree to the suggestion contained in Dr. Collier's letter in the *JOURNAL* of June 7th. I fully agree with him that our status as a profession would have ranked much higher and our opinions have carried much more weight had we taken a larger share of public work both individually and collectively, and I believe that such a memorial as that which he has drawn up, if largely signed by members of the profession, would exercise a powerful influence on the Government when it comes to decide on the future of the liquor traffic. Those of us who have experienced the benefits of State control do not wish to return to pre-war conditions.

The very excellent annual report of the General Manager of the Carlisle and District Control area, from which I quoted in my article in the *JOURNAL* of April 19th, has now been published as a parliamentary paper, and copies may be had, price 9d., from His Majesty's Stationery Office through any bookseller. There is also a good summary of the operations of the Board, with several interesting photographs, in a little book entitled *State Purchase of the Liquor Trade*, by Joseph Rowntree and Arthur Sherwell, published by George Allen and Unwin, Limited, London, price 1s.—I am, etc.

Carlisle, June 9th.

HENRY BARNES, M.D.

MEDICAL DEMOBILIZATION.

SIR,—With reference to the letter of Dr. Hugh Thursfield in the *JOURNAL* of June 7th there are other points to which he might have drawn attention in connexion with medical demobilization.

No doubt there are a large number of medical officers who are anxious to be demobilized who have the strong claims of long and good service, family ties, and a practice or appointment to go back to; these men should have the first consideration.

If there is a shortage of medical officers those of us who have served think that this might be met in two or three ways. In the first place the work of many appointments now held by medical officers could quite well be carried on by the attachment of junior combatant officers or even a well educated staff sergeant; such are the regimental duties and various appointments at head quarters and commands. Then, again, there is much overlapping in sanitary duties—a saving in this direction could quite well be carried out. Over-staffed station and general hospitals could be reduced and medical boards could be formed from the staffs of hospitals instead of having officers set apart for this purpose. Regular R.A.M.C. officers should be sent out to relieve the temporary officers who have good claims to be sent home for demobilization. Lastly, there are a large number of medical officers temporarily serving for the period of the war who have lost their practices or appointments and have nothing to go back to and have families to keep and do not desire to be demobilized; these should be retained for a longer period. There are many officers of this last class who have been demobilized and who would gladly come back again.—I am, etc.,

June 7th.

"MEDICUS."

INSURANCE TERMS AND CONDITIONS (M. 25).

SIR,—We were glad to see the letters on the above subject from Drs. W. Hodgson and James Ormoud which appeared in the *BRITISH MEDICAL JOURNAL* of June 7th. These letters may possibly arouse the profession to what is proposed, before it is too late.

Our representatives have, in our humble opinion, mismanaged the whole negotiations from the start.

Surely, having regard to the present value of money and cost of living, we are entitled to a substantial increase in our capitation fee *without any onerous additions to the conditions of service*. When that is granted, we should then, and not till then, have entered into discussion of fresh conditions of service, for which, of course, an adequate increase should be granted, but irrespective of the first grant.

With regard to the proposed new conditions of service, we cannot occupy your space too much, but do many insurance practitioners realize that under Paragraph 74 they will now be liable to attend not only their own patients but—at any rate in an urban district—any insurance patient who sends, night or day, and who alleges his own doctor is not available, and that the matter is urgent? Truly, as Dr. William Hodgson says, life under these conditions will be intolerable.—We are, etc.,

H. A. WATSON.

Worcester, June 10th.

W. G. BENNETT.

VOLUNTARY HOSPITALS.

SIR,—The importance of Dr. B. Secretan's letter cannot be overestimated at the present time, when hospital boards are at their wits' end to know how to raise the money to finance their institutions. What is to take the place of the thousands lately subscribed by the War Office for attendance upon wounded soldiers? There may be the pensioners for some time. Here comes in the revelation of Dr. Secretan.

I wish he would explain the following quotation from his letter: "They (the voluntary hospitals) minister to the needs of paupers, those of moderate means with an income above a certain limit being looked upon, and rightly so under present circumstances, with disfavour." Now for the revelation.

The pauper cases would be treated gratuitously. As much money as possible would be squeezed out of those not able to go to expensive nursing homes. There is to be a graduated scale of payments. If they pay, they are to be supplied with "those refinements to which they should be entitled," the supply of refinements to be graduated, naturally, according to the amount of payment. Of course the "paupers" cannot expect any refinements, which, besides, they would be unable to appreciate.

The hospital will find it rather expensive dividing the patients into the different grades of affluence. The hospital is to reflect the different classes in our plutocratic kingdom, and the honorary members of the staffs are to share in the spoil. It is to be hoped that they will get their fair share. Up to now they do not seem to have got much of the money supplied by the War Office for attendance upon the wounded soldiers. The honorary members have not had the heart or pluck to put pressure upon the boards of our bankrupt voluntary hospitals.

Now that so many general practitioners are on the enlarged staffs of the provincial hospitals the honorary members do not get paid in the same way as they formerly did—that is, by the exclusion of rival practitioners. But the mischief is that all reformers are urging that as many members of the profession as possible shall be brought in contact with the hospitals to raise the general level of medical efficiency. Therefore, Dr. Secretan's scheme is welcome as offering some hope of restoring the lost payment to honorary members of the staffs. It is a first class scheme for the New Democracy, and one likely to raise the self-respect of the citizens of our great empire. We are a nation of shopkeepers saturated with snobbery, whose god is Mammon, and whose devil at the present time is Bolshevism (whatever that may mean).—I am, etc.,

Wigan, June 3rd.

FERDINAND REES, M.D.

THE Iowa Legislature has appropriated \$35,000 for the establishment of a psychopathic hospital at the State University. The institution will be open to all sufferers from mental disorders, whether under public or private care. The same legislature has also extended, to include adults, the Perkins law under which an orthopaedic hospital is maintained by the State for the free treatment of crippled children.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on June 6th the following medical degrees were conferred:

M.D.—C. F. Searle, C. T. Scott, T. H. G. Shore.
M.B., B.Ch.—H. C. H. Bull, G. T. Calthrop.

UNIVERSITY OF LONDON.

The following candidates have been approved at the examinations indicated:

THIRD M.B., B.S.—Annie H. Banks, †A. J. Cokkinis, †D. M. Connan, †L. S. Debenham, †D. H. Giffen, *J. G. Moseley, †S. R. J. Perkins (University Medal), †A. E. Sawday, †F. A. St. John, Lena C. Adam, Mary N. Andrews, R. M. Beath, J. E. A. Boucaud, N. St. J. G. D. Buxton, J. Capell, P. S. Clarke, Kathleen M. Cogan, G. F. Cooke, W. E. Crowther, J. H. Daney, S. C. de Silva Wijeyeratne, G. D. Eccles, P. C. Gibson, M. Gross, E. E. Herga, A. W. Holgate, Mary I. Hounsfield, P. Hudson, P. Hughes, G. M. Jackson, Hassan Kamal, J. N. Leitch, I. H. Lloyd, Alice L. Lloyd-Williams, Kathleen McC. McKeown, Gladys M. Miall-Smith, A. H. Morley, Enid M. Pfeil, B. H. Pidcock, J. L. Priston, R. W. Revell, H. B. Russell, H. T. Rymer, M. Scott, C. Sherris, Lily D. Taylor, B. Thomas, D. O. Thomas, R. F. White, S. C. Woodhouse.

* Distinguished in Medicine.

† Distinguished in Pathology.

‡ Distinguished in Forensic Medicine.

§ Distinguished in Surgery.

The following candidates have passed in one of the two groups of subjects:

Group I.—Ursula P. Blackwell, Nora A. Crow, E. S. Davies, Florence M. Edwards, Edith C. Hudgell, E. F. Kerby, R. G. Lyster, F. N. Moos, Edith M. P. Morris, Dorothy P. Priestley, T. C. Russell, H. W. Southgate, C. H. Thomas, W. Yeoman, W. R. White-Cooper. Group II.—I. M. Abd-El-Said, W. M. Anthony, J. A. Birrell, C. H. C. Byrne, J. A. C. Forsyth, R. S. Foss, Muriel M. Kenworthy, G. L. Levin, E. K. Macdonald, C. D. Maitland, M. J. Panthaky, Mary M. Prior, Joan M. Ross, W. R. Rowlands, J. F. Ryan, E. D. Scott, J. W. Wayte.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the monthly meeting of the President and Fellows on June 6th the following were admitted Members of the College: J. Speares, J. T. Wigham. At the same meeting Henry Cooke Drury, M.D., F.R.C.P.I., was elected a Physician to attend Sir Patrick Dun's Hospital in the place of the Professor of Institutes of Medicine, who has been exempted by the College from his clinical duties.

Obituary.

GEORGE COOPER FRANKLIN, F.R.C.S.,

LL.D.(Hon.), M.B.E.,

Consulting Surgeon, Leicester Royal Infirmary.

BRIEF mention was made last week of the death, on June 2nd, of Mr. G. C. Franklin, consulting surgeon to the Leicester Royal Infirmary and President of the British Medical Association when it held its annual meeting in Leicester in 1905. He was born in 1846, the son of the late Mr. G. B. Franklin, who conducted the well-known school for boys at Stoneygate, Leicester. The son was educated partly at his father's school and partly at Leatherhead. He was a student at St. Thomas's Hospital, where he held the appointments of house-surgeon and resident accoucheur, and always retained a grateful regard for his teachers there, especially Sir John Simon, Mr. Le Gros Clarke, Mr. Samuel Solly, and Sir Risdon Bennett—all now long passed away. He took the diploma of M.R.C.S. in 1870, that of L.R.C.P. in 1871, and the F.R.C.S. in 1873. From 1871 to 1874 he was resident medical officer of the City of London Hospital for Diseases of the Chest. On giving up that appointment he started in general practice in Leicester, deciding to prescribe and not dispense—a course which many of those then in practice in the city considered impossible of success. Mr. Franklin was helped at the beginning by the late Dr. Barclay, but did not enter into partnership. In 1875 he became surgeon to the Leicester Provident Dispensary, but resigned the appointment five years later on account of the growth of his practice, which was concerned largely with midwifery, but included a considerable amount of work in general medicine. In 1886 he was appointed surgeon to the Leicester Royal Infirmary; he retained the post for twenty years, when he retired under the age limit. In recognition of his eminent services to the infirmary he was entertained to dinner on April 25th,

1906, by the medical practitioners of the town and many of the prominent citizens. The late Dr. F. M. Pope, the senior physician, was in the chair, and the principal toast was given by the late Sir Edward Wood, chairman of the board of the infirmary. At the anniversary meeting on March 27th, 1906, Mr. Franklin had been appointed consulting surgeon, and on that occasion a tribute was paid to the services he had rendered during his long period of office, to his distinguished ability, and to his devotion to the best interests of the infirmary. He was surgeon to the Midland and London and North-Western Railways, and vice-president of the paying hospital in Leicester for working-class patients, in the foundation of which he had taken much interest.

When the British Medical Association accepted the invitation to hold its annual meeting at Leicester in 1905 Mr. Franklin was unanimously designated to preside over it. It was a most successful meeting, and much of its success was due to his organizing powers; his geniality made everyone who attended his friend for life. The presidential address he delivered was a thoughtful review of medical education, past, present, and future; he dealt with many questions which are still occupying attention, but in particular with the want of appreciation of the importance of education in obstetric medicine and surgery, a defect for the remedy of which efforts are now being made. He also insisted on the importance of at least a year's service as house officer at some hospital before the new practitioner entered upon independent practice. In 1906 he attended the annual meeting at Toronto; he inducted his successor, Professor R. A. Reeve, and himself received the honorary LL.D. from the university.

Outside the sphere of the medical profession he took a keen interest in the general well-being of his native town, was early in life a member of the town council, and afterwards a J.P. for the borough. He was president of many societies in the town—medical, scientific, and musical—and had passed the chair of the Literary and Philosophical Society. In 1910 failing health led to his retirement from practice and two years later he settled in Fareham, Hants. There he did much public work, was a governor of Price's School, and when the war broke out readily gave his services, becoming commandant and medical officer of the Hawkstone Red Cross Hospital; he was for some time medical officer also of the Lady Keyes's Fareham House Hospital and of the St. John Hospital, Fareham. After the Hawkstone Hospital was closed Mr. Franklin served on the local medical board of the Ministry of National Service. When the Order of the British Empire was established in 1917 Mr. Franklin's name was in the first list as M.B.E. This recognition of his unselfish services gratified him, but the strain upon a constitution already impaired was too great, and for some time before his death he had been laid aside by heart failure.

Mr. Franklin is survived by Mrs. Franklin, two sons, and two daughters; his sons are Major G. D. Franklin, I.M.S., and Commander H. G. C. Franklin, R.N. The funeral, which took place at Fareham on June 5th, was largely attended by representatives of the medical profession and by many of those who worked with him in the war hospitals.

DEPUTY SURGEON-GENERAL WILLIAM CATTELL, R.A.M.C. (retired), who died on March 20th at the age of 89, was one of the last survivors of the Crimean war. He was born at Castle Bromwich, Warwickshire, on November 23rd, 1829, and took the M.R.C.S. in 1853. He entered the army as assistant surgeon on March 28th, 1854, became surgeon on March 28th, 1866, surgeon-major on April 1st, 1873, brigade surgeon—when that rank was first instituted—on November 27th, 1879, and deputy surgeon-general on March 12th, 1882. He retired on November 23rd, 1889. In the regimental days he served successively in the 5th Dragoon Guards, 1854 to 1864; on the staff, 1864 to 1866; in the 20th Foot, the Lancashire Fusiliers, 1866 to 1872; and in the 10th Hussars from 1872. He served in the Crimea with the 5th Dragoon Guards, and took part in the battles of Balaklava, Inkermann, Tchernaya, and the siege of Sevastopol, receiving the medal with three clasps, and also the Sardinian and Turkish medals. In the Afghan war, 1878-79, he served with the 10th Hussars, was present at the capture of Fort Ali Masjid and the action at Futehlabad, and received the medal and clasp.

LIEUT.-COLONEL JAMES GRAHAM HOJEL, Bombay Medical Service, died of heart failure at Bombay on March 21st, aged 55. He was the son of the late Brigade-Surgeon A. N. Hojel, I.M.S., and was educated at Trinity College, Dublin, where he graduated B.A., M.B., and B.Ch. in 1886. Entering the I.M.S. as surgeon on March 31st, 1888, he became major on March 31st, 1900, lieutenant-colonel on March 31st, 1908, and was placed on the selected list on April 15th, 1911. He was for some years civil surgeon of Ahmadnagar, and latterly surgeon to the Gokuldass Tejpal Hospital in Bombay. During the war he also had charge of Lady Hardinge's hospital, and of the Gerard Freeman Thomas war hospital in Bombay. He received the C.I.E. on January 1st, 1917.

SURGEON-MAJOR GEORGE ALLAN HUTTON, R.A.M.C. (ret.), died at Leamington, on April 21st, aged 85. He took the diploma of M.R.C.S. in 1852, and entered the army as assistant surgeon on June 23rd, 1854, being promoted to surgeon in 1866, and retiring on September 3rd, 1874. Most of his army service was spent in the Rifle Brigade, in which he served in South Africa, in Canada with the Trent expedition, and in the West Indies, but saw no war service. Soon after retiring he took up the work of the St. John Ambulance Association, of which he became organizing commissioner about 1879, and held that post for about twenty-five years. He was twice married, and leaves a widow, three sons, and three daughters. His eldest son, in the navy, recently attained the rank of rear admiral.

BRIGADE SURGEON THOMAS CAMPBELL TOLMIE, R.A.M.C. (retired), died at North Finchley on May 12th, aged 79. He was educated at Glasgow, took the diplomas of L.F.P.S.G. in 1861 and L.R.C.S. Edin. in 1866, and entered the army as assistant surgeon in 1867, and retired in 1887. In the regimental days he was medical officer of the 92nd Foot, now the second battalion of the Gordon Highlanders. He served in Egypt in 1882, at the battle of Tel-el-Kebir, and received the medal with a clasp, and the Khedive's bronze star; and in the Sudan in 1885-86, as secretary to the P.M.O. of the Frontier Field Force, was present in the action at Giniss, and received a clasp.

CAPTAIN EUSTACE MACARTNEY PARSONS-SMITH, R.A.M.C., died suddenly at Khartoum on May 28th, aged 34. He was the youngest son of the late Dr. Parsons-Smith of Croydon, and was educated at St. Thomas's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P. Lond. in 1908. After acting as clinical assistant in the Children's Medical Department at St. Thomas's, he entered the R.A.M.C. as lieutenant on January 30th, 1909, and became captain on July 30th, 1912. He joined the Egyptian army—in which he held the rank of Bey at the time of his death—on May 11th, 1911, and received the Order of the Nile on August 31st, 1917.

SURGEON LIEUTENANT EDWARD GARLICK FISHER, R.N., died at the end of May. He was educated at the universities of Cambridge, where he graduated B.A. with honours, and Liverpool, and at St. Thomas's Hospital, and took the diplomas of M.R.C.S. and L.R.C.P. Lond. in 1912. After filling the posts of house-surgeon of special departments, of casualty officer, of senior house-physician, and of senior resident medical officer at the Royal Infirmary, Liverpool, and of clinical assistant at the Liverpool Consumption Hospital, he became medical registrar and tutor at the Liverpool Royal Infirmary, and held that post when the war began. He took a temporary commission as surgeon in the navy on August 7th, 1914, three days after the declaration of war.

ASSISTANT SURGEON ERNEST HUGH BOILARD, M.C., I.M.D., died at Campbellpur, Punjab, on March 29th, aged 38. He was born on July 13th, 1880, and joined the department on November 3rd, 1904. He received the Military Cross on January 14th, 1916. Previous to the war he was employed on plague duty in the Central Provinces.

LIEUT. JUGUL KISHORE SHARMA, Indian Medical Service, was reported as having died on service, in a casualty list published on May 17th. He received a temporary commission in the I.M.S. on November 26th, 1917.

Medical News.

THE Prince of Wales has become president of King Edward VII Hospital, Cardiff, and of the Victoria Hospital for Children, Chelsea.

WE regret to record the death of Sir Barclay J. Baron, the well known Bristol laryngologist, who was recently Lord Mayor of Bristol. We expect to publish an obituary notice in an early issue.

INFLUENZA is reported to have wrought great havoc in the South Sea Islands. About 8,000 deaths occurred in German Samoa, two-thirds of the victims being men. There was also great loss of life in Fiji, Tonga, and Tahiti. Mauritius also has suffered recently from the disease.

THE Council of the Order of Medical Practitioners of the Province of Rome has called the attention of the Italian Government to the prevalence of the abuse of cocaine. Severe penalties have been imposed for the clandestine sale of the substance.

THE annual general meeting of the Medico-Legal Society will be held at 11, Chandos Street, Cavendish Square, W.1, on Tuesday, June 24th, at 8.30 p.m., when the council will propose the election of Mr. R. Henslowe Wellington to be president. The honorary secretaries of the society are Mr. E. Goddard and Dr. Spilsbury. At an ordinary meeting, which will follow, Dr. Lionel Weatherly will read a paper on the interpretation of Sections 47 and 321 (ii) of the Lunacy Act, 1890.

DURING June and July four courses of lectures will be given at the London Hospital Medical School. The first, a course of ten lectures by Dr. P. N. Pantou, director of the clinical laboratory of the hospital, on routine laboratory methods, began on June 11th at 4.15 p.m.; the second course, four lectures by Dr. Charles H. Miller, assistant physician to the hospital, discussing gunshot wounds of the chest, influenza, and dysentery, from the point of view of the military physician, began on June 12th at 12.15 p.m. Dr. O. Leyton, physician to the hospital, will lecture on June 16th and 23rd, at 4 p.m., on the treatment of diabetes in children and adolescents, and on July 9th at 4.15 p.m. All the courses are open to members of the profession on presentation of their cards.

THE Local Government Board announces that the Inter-Departmental Committee on Tuberculosis amongst Discharged Soldiers and Sailors hopes to report soon after Parliament reassembles. The Committee, of which Sir Montague Barlow, M.P., is chairman, has held nine meetings and heard a large amount of evidence from Government departments, local authorities, directors of sanatoriums and of colonies for disabled men, and from soldiers' organizations. The Committee consists of Dr. Nathan Raw, M.P., Sir Owen Thomas, M.P., Sir Kingsley Wood, M.P., and representatives of the Local Government Boards for England, Scotland, and Ireland, the National Insurance Commissions for England and Ireland, the Board of Agriculture, the Ministry of Labour, and the Ministry of Pensions.

THE processes of crushing, grinding, and sieving refractory materials containing not less than 80 per cent. silica (SiO₂), and any processes involving the manipulation of such materials in the manufacture of bricks or other articles, have been certified to be dangerous under the Factory and Workshop Act, 1901. The Home Secretary has consequently issued regulations for such industries. They require that no such materials shall be broken by manual labour except in the open air, and that a stone-crushing or grinding machine must be provided with an exhaust draught, have an efficient water or steam spray or other arrangement to prevent the escape of dust, and be entirely closed. Respirators must be provided for persons engaged in certain manipulations.

In November, 1916, when the free territory of Belgium was reduced to a small strip in Flanders, the Medical Department of the Belgian army was the rallying point of the members of the various medical faculties of Belgium. With their aid the *Archives Médicales Belges*, which had been committed by the army to the care of Drs. Stassen and Voncken, continued to present to the allied nations a conspectus of the work their Belgian *confrères* were doing. Down to the end of 1918 the monthly numbers were published in Paris. At the beginning of this year it was possible to transfer the printing of the periodical to Liège, and it is now published there as well as in Paris. With the freeing of Belgium the editors have been able to enlarge the list of their contributors, and the periodical now has the assistance of members of all the medical faculties in Belgium. By its original articles and abstracts it presents a picture of the progress of the medical sciences in that country.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the *BRITISH MEDICAL JOURNAL*, *Aitiology*, *Westrand*, London; telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisera*, *Westrand*, London; telephone, 2634, Gerrard. The address of the Irish Office of the *British Medical Association* is 16, South Frederick Street, Dublin.

LETTERS, NOTES, ETC.

BENZOL FOR MOTOR CARS.

THE Automobile Association states that it has been informed by the National Benzol Association that the price of benzol conforming to the A.A. specification is 2s. 9d. a gallon in two-gallon tins, and that it is hoped the price may be reduced in the future. To-day it compares with No. 1 petrol at 3s. 1d. a gallon (at most garages). The Automobile Association calculates that 15 per cent. more mileage can be obtained from benzol than from the best petrol.

THE ABSURDITY OF PRESENT VIVISECTION REGULATIONS.

"EAST INDIA" writes: While at home on leave in 1914, owing to a vacancy at the Cambridge Addenbrooke's Laboratory, I took temporary charge. Amongst my duties I had to do Wassermann tests which require a small quantity of fresh guinea-pig's blood to provide the complement, and as the only positive test for tuberculosis guinea-pigs had to be injected occasionally with suspected matter to see whether they developed the disease. Until I could secure a licence from the authorities, which took many weeks to obtain, I had to carry "Jackie," my pet guinea-pig, in my pocket from laboratory to laboratory to find a licence-holder who would prick his ear for me, so that I might take a small capsule of fresh blood back with me to my laboratory and then go on with my work. After my licence arrived, "Jackie," when required, was put upon the table, and when I was ready would come to call, squat while his ear was pricked and blood taken, receive his tit-bit, and go off to the far end of the table to enjoy it. This is an illustration of the cruelty which a licence guards against and of how work is held up by absurd regulations framed by politicians who pander to the numbers of ignorant people who, knowing nothing of the necessity for this sort of thing, call out about the cruelty of experiments on animals. Infinitely better introduce a bill to prevent the use of a horse or dog whip. The same crowd accept anti-serum treatment for themselves and their families—for example, diphtheria anti-serum—probably without knowing that this sure treatment of a once very fatal disease can only be produced by "vivisection."

Your article on the "Dogs' Protection Bill" has caused me to write this, for I think a simple statement of how one's work is hampered by absurd regulations may open the eyes of unthinking supporters of a bill which can do nothing but harm to the scientific side of medicine, which the war experience we have just come through has so amply justified. In previous years our original ideas, hampered by English legislation, had to go over to Germany to be worked out, eventually being produced with German names attached and our original thinkers' work smothered. Surely we know better now than to force our best men back to Germany because their original work cannot be developed in England.

TREATMENT BY CORRESPONDENCE.

AN inquest was held at Kensington, on June 5th, on the body of Mrs. Kennard, aged 46. The widower stated that while living in Brazil his wife consulted a throat specialist. She joined him in England in April, and went to the Alabone Institute in Highbury Quadrant, where she filled up a form and was supplied with apparatus for spraying the throat, and given medicine. He paid twelve guineas, but she was never seen by anyone from the Institute. On May 31st, as she was worse, he wrote to the Institute saying that the doctor who had her case in hand must come and see her, but on the following night he had to call in a local doctor, and death took place on June 2nd. In reply to the coroner, witness said he was under the impression that the doctor at the Institute was a qualified man. Dr. J. N. d'Esterre said that the woman was dying when he was called in on June 1st. The coroner asked whether he thought that treatment by correspondence was a reliable and safe method, to which the witness replied, "Certainly not." Dr. Spilsbury said death was due to tuberculosis accelerated by slow starvation from inability to swallow. He had seen Mrs. Kennard's papers from the Alabone Institute, and the treatment was quite inadequate for one in her condition; treatment by correspondence was never satisfactory. The emaciated state

of the body was due to slow starvation from want of proper diet and surgical and medical treatment. The coroner said he intended to call the attention of the proper authorities to the husband's statement that he judged the Institute to be always under the direction of a duly qualified man. He recorded a verdict of death from heart disease and emaciation, consequent on tuberculous disease, accelerated by want of appropriate medical and surgical treatment.

"MEXICAN CANTHARIDES."

IN a paper read to the Society of Public Analysts recently Mr. T. E. Wallis stated that certain poultry spices and foods contained insects, either whole or powdered, which have been identified as consisting mainly of species of *Notonecta* and *Coriza* coming from Mexico; he stated that the insects also form a regular article of commerce, and have been sold under the name of "Mexican cantharides." We had not previously heard of this article of commerce, and can find no reference to it. The number of blistering insects containing cantharides or some closely allied substance is large. The *British Pharmacopoeia* allows species of mylabris as well as cantharis to be used. Many species of mylabris occur in China and Eastern India, and the India and Colonial addendum of the *British Pharmacopoeia*, 1893, contains a series of preparations made from *Mylabris phalerata*, but other species of mylabris containing an equivalent amount of cantharidin may be used.

A MIDWIFE'S OFFICE REGISTER.

WE have received from Dr. John Hunter of Motherwell a copy of the *Office Register of Midwife's Transactions*, compiled by him for the use of medical officers of health and inspectors of midwives. It is designed to provide the means for keeping in the central health office an accurate and up-to-date individual record of each midwife—her personal and professional particulars, the inspections by the supervisor of midwives, and particulars of the various notifications to be made by the midwife to the medical officer of health. It is the result of Dr. Hunter's experience as acting M.O.H. and inspector of midwives for Motherwell during the past two and a half years. He has found it useful in keeping in close touch with nearly 100 midwives of varying professional capacity—from the ancient "handy woman" to the modern maternity nurse with full hospital training. The first page is intended to record complete general particulars of the midwife. The next five pages provide space for entering the results of the regular inspections of the midwife and her equipment and dress by the supervisor. Two pages are provided for the recording of cases in which the midwife has had to send for a doctor in accordance with the rules of the Central Midwives Board. One page gives a record of notifications of ophthalmia neonatorum, and a complete column is given for recording puerperal fever cases, deaths before the arrival of a doctor, stillbirths, dead bodies laid out, the substitution of artificial for breast feeding, and the liability of the midwife to be a source of infection. There is sufficient space for ten years' entries. When the midwife's name is written on the outer cover the booklets can be filed on the card index system in an 8 in. x 5 in. file. They can be purchased from Messrs. James Gray and Son, Brandon Street, Motherwell, for 1s. each.

CHINESE DOCTORS IN BRITAIN.

THE *National Medical Journal of China* (December, 1918) states that the first Chinaman to obtain a hospital appointment in Europe was Dr. Lin Boon Keng of Singapore, who was selected to be a house-physician in the Edinburgh Royal Infirmary some twenty years ago. Next came Dr. G. L. Tuck, who held appointments both at St. Mary's, London, and at the Brompton Hospital for Consumption. Afterwards, other Chinese doctors held similar posts—S. P. Chen at Cambridge, C. C. Wong at Edinburgh, Arthur Woo and W. L. Nen in London. Of the teaching staff of the newly organized Union Medical College (Rockefeller School) at Peking eight of the possible twenty-six are Chinese.

THE following vacant appointments of certifying factory surgeons are announced: Birkenhead (Cheshire), Chapel-en-le-Frith (Derby), Churchill (Donegal), Manorcunningham (Donegal), Sheerness (Kent), Turriff (Aberdeen).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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The Oliver-Sharpen Lectures

ON

THE FEEDING OF NATIONS: A STUDY IN APPLIED PHYSIOLOGY.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, JUNE 3RD AND 5TH.

BY

E. H. STARLING, C.M.G., M.D., F.R.S.

(Abstract.)

PROFESSOR STARLING remarked that although man's first care had always been to provide his daily bread, the science of dietetics was of comparatively recent origin, and the problems involved were at first tackled exclusively from the standpoint of the individual. In a few instances only were the results utilized for practical purposes connected with society as a whole or with large sections of the community. The provisioning of a nation was regarded as an economic question to be solved by the laws of supply and demand. It was not until the great war broke out that any of the nations awoke to the fact that efforts to provision a community would be disastrous unless based upon physiological principles.

Early Errors.

The Germans were the first to realize this, but even in Germany the first steps were taken by a voluntary association of scientific experts. In this country little heed was paid to scientific considerations until the submarine campaign seriously limited our facilities for shipping and importation. Had not the contingency of a food shortage been foreseen by the chief organ of science in this country—the Royal Society—so that a whole array of facts were at the disposal of the Government so soon as it had been convinced of the need for action, this country might have fared ill.

The Royal Society's Committee.

At the very beginning of the war the Royal Society had founded a Physiological War Committee to make recommendations to the Government on any question involving physiological principles, and in 1915 a subcommittee was entrusted with the examination of all questions affecting food. This subcommittee, largely on the initiative of Dr. Waller, first undertook an examination of the probable position in enemy countries; upon this two reports were presented—in 1915 and 1916. The subcommittee concluded that a predominant factor of the German economic situation was likely to be a shortage of available fats and oils, and pointed out the necessity for the most stringent limitation of imports of fats into Germany. Since the armistice we have learned how true these predictions were, and how much might have been saved in the duration of the war if our statesmen had recognized the all-important part to be played by real restriction of the importation of foodstuffs into Germany.

The subcommittee then estimated the food supply of the United Kingdom, and compared this with the requirements of its inhabitants. They suggested as means of economy a higher recovery of flour in milling, less meat production, increase in the manufacture of cheese at the expense of butter, use for food of materials employed in brewing and distilling, and the diversion of certain quantities of material used for stock feeding to human use. All but one of these recommendations were ultimately adopted and enforced by the Government.

The Factors to be Determined.

It was not until the appointment of Lord Rhondda as Food Controller, in June, 1917, that scientific principles obtained their proper place in the determination of policy. From this time onward the Royal Society Committee acted practically as a scientific consultative committee in all matters of food supply. When, towards the end of 1917, it was decided to pool the resources and supplies of all the allied countries, it became necessary to create an international scientific organ; to this end an Inter-Allied Scientific Food Commission was called into being, and met for the first time in March, 1918. The work of this commission, in continuation of that done for domestic

purposes in the United Kingdom, fell under three heads: (1) The actual requirements of the population; (2) the provision of the necessary food, whether by production at home or by importation; (3) the distribution of the food so obtained equitably.

Professor Starling explained the method by which a provisional answer to the first of these questions was obtained, utilizing the data published in the recent report on food requirements of the Royal Society's Committee (reviewed in our issue of March 22nd, 1919, p. 349). He concluded that the average consumption per head in the United Kingdom remained almost stationary during the war and little below that of peace time. The estimate for before the war was 3,410 calories per man, for 1916–17 it was 3,357, and for 1917–18 it was 3,377. No greater testimony could be given to the efficacy of food control based upon scientific knowledge.

Effects of Restricted Food Supply.

Professor Starling next dealt with the effects of a restricted food supply, and adverted to the excess mortality and evidence of generally lowered resistance, especially to tuberculosis, which obtained in Germany in the later years of the war. These observations when they affect a whole nation to such a degree of intensity, naturally attract the attention of all, but they should serve to impress upon us the evil economic effects on the productivity and health of a nation which must result so long as we allow so large a percentage of our population as was the case before the war to live in a state of permanent under-nutrition. Rowntree's data suggested that the mortality amongst the very poor in York was almost twice as high as amongst the best paid sections of the working classes. A nation able to provide for its members with such brilliant success during a European war with a submarine blockade ought to be able to prevent a recurrence in peace of the conditions which disgraced sections of our urban population.

Man, Animals, and Cereals.

Professor Starling then dealt with the composition of foodstuffs on the lines of the Food (War) Committee's recent report. Turning to the provision of food, he showed the wastefulness of animals as energy converters from the point of view of the human consumer, but remarked that the necessity of providing fat was the real physiological justification for the use of animals for the production of human food. In handling the position the German authorities made serious mistakes; their capital error was to permit the maintenance of the large stock of horned cattle, which in June, 1917, actually exceeded the number in 1913. Large quantities of vegetable food and of food which might have been utilized by man were wasted in the mere maintenance of cattle and pigs without any production of meat or fat. The ill-fed cattle deteriorated in quality, their working powers diminished, the milk supply became less and less, and there was a fat famine throughout the land. In this country the risk of a similar position coming about had to be faced. It was dealt with on other lines; more cereals were diverted from stock animals to man, and only one-third of what was available for feeding animals, other than working horses, was provided. Even here the deeply rooted instinct of the farmer to maintain his live-stock created difficulties, and had not the armistice been declared we might have had yet greater cause for complaint as to meat supplies. An important means of securing obedience to scientific principles was the fixing of cereal and meat prices in such a way that, for instance, pork production was made less remunerative than the selling of barley.

Method in Rationing.

Passing to the question of rationing, he said that the key of the problem was the provision of sufficient calories by diversion of food from animals to man, and the assurance of equitable distribution. If all foodstuffs are rationed, the attempt to secure equitable distribution must fail, because the average requirement will be too much for some individuals, too little for others; feeding at a common table, these differences adjust themselves; where individuals are rationed they do not. This explains why all systems of complete rationing have failed hopelessly. It is imperative to leave free some important and complete food which is within the means of all classes of the population, so that each individual can buy of it according to

his desire, and satisfy that part of his calorie needs not covered by the rationed articles. It was the view of the Royal Society Committee that bread must at all costs remain unrationed—a view which ultimately prevailed. The Cabinet determined that if the various measures of diversion from animals and increased production failed to provide enough bread, then carloads of cereals were to enjoy priority over all other shipping, whether of men or munitions of war. At the same time the bread was made sufficiently unattractive—but without diminishing its wholesomeness—to prevent its wasteful consumption, and efforts were made by propaganda and otherwise to reduce the consumption of cereals by providing other foods which might take their place, especially potatoes.

Order of Preference in Importation.

The maintenance of free purchase of bread demanded a strict adjustment of the importation programme, and the Royal Society Committee assigned the following order of preference:

1. A sufficient amount of cereals should be imported as breadstuffs to avoid rationing and to serve as an elastic reserve for the energy needs of the country, and all cereals in the country should be reserved as breadstuffs to meet the full demand for these.

2. A minimum of 16 oz. of fat should be provided a head a week, taking into account not only the meat fat and margarine, but also the fat contained in milk, wheat, and other foods available. In order to bring up the fat of the food to this amount the necessary quantity of bacon, fat meat, and oil seeds must be imported and the home supplies conserved by limiting the use of fat for industrial purposes.

3. A minimum supply of sugar amounting to 8 oz. a head a week must be supplied. Up to these figures, which the Committee regard as minimal, the import of food into this country should take preference of all other claims on shipping.

4. Any tonnage then available for supplying this country with food should be utilized to bring the meat ration up to 2 lb. a head a week.

With the exception of a temporary shortage in fats during the early part of 1918, which incommoded our population but was not attended by any noticeable ill effects on health and efficiency, the United Kingdom was the only nation in Europe which could maintain that no man, woman, or child had to go hungry or leave his or her hunger unsatisfied on account of war conditions.

Croonian Lectures

ON

THE SIGNIFICANCE OF THE CEREBRAL CORTEX.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS
OF LONDON, JUNE, 1919.

BY

G. ELLIOT SMITH, M.A., M.D., F.R.C.P., F.R.S.,
PROFESSOR OF ANATOMY, UNIVERSITY OF MANCHESTER.

LECTURE I (*Abstract*).

The Evolution of the Cortex.

IN the first of the series of Croonian Lectures on the significance of the cerebral cortex Professor Elliot Smith defined the aim and scope of his task as an attempt to discover how the cerebral cortex acquired its distinctive powers as the organ of intelligence.

Dr. Henry Head's researches have provided a new vision of the significance of the brain, and have thrown such a brilliant light into some of the darkest corners of cerebral structure and function as to compel every investigator of the nervous system to re-study the results of his own investigations with the aid of this new illumination. The activity of the thalamus is the physiological process which is expressed in consciousness by a crude awareness to contact, heat, cold, and pain, and the affective aspects, the pleasantness or unpleasantness, of these experiences, whereas the cerebral cortex endows these basic functions with spacial qualities, intensity and relativity. Dr. Head's recognition of this fundamental distinction makes it incumbent on those who are investigating the problems of

the evolution of the brain to inquire into the means by which the cortex acquired its powers of memory, of discrimination, and of spacial reference. The fact that these epicritic attributes are especially associated with the neopallium, which is found in its fully developed form only in the mammalian brain, suggests an inquiry into the nature of cerebral function in vertebrates other than mammals, and into the circumstances which brought the neopallium into existence.

The cerebral cortex was evolved from that part of the brain which originally was little more than the receptive centre for impressions of smell and the instrument for enabling the sense of smell to influence the animal's behaviour. Unlike all the other sensory tracts, those which convey impulses from the olfactory organ reach the cerebral cortex directly—that is, without passing through the thalamus. From a psychological point of view, therefore, the sense of smell occupies a unique and distinctive position. It represents the germ of all the higher psychological powers, or, perhaps it would be more accurate to say, the cement that binds together the elements out of which the powers of the cerebral cortex, as the repository of the impressions of past experiences, the organ of discrimination and appreciation of space and time, are developed.

In the primitive vertebrate behaviour is dominated by the sense of smell. It is the means by which the animal finds its food and determines its qualities, by which it recognizes friends or enemies, sexual mates or rivals. Smell is possessed of affective qualities which endow it with a direct meaning such as is not associated with either of the other two "distance receptors" (Sherrington), vision and the eighth-nerve-sense. In the primitive vertebrate living in the water smell is much more nearly akin to taste than it is in man and the land-living animals. When such an animal perceives the odour of food it is really getting a foretaste of the consummation of the reaction, when it captures the food and actually tastes it. Throughout the whole of the anticipatory phase it is under the influence of olfactory sensations, and a series of events, covering the whole period of anticipation and consummation, is linked together by the affective tone of smell into one experience, which includes the germ of memory and of spacial and temporal appreciation. But the sense of smell itself conveys only the vaguest indications of spacial relations. An animal attracted by a scent circles around until it comes within visual range of its quarry; then the eyes convey more precise information as to its position in space and as to its movements. Such visual information is almost entirely devoid of affective tone, of psychological meaning, which it acquires secondarily from the sense of smell. But it is biologically useful, because it enables the creature to steer its course more directly and accurately to the object of the pursuit; and for this reason it is the optic receptive centre, the tectum of the mid-brain, which in the primitive vertebrate is put into direct connexion with the motor nuclei and directs the movements of the animal. The sense of smell starts the reaction; the sense of sight directs it; the vestibular mechanism (the cerebellum) provides the apparatus for effecting the co-ordination of muscles without which the orderly movements of the whole body would be impossible.

In the course of the pursuit of its prey, when the animal is led by the sense of smell and is controlled by its dominating affective tone, the information collected by all the other sensory mechanisms is added to and woven into the tissue of the complex experience. Hence these other senses acquire a meaning and a share in the psychological activities which constantly increases in importance throughout the vertebrate series, until it culminates in the vast mental powers of man, in which smell plays a humbler and less obtrusive part, although still one of imperious importance.

In the following lectures the attempt will be made to explain how these wider powers were acquired, and the part played by the thalamus and the hypothalamus in this process.

THE United States Public Health Service estimates that more than 7,000,000 persons in the United States are infected with malaria. In the South the ravages of typhoid fever, tuberculosis, hookworm, and pellagra taken together do not equal those of malaria.

OSTEOPLASTIC CLOSURE OF CAVITIES IN BONE.

BY

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War surgery has no more frequent late operation than "sequestrectomy," despite the generalized use of the radical wound excision. In a majority of cases the removal of sequestra will complete the healing of the wound, but there is a percentage in which the "bone cavity" arises as an entity of clinical importance. Cavities are, of course, left after the removal of all sequestra embedded in callus; the bone cavity is such a cavity as will not become obliterated by natural means.

The problem of closure of such cavities did not loom very large in pre-war days and tended to become less and less prominent as prompt and more radical methods of treatment were brought to bear upon the causal conditions—for example, acute infective osteomyelitis. Chronic empyema presents the same difficulties—the cavity with rigid infected walls—and modes of treatment of the one are in principle applicable to the other.

Pathology.

In the pathology of the bone cavity in war primary devitalization and septic osteomyelitis, with necrosis and caries of bone, play their part. A cavity results bounded mostly by callus, lined by a granulation layer of varying thickness. Oedema from constriction of vessels by fibrous tissue seems responsible for the pulpy thick layers occasionally found; in other instances a small sequestrum is the cause. The crux is that this granulation tissue is not invaded by bone cells in its deep layers and there is no concentric callus formation. The ingrowth of granulations must be limited largely by this, and not by vascular influences; were the ingrowth of bone to take place adequate blood supply would be assured. For the deficient bone growth sepsis must be held responsible; degeneration and absence of osteoblasts can readily be demonstrated in such cases, just as in non-union of fractures.

Baldly stated the problem is that granulations cannot fill the cavity, the bone around cannot form callus to fill it, and the walls cannot contract and obliterate it.

Methods of Treatment.

Various are the methods that have been employed in dealing with the condition. Broca's method is to remove one of the walls to permit of the surrounding soft tissues to come into contact with the remaining walls. This involves an extensive removal of bone, particularly as the tissues in the region of bad gunshot fractures are usually far from soft. Colonel Sargent has recently described a method which obviates the above disadvantage by using a muscle flap which needs a very much smaller bone removal to permit of its introduction into the cavity. Some form of filling is the alternative to the above principle of treatment. Many materials have been used—for example, blood clot, fat, bone-chips, and sponge. Mosetig's wax (iodoform, spermaceti, and sesame oil), with a correct technique, achieved much success. It has recently, however, been eclipsed by bipp. The success of this preparation has been practically uniform in a certain class of case, *provided always that a proper preparation of the cavity has been carried out*. Neglect of this is accountable for nearly all the failures.

Two Types of Cavity.—In view of the properties of bipp, it is possible to classify bone cavities into two well-defined types (see Diagrams 1 and 2): (A) Where the sinus leading to the cavity passes through a considerable thickness of soft tissues; the necessary thickness varies with the size and shape of the opening into the cavity and the amount of scarring of the parts. (B) In subcutaneous bone—for example, the tibia, or where the superficial soft parts have been destroyed—the skin is bound down to the bony edges. Only failure can result from freeing the skin edges and suturing them over a bipp filling. The (A) cavities react readily to bipp filling—why, it is hardly necessary to discuss—overcoming of sepsis, and the stimulation of osteogenesis play a part; certainly a free growth

of granulation occurs. The question naturally arises, Cannot the cases in (B) be converted into Class A? Can we provide a durable covering for a bipp filling? The

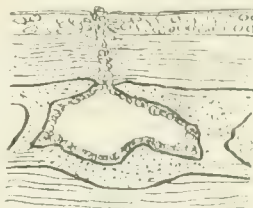


DIAGRAM 1.—Class A.



DIAGRAM 2.—Class B.

bone cavity is an open box; can we find a lid for it? It seems to me the question might be solved by the use of a sliding skin-fat-periosteum bone flap.

OPERATIVE PROCEDURE.

The method adopted is illustrated by the following typical case:

Pte. J. (repatriated prisoner of war); wounded March 26th, 1918; admitted Lord Derby War Hospital January 24th, 1919. X-ray showed sequestra in left tibia at junction of upper and middle third. An opening a quarter of an inch in diameter over the subcutaneous surface of the bone led directly to necrosed bone, and discharged intensely foul pus.

First Operation.

On February 1st a small vertical incision was made with the sinus at its middle; several large sequestra were removed, and beyond these spongy carious bone was curetted away in every direction till healthy tissue was reached. The resulting cavity was cleansed with peroxide and packed with flavine gauze. The opening in the bone measured $\frac{3}{8}$ in. by 1 in.

At the end of twenty-four hours the packing was removed and intermittent irrigation instituted; flavine and Dakin's solution on alternate days (three times and six times per diem respectively). A smear of fair thickness, examined on February 25th, showed two bacilli and two streptococci per field.

Plastic Operation.

On February 27th the cavity was first curetted again and the whole of the newly formed granulations removed; the interior was cleansed with hydrogen peroxide, dried, and packed with gauze soaked in "preparation" iodine. The skin area was again cleaned. (The use of strict aseptic technique throughout is assumed.) Next the skin incision was prolonged upwards for a short way, and converted into a J by a curved cut extending inferiorly over the posterior tibial border about one inch below the inferior border of the opening (Diagram 3). The skin and subcutaneous tissue at the lower part of the flap thus marked out were raised as far as the lower level of the opening, where a transverse incision was made in the periosteum extending to the posterior tibial border (Diagram 4). A vertical incision in



DIAGRAM 3.

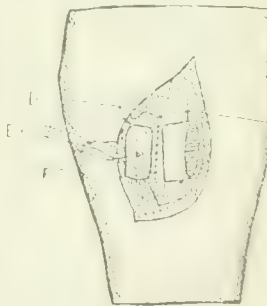


DIAGRAM 4.

A, Extent of cavity. B, Opening of cavity. C, Incision in periosteum. D, Flap of periosteum. E, Cut in periosteum freeing flap. F, Bone flake.

the periosteum one inch in length was next made, extending vertically from the upper limit of the opening, and through this incision the periosteum was lifted, together with fat and skin, as far back as the tibial border, by means of a fine sharp periosteum detacher. (It is, of course, essential that the separation be carried no lower than the upper limit of the opening.) The bone slice from the cortex was next raised by a fine chisel; the cuts were made along (1) the periosteal incision below, (2) the lower level of periosteal detachment above (an oblique use of the chisel or a keyhole saw is desirable here to avoid further stripping of periosteum), (3) and then into the side of the cortex presenting at the opening; by a combination of chiselling and gentle leverage a flake of bone, 1½ in. vertically by ¾ in. transversely, was raised, the posterior attachment being fractured. The flake was between ½ in. and ¾ in. at

its thickest. To permit the flap thus fashioned to slip into place it was then necessary (1) to make a cut with scissors in the periosteum at the posterior border of the bone flake and to extend this cut to the upper limit of periosteal detachment; (2) to undercut the skin posteriorly (in some cases it is necessary to make lateral cuts to free the skin sufficiently to secure apposition without tension; in others a U-shaped flap is preferable). The anterior, upper, and lower borders of the opening were next levelled with a chisel to allow the flake to sit squarely in place. A further strip of skin was excised along the anterior border of the opening, so that the suture line should lie well away from the opening.

The whole area was cleansed with peroxide, haemostasis attended to, and the packing removed from the cavity, which was filled with bipp paste.

The fixation of the flap was effected by (1) interrupted fishing gut sutures through the skin; (2) a wide mattress suture passed deep to the bone flap (Diagram 5).

A rubber-dam drain was inserted at the lower part of the J (in some cases a separate stab-incision is best), a flavine gauze dressing was applied, and the limb splinted.

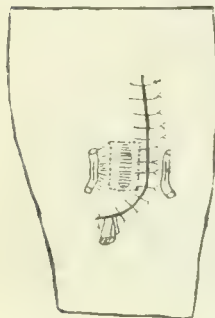


DIAGRAM 5.

After-Progress.

Reaction of 100.6° and 100.0° occurred on the second and third days; typical bipp sero-pus drained for two weeks. The upper end of the incision ulcerated where the stitches passed through old scar. Stitches were removed on the tenth day. The ulcerated area was dressed with flavine, brilliant green being useful occasionally as a stimulant.

In one month the bone flap was firmly fixed in place. Complete healing occurred in five weeks.

VARIATIONS.

1. *Sepsis.*—In many cases the cavity reaches the central hospital "ready made." Nevertheless, a preliminary cleansing operation with a subsequent sterilizing course is desirable. It is difficult to give any precise smear figure for the septicity margin that can be dealt with by bipp. In any case it is much lower than the smear figure for the cavity before the plastic operation, as the infected tissue is removed by the curette. In half the cases both streptococci and bacilli have been present in the smears (though never more than two or three per field in a thickish smear); one would not dream of suturing soft parts under such circumstances. The period between the two operations is usually much shorter than that in the case recorded; seven to ten days is usually sufficient. Clinical "cleanness" of appearance in these cases seems as dependable as the smear estimate, as far as ultimate results go.

2. *The Bone Flap.*—Extra vascularity can be secured by utilizing a portion of cortex into which muscle or tendon is inserted. In a case where part of the sartorius insertion was used, the bone flap oozed freely. Splinting counteracts the only disadvantage.

3. *The Size of the Opening.*—The size of the opening, not the size of the cavity, is the most important factor in this procedure. The largest opening so far dealt with has been 2 inches in length; perfectly sound union was obtained. Should one hesitate at using a bone flake longer than this, on the grounds of its nutrition, a periosteal pedicle could be made at both ends, or periosteum alone be used to cover part of the cavity.

4. *Severe Scarring of Skin with Ulceration.*—I have not encountered extensive ulceration of the skin in association with a bone cavity. It is courting disaster to attempt to form a flap out of scar tissue; the shortest plan of treatment would be wide removal of one of the walls of the cavity, but even after this one would have to be prepared for a severe reaction or worse. The flap itself should not contain any but the slightest scar.

RESULTS.

Thirteen cases have been treated in this manner—one in the humerus, one in the ilium, the rest in the tibia.

In two cases in which the cavity was very clean (and no sequestra present) the preliminary operation was dispensed with; no untoward result followed.

In six cases there was a reaction of 100° to 101°; locally, inflammatory oedema has been the utmost complication apart from stitch ulceration in old scars.

Three healed per primam with no serous discharge; the rest had the usual bipp sero-pus for periods varying from one to three weeks; one was reinjected with bipp on two occasions, the bone flap not being a good "fit"; sound healing was attained ultimately. The average time of complete healing was three and a half weeks.

In no case has necrosis of any part of the bone flap occurred. The bony union was sound in every case but one at the end of a month, as far as palpation could ascertain. In the case in which two injections of bipp were needed, union of the flap was delayed till nine weeks after the operation.

SUMMARY.

1. Bipp filling of bone cavities is in every case a successful method of treatment provided always that the preparation is thorough.

2. There are two types of cases: (A) The larger group—where a sufficient thickness of soft tissues is present to cover the opening—here simple filling is adequate. (B) Where no soft tissues can be placed over the opening, which lies flush with the skin; these cases can be treated successfully by covering the opening with a skin-bone flap and filling the cavity with bipp.

3. *The advantages are:*

(a) Less extensive disturbance of tissues than in any other operative procedure for closure of the cavity—no small consideration in war scars.

(b) Anatomical restoration of the bone is achieved; strengthening and not weakening results; fresh osteogenic surfaces are exposed.

(c) Good cosmetic result.

The objections are:

1. A foreign body is left in the tissues; but it (a) combats infection, (b) stimulates osteogenesis, and (c) is removed naturally when these ends have been attained.

2. *Sepsis* is neutralized by adequate preparation, careful technique, and bipp.

3. *A plastic bone operation* is not to be approached lightly in the presence of the slightest sepsis. But (a) the bone used is more vascular than normal; (b) the exceedingly vascular bone at muscular insertions can be used; (c) bipp smearing prevents infection.

4. *Difficulty of Raising the Flap.*—Much patience and care are needed in the use of the chisel and saw. War hospitals are not often equipped with electric saws; the two experiences I have had of the use of Albee's motor in bone grafting leave no doubt that the operation could be greatly simplified by this instrument.

My thanks are due to Colonel A. Simpson, Administrator of the Lord Derby War Hospital, for permission to publish this article; and to Major MacNeill, officer in charge, surgical division, for his advice and help in reading the proofs.

CHRONIC BONY FISTULAE.*

BY

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CASES of chronic bony fistulae arising from a compound fracture and discharging months, or even years, after the infliction of the wound, are to be found in every large military hospital. The French authorities have established special hospitals and centres for such cases, and various kinds of special treatment, including thermal baths, radiant heat, and injections of various kinds, have been tried. But, in spite of these methods and the issue of special rules and instructions, a considerable number of such cases came under my care during the summer and autumn of 1918. During earlier periods of work in France I had treated such cases by the removal, as thoroughly as possible, of the focus of infection and of all dead or foreign material, and then disinfection of the wound by applying pure carbolic acid and tincture of iodine, plugging the whole for forty-eight hours with iodoform gauze, and then allowing the wound to granulate up.

As a rule, the cases so treated did fairly well, and probably 70 per cent., or more, were cured. The cure, however, was lengthy, and in a certain proportion of cases

* Read before the Surgical Section of the Royal Academy of Medicine in Ireland, February 28th, 1919.

the plan failed even after two or more operations. I think I have overcome this difficulty by the use of modified bipp. The chronicity of these cases is due to the fact that the infection is firmly implanted in the tissue of the bone, and that frequently a sequestrum or foreign body is present. If on x-ray examination either of these complications is present, no cure can be expected from any method of treatment, which does not include their removal. The operation must be planned after the results of x-ray examination are known. If possible the fistulous track should be excised right down to the bone, and the more of the fibrous scar tissue removed the better. When the bone is reached, the periosteum should be raised for some distance all round the opening. The whole infected areas of the bone should be thoroughly explored and laid open, all sequestra and foreign bodies should be taken away, all overhanging walls removed by forceps or chisel, until the walls of the cavity in the bone slope gradually to the deepest point. If possible the bony walls should be gouged away till healthy bone is reached, as is shown by free oozing from the cut surface. Frequently it is not possible to carry out this step of the operation completely. The whole wound is now dried and swabbed with ether or methylated spirit and packed for a couple of minutes with gauze wrung out of one or other of these liquids. Modified bipp (iodoform 2, bismuth 1, and vaseline 12) is then rubbed into the walls of the bony cavity, which finally is filled with it. If the cavity is small and regular, and it has been possible to remove its original walls fairly completely, and if there is a good depth of healthy tissue between it and the skin, the wound may be closed in layers, using one or two layers or even more of catgut for the periosteum and muscles, a separate layer of catgut for the deep fascia, and silk impregnated with bipp for the skin and superficial fascia with a few sutures of fine silk-worm gut to obtain good coaptation of the skin edges. Gauze smeared with bipp is placed over the wound, and a thick layer of wool and a firm bandage is applied. If all goes well, the dressing need not be changed till the stitches are removed about the tenth day, when the wound will be found firmly healed.

If, however, for any reason it is not thought safe to close the wound it is plugged tightly with a long strip of iodoform gauze impregnated with bipp. The wound is first dressed at the end of forty-eight hours, when on removal of the gauze a perfectly dry clean cavity should be left. It is filled with bipp. A superficial dressing is applied and changed every fourth or fifth day, fresh bipp being put into the cavity as fast as it disappears. It is a matter of surprise how quickly a large cavity will fill up and heal under this treatment; in no circumstances should curiosity ever tempt one to put a probe into one of these cavities during the course of healing, or interfere with it in any way. Indeed, I look upon a probe as one of the most dangerous of surgical instruments and a fruitful source of chronicity and delay in healing. The healing of these cases can often be hastened by inserting loose sutures at the operation and tying them at the first or a subsequent dressing. In some few cases it may be advisable, if the cavity left is very large, to undertake a special operation for suture at the end of about a week, when it is seen that the wound is dry and that there is no further tendency to suppuration. The reason for plugging tightly for forty-eight hours is to check the haemorrhage and get a perfectly dry wound; the bipp with which it is then filled is as nearly as possible innocuous to new formed granulation tissue, and is pushed out as the latter fills up the cavity, till finally epithelialization can take place.

One great advantage of this treatment is that the gauze impregnated with bipp can be removed without causing fresh haemorrhage, as it does not stick to the walls of the cavity; its removal is practically painless. There is probably no special virtue in using iodoform gauze, beyond the fact that it is easily obtained in suitable widths without ravelled edges. I have never seen any signs of iodoform poisoning even after the use of two or more yards of iodoform gauze used with 3 or 4 oz. of bipp; the excess of bipp is gradually squeezed out as the gauze is packed thoroughly home into the cavity.

During last summer and autumn I had under my immediate care 25 cases of chronic bony fistulae, which had lasted for periods ranging from two months to over four years. The average duration of all these cases from

the time they were wounded until operated on by me was a few days over sixteen months; many of them had passed through six or more hospitals, and more than one had already been operated on seven or more times. Practically all the larger bones of both upper and lower extremities, and also the ribs, sternum, pubis, and crest of the ilium, were so treated. In 22 cases, or 88 per cent., the wounds were completely cicatrized when the patient left the hospital. One required a small secondary operation, done under cocaine anaesthesia, before he could be evacuated cured. All the others were submitted only to one operation; in 12 cases the operation was concluded by plugging, in 9 by complete suture, and in one the wound was partially sutured and partially plugged. In these 22 cases the average length of time between the date of the wound and the curative operation was exactly sixteen months, whereas the average stay in hospital after operation was only one month and two days. Eight cases were discharged healed in a fortnight, though three of them had had previous treatment for over forty months. One of these, it must be noted, had been a prisoner in Germany for over three years. Only three patients remained in hospital for two months or longer; the longest period was ten weeks, and this patient had been previously treated for seventeen months. In one of the three cases unhealed when I left France there was an extensive wound of the sternum and ribs which had been under treatment for five and a half months before operation; three weeks later it was nearly healed. In a second case, of injury to the ribs complicated by empyema, the wound had been received twenty-five months previously. I operated on him twice; at the first operation some necrosed pieces of ribs were removed, but the presence of pus in the pleural cavity was not discovered; the second operation was performed less than a month before I left France, and at the time of my departure the patient was doing very well and the discharge was greatly reduced, so that a cure might be looked for. The third case gave more trouble.

A soldier was admitted two months after being wounded in the back of the right chest. There was a sinus just below the right sterno-clavicular articulation. He stated that the shell fragment had lodged, and that when admitted to the field ambulance there was a swelling where he now had the fistula. An incision made in the hope of finding a projectile refused to heal, and resulted in the sinus seen on his admission. Though he had a scar below the right scapula, repeated x-ray examination failed to detect the presence of a foreign body in the thorax, abdomen, or neck. At the operation it was found that the fistula led to the joint between the first right costal cartilage and sternum. The cartilage and border of the sternum were removed, the wound was sutured but failed to heal; six weeks later the wound was again excised and plugged, the same thing was done three months later, and finally a fourth operation was performed exactly six months after the first, and the wound was closed by suture. Even this was not a complete success, but three weeks later there was only a little clear serum coming away, and it looked as if the wound would soon be healed. It is hard to decide from the history what was the cause of this fistula; the operation performed at the ambulance was apparently only trivial, as only cocaine was used, and it is hard to imagine that the bones and joint could have been injured or infected, and it was certainly not done by the projectile. It is perhaps possible that there was an unrecognized tuberculous process going on at this point, the swelling caused by which was first recognized when examining the patient for an exit wound. This theory would explain the marked failure to respond to operative treatment.

Of the three cases, or 12 per cent., in which a cure is not claimed the average period of previous treatment was eleven months, whereas the average time of observation afterwards was three and a quarter months. Two cases, the first and the third, were, at the time of my departure, rapidly progressing towards recovery, and have probably before this become cured, one, it must be confessed, only after his fourth operation. The other case was complicated by an empyema, and though his condition, both local and general, was greatly improved, yet his complete recovery could not be vouched for with any certainty. In illustration, I shall give the following brief details of a few typical cases.

CASE I.

A young soldier, admitted July 2nd, 1918, wounded by a shell splinter in the left leg on July 7th, 1917. An old fracture of both bones of the leg at the junction of the lower and middle thirds had caused considerable shortening and much scar tissue. There was a discharging sinus over the inner aspect of the tibia and two over the fibula. He had undergone several operations. On July 3rd the sinus over the tibia was excised and a large area of bone exposed, the opening in the bone was

freely enlarged and a sequestrum removed. The sinuses over the fibula were curetted, but no sequestra were found; the surrounding skin was extensively undermined and thick silk sutures were put in so as to close the wound except in the centre. Bipp was applied to the bone cavity, which was packed with bipp iodoform gauze. This was removed after forty-eight hours, and a cavity the size of a large walnut was filled with bipp. The dressings were changed every fourth or fifth day. The cavity gradually filled up and when he left hospital on September 10th, nine weeks after the operation, the wound was completely healed.

CASE II.

A soldier admitted on July 9th, 1918, had been wounded by a shell in the left arm on April 30th, 1918. The left humerus was fractured in the upper third. On September 13th, four and a half months after being wounded, he presented fistulae of the upper third of the arm: the x ray showed that the fracture was consolidated, and that a sequestrum was present. At the operation the two fistulae were enlarged and the bone exposed, the bridge of bone between the fistulae was taken away with the gouge, and several large sequestra were removed from the interior of the bone. Another sinus on the back of the arm was also enlarged and a large sequestrum removed from the surface of the humerus. The interior of the bone was cleaned and douched with Dakin's solution, and after application of bipp was packed with bipp iodoform gauze. He was evacuated cured on November 5th, 1918, seven weeks after operation.

CASE III.

A soldier was admitted on September 23rd, 1918. He had been wounded in the upper part of the left arm by a bullet on February 23rd, 1915, forty-three months previously. He had been operated on several times, but still had a sinus connected with the upper third of the humerus. On September 30th, 1918, the fistula and cicatrix were completely excised, the bone was bare and rough on the surface, and this area was removed by the chisel. The whole wound was treated with bipp. The muscles and deep fascia were united by two layers of catgut, and the skin closed with silk and silkworm gut. He was dressed on the sixth day and the stitches were removed on the eighth day, and he left hospital completely healed on October 14th, a fortnight after the operation.

CASE IV.

A soldier wounded in the left forearm by a shell splinter on May 27th, 1917, when seen on October 17th, 1918, sixteen and three-quarter months later, had two sinuses still discharging over the back of the left ulna. At the operation the middle third of the ulna was freely exposed, the two sinuses were thrown into one, and both central and superficial sequestra were removed, the cavity in the bone was cleaned with bipp and packed with bipp iodoform gauze. The wound was almost completely closed by deep silk sutures. The plug was removed at the end of forty-eight hours and the wound encouraged to close. It was soundly healed three weeks later.

CASE V.

A soldier wounded in the left leg on April 17th, 1917, when seen on October 25th, 1918, eighteen months later, had a sinus over the upper end of the inner surface of the left tibia. The x ray showed that the bone had been fractured, and though there was great irregularity at the seat of fracture, no sequestrum could be seen. On operation, bone at the bottom of the sinus was found bare and irregular; this was chiselled away, and the wound cleaned with bipp; the tissues were sutured in layers with catgut, and the skin closed with silk. The stitches had been removed, and the wound was soundly healed at the end of a fortnight.

Only 88 per cent. of cures are claimed, though it might be suggested that the real percentage of cures was more accurately 96 per cent. However, even the lower figure is quite high enough to give encouragement to those who have felt inclined to despair over the chronicity of these bony fistulae. When I speak of cure in these cases I cannot guarantee a permanent cure in every case, as I have not been able to follow the after-history for a sufficiently long time. All have seen cases in which, usually as the result of some trivial injury or excessive strain, infection has re-started in wounds that had remained healed for months. But I would hope that the large amount of bipp left in these wounds would tend permanently to inhibit the action of any organisms that remained in the tissues, or would even cause their final destruction. In this list I have not included several successful operations for recurrent abscesses developing in wounded limbs at various periods after cicatrization, because, although in most cases they were originally complicated by fracture and osteitis, at the operation no diseased bone was found.

There is a large field for this method of treatment in civil practice in cases of chronic middle-ear disease and complicating mastoiditis. We treated three cases of the latter complication, with surprisingly rapid results, the wounds in each case healing and the discharge from the ear ceasing in between three and four weeks. I suggest

that a trial should be made of laying these cases freely open, plugging them with bipp iodoform gauze for forty-eight hours and then filling the wounds with bipp and allowing them to heal up.

I heard the statement frequently made that these cases of chronic bony fistulae suffered from excessive zeal on the part of the surgeon; so far from this being the case, I think they suffer more frequently from a lack of zeal. The surgeon is disheartened and is satisfied with what one might describe as a "scrapeotomy," instead of undertaking a proper surgical procedure based on modern surgical principles. It is much better to perform one complete operation, even though extensive, which has a fair chance of success, than to perform a limited operation and find oneself forced by its failure to operate again and perhaps yet again.

A METHOD OF SECURING RAPID HEALING OF BONE SINUSES.

BY

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AND

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Fistule osseuse in the late war was the despair of French military surgeons. Their attitude towards the condition had come to be one almost of surgical impatience; and as late as the winter of 1917 this attitude received official countenance in a ministerial circular which suggested that the "fistulized" should be sent to fashionable spas—in the vague hope, it seemed, that an angel might trouble the waters!

A considerable and tedious experience of this condition had led us to regard the official view with a measure at least of understanding. We had, indeed, several immediate successes after operation, but these were occasional, and the prospect of obtaining cicatrization within a few weeks after a single surgical intervention was slight and uncertain.

Our immediate successes had been secured chiefly by instillations every two hours of Daufresne's standardized solution of hypochlorite, after the method of Carrel—notably in a difficult case of a sinus of one and a half years' standing opening in the middle line of the popliteal space. It led into a cavity in the lower end of the femur, from which we removed a sequestrum 3 in. long and $\frac{1}{4}$ in. broad. The wound was completely cicatrized six weeks after operation. In a similar interval of six weeks after sequestrectomy we obtained the healing of a double sinus of the lower end of the tibia.

Another post-operative treatment which occasionally encouraged us was the daily injection of iodoform and bismuth subnitrate suspended in liquid paraffin, used alone or alternately with Carrel instillations. By this method a case of tarsal sinus, which had persisted two and a half years and had been operated on eight times, healed within four weeks.

But these were bright particular instances, and although out of 17 cases we only thrice failed to secure ultimate cicatrization, yet prior to our acquaintance with Mr. Stoney's method success was too often made tedious by repeated operation and protracted treatment, and it was not until our adoption of his technique that we began to approach these cases with a new zest and a confidence which we were able to justify.

Among 15 consecutive cases we had two failures—that is to say, cases which did not cicatrize after a single operation. (One of these cases cicatrized six weeks after a second intervention.) Of the 13 successful cases, 6 were healed in or within four weeks, 4 in or within six weeks, and of the remaining 3 cases one was discharged in seven weeks and the other two were delayed in hospital simply by a trophic eczematous condition of the skin resulting from injury to nerves. Of these 15 cases 11 were treated by suture. In the remaining 4, in which this was not possible owing to inclusion of the sinus in an extensive cicatrix, treatment was by plugging, as described by Mr. Stoney.

The cases which were discharged cicatrized from our

hospital appeared immediately before a French medical board, which sent them on convalescence.

In no case did we observe any symptom of poisoning either by iodoform or bismuth.

RADICAL CURE OF FEMORAL HERNIA BY THE INGUINAL ROUTE.

BY

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DURING the period of the war 509 cases of hernia have come under my care for operative treatment at various hospitals. All types—inguinal, femoral, ventral, umbilical—have been dealt with, and the age of the patients has varied from 9 months to 72 years. Fifteen of these herniae were strangulated, and in the whole series no death has occurred.

Thirty-seven cases of femoral hernia were met with, and of these 10 were strangulated. The method of procedure by the inguinal route is not new. It is attributed to Lotheissen, and was made the subject of a communication by Mr. C. H. Fagge in 1911. I became acquainted with the operation by witnessing it in Paris in 1909, and since that time have consistently adopted it. Mr. Fagge in his paper said:

So many of the younger surgeons now use this method that it is unnecessary for me to give exact details of the process.

Since that date men from nearly every school in the kingdom and from the colonies have acted as my residents, and I can only call to mind one who had ever seen femoral hernia dealt with in this manner. It would appear that the operation is not well known, and reference to standard textbooks supports this view. In Choyce's *System of Surgery*, Cheyne and Burghard's *Manual of Surgical Treatment*, and Burghard's *System of Operative Surgery*, no mention of it is made. Warren mentions it somewhat casually, but gives no details as to its performance. The only two books that give it due prominence are Rowland's and Turner's *Operative Surgery* and Taylor's *Operative Surgery*. Burghard (*System of Operative Surgery*) emphatically maintains that, apart from efficient ligation of the sac, no other procedure is really necessary, but qualifies this by suggesting that some endeavour should be made to close the ring as an extra precaution. R. W. Murray also holds that ligation of the sac is all that is required to obviate recurrence.

In Keen's *Surgery*, however, it is noted that mere ligation is attended by 30 per cent. of recurrences. Particularly emphatic is the statement in Cheyne and Burghard's *Manual of Surgical Treatment*:

In femoral hernia, besides obliterating the neck of the sac, it is necessary to do something to reduce the size of the femoral canal, as otherwise recurrence takes place apparently invariably.

These views are supported by the fact that at one time at one hospital there were under my care three cases of recurrent femoral hernia operated on by London surgeons of repute.

Multitudinous methods are described for dealing with the femoral ring and canal—a sure indication that no particular method can be safely relied on to prevent recurrence. In my opinion, the method of approach from below is unsound. Exposure of the femoral ring from above gives better access to the essential structures concerned. Of the procedures based on these lines the Lotheissen operation is considered the best, both from an anatomical and practical standpoint.

I propose to give a brief description of the operation, as applied to ordinary strangulated cases, with comments on the difficulties encountered and the advantages accruing.

The incision is that employed in the case of inguinal hernia. It should be free and prolonged at its lower end. The external ring is defined together with Poupart's ligament, and the external oblique aponeurosis divided throughout the length of the inguinal canal (Fig. 1). The arching fibres of the conjoint tendon are clearly demonstrated, the cord or round ligament defined and dislocated from its bed. An incision is then made through the transversalis fascia where it forms the posterior wall of the inner part of the inguinal canal (Fig. 2).

The extraperitoneal fat is thus exposed and the deep epigastric vein lying well to the inner side of the artery is

sought for at the outer end of the incision. This vein marks the outer edge of the peritoneal diverticulum that leads to the femoral ring. Separation of it renders easy the definition of the outer aspect of the neck of the sac. Some curved blunt instrument or the finger can then be passed behind the neck of the sac and made to emerge in the wound on its inner side. The condition of the sac as to contents can then be easily ascertained. If it is clear that nothing is passing through the neck from the peritoneal cavity, an

endeavour is made by blunt dissection and gentle traction to deliver the sac from the thigh. In Fig. 3 this has been done, and the unopened sac is presenting in the wound. The sac is opened and ligated at or above the junction with the peritoneal cavity (Fig. 4). The iliac vessels are then pulled outwards and the femoral ring clearly defined. Three sutures are then passed through the conjoint tendon above, and below through the posterior thickened margin of the femoral ring—Cooper's ligament. The outermost of these sutures lies close to the vein and should be inserted first (Fig. 5). The passage of these sutures is quite easy if a small half-circle needle be used. When tied, these sutures bring the conjoint tendon in contact with the posterior boundary of the ring, and a new bed for the cord or round ligament is thus constituted. It will be noted that no attempt is made to close the femoral ring. All direct communication with the peritoneal cavity is abolished—the femoral ring opens into the musculature of the anterior abdominal wall. In Fig. 6 a probe has been passed through the femoral ring into the thigh, the better to demonstrate this altered relationship. The remaining structures are united as in an inguinal hernia.

It happens fairly frequently that, though empty, the sac cannot be delivered easily. In this case the neck is cut across, and the hole in the peritoneum thus resulting is sewn up in the usual way. Taylor (*Operative Surgery*) comments on this difficulty, and advises that the incision be prolonged down into the thigh in order to aid delivery above by exposure and manipulation of the sac from below. This is laborious and quite unnecessary. It was my

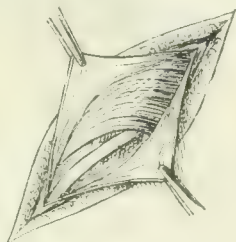


FIG. 1.

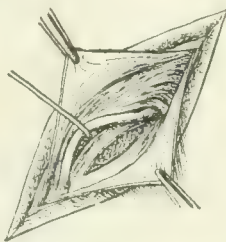


FIG. 2.

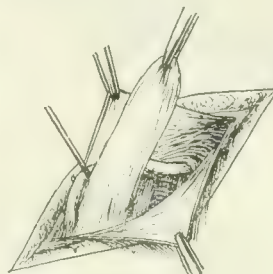


FIG. 3.

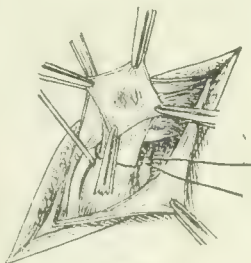


FIG. 4.

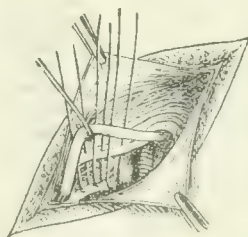


FIG. 5.

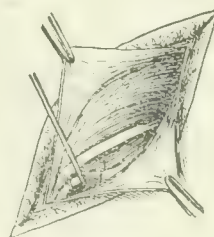


FIG. 6.

custom in such cases to leave the sac in the thigh, but this procedure was abandoned after a somewhat unusual experience. I had left in the thigh a thick sac, which could be readily detected. The patient had an attack of vomiting some time after. This was really attributable to bad food, but she was sent up as an urgent case with a diagnosis of strangulated femoral hernia. The sac can be very quickly removed by undercutting the lower lip of the incision, and since then I have always removed it in this way.

Should the sac not be empty, the peritoneal cavity is opened immediately without any attempt at delivery of the sac, and in any doubtful case this is the easiest and safest course to pursue. The nature and condition of the contents is apparent at once. The most frequent content in an unstrangulated case is omentum and is in my experience the only content that becomes adherent to the sac. No attempt is made to separate these adhesions, but



FIG. 7.

the omentum is ligatured and cut off in the peritoneal cavity. The neck of the sac is then cut across, the sac with its adherent omentum being removed at a later stage in the manner above described.

On one occasion the bladder was encountered not as a hernial content but forming the inner wall of the sac. From below it might well have been included in the ligation of the sac, from above the condition was obvious and readily dealt with.

It has been urged that the operation is complicated, and the only reference to it in Keen's *Surgery* dubs it as such and so dismisses it. That it can be made complicated there is no doubt. The operation is rather more difficult in the male owing to the presence of the cord, but in these circumstances I have completed the operation, without undue haste, in eighteen minutes.

Operation from above has even greater claims in strangulated than in simple cases. The general peritoneal cavity is opened as soon as the extraperitoneal fat has been exposed. The condition of the bowel at the site of and above the constriction can be immediately determined. An abnormal obturator artery can be seen and avoided—it has been encountered on three occasions. When the operation is undertaken from below and the gut is not viable, textbooks on operative surgery recommend, almost without exception, that resection should be performed through a second abdominal incision. By the inguinal route a secondary incision is unnecessary, sufficient exposure being easily obtained to permit of the performance of any procedure that may be deemed necessary. Invagination of a gangrenous patch, excision of a gangrenous area without division of the mesentery, and excision of bowel and mesentery with lateral anastomosis have been accomplished in comfort.

Opportunity has been afforded of noting the nature of the constricting agent. It has been observed that reduction by an upward pull is difficult before the constriction is relieved. In other words, the resistance of the constricting ring to distension is considerable. The anterior, posterior and internal boundaries of the femoral ring are dense resistant structures, but the same cannot be said of the slight fibrous partition of the femoral sheath that forms its other boundary, on the side of the femoral vein. The resistance to distension of any ring can only be that of its weakest segment, and it follows therefore that the rôle of the femoral ring as a constricting agent has been exaggerated.

This theoretical consideration was put to the test in the last strangulated case—a male patient aged 72. Gimbernat's ligament was carefully divided outside the sac to such an extent

that a finger could be introduced between these structures. The reduction of the sac contents—a Richter's hernia of small bowel—was in no degree facilitated. Not until the neck of the sac itself was divided could the bowel be drawn up.

In operating from below the constriction is usually relieved from inside the sac, thus dividing its neck and Gimbernat's ligament at the same time. No due assessment can be made in this way of the relative parts played by each. It is contended that the essential agent in strangulation is the thickened neck of the sac, and that Gimbernat's ligament is merely a reinforcing structure. Another striking feature is the frequent occurrence of a Richter's hernia in association with a hydrocele of a hernial sac. In many of the simple cases dealt with the hernia was irreducible, and in every such case a hydrocele was demonstrated. It was noted that the hydrocele did not involve the neck of the sac, but was terminated at a level distinctly below it, at a situation indeed corresponding to



FIG. 8.

that at which the sac is twisted upward and outward, as it emerges from the saphenous opening (Fig. 7). It would appear that the combined effect of axial rotation and friction determines fusion of the sac walls at this site, and brings about the condition shown in Fig. 8, a condition readily complicated by the occurrence, as depicted, of a Richter's hernia. Irreducible femoral hernia of this type may easily escape notice, but the necessity for operation is obvious, and should be undertaken as soon as the diagnosis is made.

Advantages of Inguinal Route.

The advantages of the inguinal route operation may be summed up as follows:

1. It provides a certain means of cure.
2. It permits direct view of the essential structures.
3. Abnormal conditions can be recognized and dealt with.
4. Resection can be undertaken through the original incision.
5. It is neither difficult nor complicated.

OBSERVATIONS ON THE OPERATIVE TREATMENT OF TUBERCULOSIS OF THE LARYNX.

By DR. THOMAS RÜEDI,

LARYNGOLOGIST, DAVOS, SWITZERLAND.

DURING a period of six years I have treated at Davos 575 cases of laryngeal tuberculosis. On these 575 cases 1,548 operations were performed. In 61 cases curetting only was performed, in 168 both curetting and cauterization, and in the remaining 1,319 the electro-cautery alone was employed. In every instance the laryngeal tuberculosis accompanied pulmonary tuberculosis, it being usually a case of stationary pulmonary tuberculosis (of the third degree, according to Turban-Gerhardt's classification) and of tuberculous laryngitis brought by the patient with him to Davos. In 39 cases the pulmonary tuberculosis was clinically demonstrable by the lung specialist as unilateral only (in 25 cases on the right and in 14 on the left). Of the 25 right-sided patients it was found that in 5 cases only the right side of the larynx, and in 4 cases only the left was affected. Of the 14 cases whose pulmonary tuberculosis was left-sided it was found that in 2 cases only the right and in one case only the left side of the larynx was affected. This agrees with the observations of Besold and Gidionsen and others, and argues against homolaterality of pulmonary and laryngeal tuberculosis.*

In 259 cases the laryngitis was not serious—that is to say, it was limited to a simple and circumscribed focus, and was in a stationary condition; in 265 cases it was of medium gravity—that is to say, there were multiple but limited foci without tendency to rapid progression; in 59 cases it was grave—that is to say, with diffuse foci and rapid progression and caseation.

The tuberculous lesions were situated most usually on the vocal cords, less frequently on the arytenoids, and less often still on the epiglottis. The proportion of closed infiltrations to that of open lesions (ulcerated) was 1 to 5.

The patients were submitted to operation for their laryngeal lesions only after their general condition had been improved by fairly long fresh-air treatment. In the case of a certain number of them conservative treatment by means of painting with caustics or anaesthetics or by heliotherapy was employed beforehand. It was only after the non-success of these measures that resort was had to operation. This plan presented the advantage that the operative therapy was utilized only under good conditions and on tuberculous patients whose processes had become, so to speak, stationary.

The operation was now and then followed by a recrudescence of the pulmonary tuberculosis, especially in cases in which activity of the latter could be established beforehand. Accordingly the conclusion reached was that operation for tuberculous laryngitis should be undertaken only in the case of patients in whom the pulmonary tuberculosis is stationary, whose general condition is good, and who are free from fever, exception being made in the case of patients suffering from obstinate cough or from dysphagia. Several patients, however, were operated upon notwithstanding fever and progressive pulmonary tuberculosis, and that, too, with a rather favourable result not only on the laryngeal but also on the pulmonary lesion.

The operative method which gave the best results was that of electro-cauterization according to the method of Professors Mermod and Siebenmann with its abundantly destructive action. The sharp-pointed cautery, used deeply, was employed in cases of diffuse closed infiltration (oedematous perichondritis), but its moderate effect is far from being equal to that of the Mermod-Siebenmann method. Experience teaches how far the destructive action of cauterization may be carried at a sitting. Even after very thorough cauterization no serious oedema was observed. Tracheotomy for post-operation stenosis was never necessary. Haemorrhage following the operation was observed twice, in one of the cases ten days afterwards. On the other hand, it must be emphasized that frequently the laryngeal operation had to be postponed on account of haemorrhage which set in beforehand.

The ability to apply the cautery in all the nooks and crannies, of destroying the tuberculous foci deeply and thoroughly, and of obtaining on the burn a thick slough as protection against secondary infections, is an enormous advantage over the curette method. The latter shows itself superior to cauterization only in cases of resection and amputation.

In summarizing the post-operation results, 154 cases, which could be traced only for a month at most, must be eliminated as doubtful, as also 34 very serious cases which were operated upon solely to relieve their sufferings.

The 387 cases whose progress could be followed, may be classified as follows:

Laryngeal Tuberculosis.	Not Improved, or Little Improved.	Moderately Improved.	On the Way to Cure.	Cured.*
First stage	8	46	37	89
Second stage	42	89	13	48
Third stage	13	0	0	2
Total	63	135	50	139

* That is, three months to five years after operation.

Often enough the affection, in particular tuberculosis of the vocal cords, could be said to be cured four to five weeks after operation, but only those cases have been counted as cured in which clean cicatrization devoid of all reaction was to be observed three months after the last interference. Those in whom the last interference took place less than

three months before writing, have been classed under the heading "on the way to cure." A complete cure could be thus established 139 times, that is, in 35.9 per cent. of all the cases observed and followed. Several of them have settled permanently at Davos.

To summarize, for the cases traced, cure of laryngeal tuberculosis was obtained 139 times, as follows:

First stage:

In 180 cases, cure was obtained 89 times=49.4 per cent.

Second stage:

In 192 cases, cure was obtained 48 times=25.0 per cent.

Third stage:

In 15 cases, cure was obtained in 2 cases=13.3 per cent.

Comparison of the percentages in the first and second classes illustrates the importance of operative therapy in the stage of simple circumscribed tuberculosis of the larynx. The length of time after the last interference that the cure could be verified was as follows:

3 to 6 months in	59 cases
6 months to 1 year in	26 "
1 to 2 years in	26 "
2 to 3 years in	12 "
3 to 4 years in	10 "
4 to 5 years in	5 "
More than 5 years in	1 case

In these cases the lesions were 81 times of the vocal cords and 53 times of the interarytenoid region; 55 cases showed tuberculous lesions of the cords on one or both sides, and 20 cases simple circumscribed tuberculosis of the arytenoids. Thus, in 105 cases of isolated lesions of the cords, followed and checked, cure ensued in 52 per cent., and in 74 cases of isolated circumscribed lesions of the interarytenoid region in 27 per cent. The percentage of cures obtained by interference is thus in the cases of isolated lesions of the cords almost double that in the cases of isolated interarytenoid lesions. The latter are characterized by a strong tendency to relapse, not only after curetting but also after treatment by very thorough electro-cauterization.

Conclusions.

These results of my endolaryngeal operations for tuberculosis of the larynx lead me to the following conclusions:

1. Tuberculosis of the larynx is curable.
2. Spontaneous improvement as well as cure can be repeatedly observed in Davos under the influence of general treatment, but it must be denied that improvement in the pulmonary condition has a favourable effect on the laryngeal lesion. In several cases the fresh air cure, as also the usual local conservative treatment, in particular heliotherapy, were insufficient or ineffectual, notwithstanding improvement in the pulmonary condition. A considerable proportion of these cases could be cured by operation.
3. Operative treatment of tuberculosis of the larynx should be undertaken only in cases in which there is no fever and the pulmonary condition is stationary, exception being made for cases in which urgent symptoms demand interference.
4. The best method is electro-cauterization (Mermod-Siebenmann's method) with its broad and deeply destructive radical effect. Only in cases of tuberculosis of the epiglottis did curetting prove itself better than resection or amputation.
5. Operative treatment resulted in cure in a little more than a third of the number of cases followed and checked. The best results (52 per cent. of cures) were obtained in the electro-cauterization of the cords.
6. Operative treatment exercised in several cases a very favourable influence on the lungs and on the general condition.
7. The contention that a stay at a high altitude is contra-indicated for tuberculosis of the larynx is wrong. Even in cases of pulmonary tuberculosis complicated by laryngeal tuberculosis a stay in the high mountains is indicated in accordance with modern experience of both. When the altitude has a favourable influence on the pulmonary, without being able to ameliorate the laryngeal lesions, one must employ local treatment by electro-cauterization according to Mermod-Siebenmann's method which can bring about a particularly rapid cure under the favourable influence which the climate of the high mountains exerts on the vitality of the organism.

NOTE ON THE BACTERIOLOGICAL QUALITIES OF ROOF-COLLECTED SAMPLES OF RAIN WATER.

By SIR ALEXANDER HOUSTON, K.B.E., M.B., D.Sc.

As a result of a conference of delegates of municipal authorities and others, held in connexion with the Smoke Abatement Exhibition in 1912, a committee was formed for the investigation of atmospheric pollution. The committee's first report was published in 1916, and together with the succeeding reports are full of valuable information bearing directly, or indirectly, on the quality of rain water.

The writer, in his recent book on *Rural Water Supplies and their Purification*,* dealt fairly exhaustively with rain water as a source of water supply.

From a health point of view, rain water has the advantage that it is practically free from the possibility of human excremental pollution. That is, of course, excluding those cases where the rain water is stored in pervious underground tanks, unfavourably situated as regards drains, cesspools, and other sources of dangerous contamination. On the other hand, roof-collected rain water may be contaminated by the "droppings" of birds, the excreta of rats, mice, and other lower animals, and a multitude of flies, insects, etc.

Speaking generally, there is nothing in the chemical composition of rain water to preclude its use for drinking purposes apart from its physical qualities and taste.

As regards taste, even pure rain water is apt to have a flat, insipid taste, and impure samples are so objectionable as almost to create feelings of nausea.

The physical appearances of rain water are often most uninviting. It is frequently highly coloured, and contains much suspended matter.

The writer in the aforementioned book dealt rather fully with the physical and chemical qualities of rain water and the means to be adopted to bring about its purification. He now seeks to supplement this information with a brief account of the results of some bacteriological investigations.

In common with many others, the writer sought during the war to economize in every way in the use of water and so reduce the consumption of coal.

One obvious way of attaining this object was to collect the rain water and use it for garden watering purposes instead of relying solely on the Metropolitan Water Supply.

Accordingly, a small tank (21 in. by 17 in. by 16 in.) was connected with one of the rainfall pipes leading from the gutters so as to collect a proportion of the rain falling on the total roof space.

The writer's house is situated just within the four mile radius, and it occurred to him to test the bacteriological quality of the water, as representing town rain water, from time to time, the samples being usually collected during, or just after, heavy rainfall.

As there is no "rain water separator," as no precautions were taken to clean out the gutters, and as birds (sparrows, thrushes, blackbirds, etc.) are numerous in the neighbourhood owing to the close proximity of a large open area of about four acres of grass bordered by trees, there seemed some reason to suppose that the conditions were, at all events, not conducive to extreme purity.

The bacteriological results were remarkably and uniformly good. The number of bacteria (agar at 37° C.) was very small (1.8 per c.c.m.), and in bile-salt agar no microbes grew, even when 10 c.c.m. were used for cultural purposes. No typical *B. coli* were present in 100 c.c.m. of any of the nineteen samples collected between July 11th, 1918, and April 29th, 1919.

The writer is far from suggesting that these results are typical of roof-collected rain water, but they do seem to show that rain collected in this way need not necessarily be impure as judged by the ordinary bacteriological tests. The investigations are still in progress, and the writer would be glad to receive and examine in his spare time a reasonable number of samples, collected from other sources, sent by any of his readers who are interested in the subject. Sterile bottles should, of course, be used

for this purpose, holding at least 150 c.c.m., and the samples should preferably be sent "iced."

In the reviews on his book (*Rural Water Supplies and their Purification*) the writer noted that some of the "reviewers" were rather led to conclude that the author advocated individual as opposed to concerted effort in purifying water. This, of course, is far from being the case, the writer being a strong supporter of publicly controlled water supplies. The book was written with the avowed object of trying to help those who had the misfortune to be so situated that no public source of water supply was available. Under these conditions the only wise thing to do is to make the best use of existing circumstances. It is true that in these cases it is much more common to utilize well, spring, or brook water for domestic purposes, but where these sources of water supply are liable to be polluted, or otherwise objectionable, the use of rain water is not unsound on hygienic grounds. The best means of rendering rain water palatable are described in detail in the writer's book.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DISAPPOINTMENTS AFTER GASTRO- ENTEROSTOMY.

THE following case occurring in my practice is of some interest in view of the recent correspondence on this subject:

L. R., a young girl, was operated on in 1914 for gastric ulcer, the operation being gastro-jejunostomy. Pain and vomiting returned after an interval of a few weeks, in consequence of which a second operation was undertaken in 1915 by another surgeon; this consisted of an entero-anastomosis of duodenum and jejunum. The vomiting again returned after another short interval, and has persisted ever since.

In August, 1918, the abdominal scar, which until then had been quite healthy, appeared to give way in the middle line, and gradually formed a wound the size of a shilling, and from which blood-stained fluid escaped. The wound was packed daily with cyanide gauze, 2 ft. of 1 in. gauze being easily inserted. That the wound communicated with the intestine was proved by the fact that a piece of packing gauze 2 ft. in length escaped into the wound and was passed per rectum, and also that partly digested food passed from the wound soon after the patient had taken it.

The fistula has now apparently closed, and the patient is again suffering from the same acute pain and vomiting after even liquid food.

The vomiting in this case was at first attributed to reflex conditions, but it now seems to be proved to be due to physical obstruction following the gastro-jejunostomy.

I believe the condition to be sufficiently rare to justify publication.

Bedworth.

LIONEL E. ORTON.

EFFICIENT TREATMENT OF CHRONIC RUNNING EAR.

IN my opinion the comments of Dr. William Wilson in the JOURNAL of May 24th, p. 642, are open to severe criticism.

Dr. Wilson says he has based his experience on three and a half years as an aural surgeon in the army. I venture to suggest that that experience is not sufficient to form an opinion of real value in this important branch of surgery, on the following grounds:

(a) Many of the cases, I take it, he quotes are caused by rupture of the membrana tympani by shell fire or by other cause, and infection caused by sand or other dirt.

(b) It is not to be expected that many of his cases were tuberculous.

I should like to take Dr. Wilson's comments as by his own paragraphs.

1. This has been to my knowledge the usual practice for many years past.

2. This has also been the orthodox practice except that the treatment in some cases may be in the out-patient room.

3. This certainly has been the practice of most aural surgeons in recently infected cases, and I take it that most of Dr. Wilson's cases were so.

4. Again this has been the usual hospital practice for years past.

* *Rural Water Supplies and their Purification*. Messrs. John Bale, Sons and Danielsson, Ltd. 1918.

It is common knowledge that after treatment such as described by Dr. Wilson the discharge grows less and less and until it may cease altogether—the perforation healing over. But does Dr. Wilson mean to suggest that the case is cured? if so, I differ from him—it means that the acuteness has passed away exactly in the same way that an acute attack of appendicitis may pass off with rest and diet, but only to awaken again under the smallest provocation. Can Dr. Wilson say what is going on in the mastoid antrum away from his eyesight, also in the attic and tympanum? Dr. Wilson appears to have forgotten for the moment the future possibility of extradural abscess, lateral sinus thrombosis, lepto-meningitis, cerebral abscess, cerebellar abscess, etc. The question may be asked, How far is an aural surgeon justified in placing so lightly aside such possible and even probable consequences of non-operative treatment?

I do not, however, mean to convey that I would advocate a radical mastoid operation in all cases of ear discharge, but Dr. Wilson, to my mind, takes a very conservative and one-sided view of his suggested palliative treatment. I hold that it is the duty of an aural surgeon to explain such possible future consequences as named above fairly to the patient so that he may be able to decide for himself as to operation or not.

It does not appear, then, to me that Dr. Wilson's sweeping statements can be called logical.

Southsea, Hants.

ARTHUR M. BARFORD, F.R.C.S.

presentation was vertex, low down in the pelvis, and movable; the os uteri was represented by a small dimple immediately beneath the symphysis pubis. The urine was acid, specific gravity 1022, and contained albumin.

Captain Clark diagnosed abdominal pregnancy, and the abdomen was opened. The uterus was found to be enlarged up to the size of a five months' pregnancy; the Fallopian tubes were intact. A full-time dead fetus was found to be lying in a bag of membranes which was attached to the left side of the broad ligament. The fetus was extracted, the broad ligament clamped, and the mass removed. The placenta was attached partly to the pelvic colon and partly to the broad ligament, and in separating it a considerable amount of haemorrhage occurred. The patient's pulse became very feeble, and the abdomen was closed as quickly as possible, the lower third of the wound being kept open by three long gauze drains. An intravenous injection of two pints of saline was given when the patient was put back to bed.

After operation the patient was incontinent, and did not retain glucose injections by bowel. On September 20th she had an attack of vomiting, with distension of the abdomen. The gauze drains were removed on September 21st, and a long piece of gauze soaked in flavine inserted behind the uterus. There was a small quantity of lochia. On September 25th the temperature rose to 101.4°. On September 27th a faecal fistula developed, and a piece of membrane presented through the wound. An attack of phlebitis in the left leg, which began on October 10th, had completely cleared up on October 28th.

When the patient was discharged from hospital quite well, on February 3rd, 1919, the wound was completely healed.

Sheffield.

CAROLINE V. LOWE, M.B.

TETANUS IN CIVIL PRACTICE: TREATMENT BY SERUM: RECOVERY.

A FARMER, aged 39, was seen on February 9th, 1919, complaining of a small nail puncture under the left hallux. This was treated by antiseptic fomentations; by February 12th there was slight suppuration, but in two days this had ceased, and the wound had healed completely. Nothing could be seen, there was no pain, and the patient could walk comfortably.

On February 28th he was seen again, complaining of "sore throat"; there was no marked difficulty in swallowing.

No change had taken place on March 3rd, but from March 4th he began to get worse, and by March 6th there was marked stiffness of the jaws; the mouth could not be opened, mastication was impossible; the tongue could not be protruded; slight risus sardonicus was present. No local signs could be discovered in the mouth. The teeth were very carious. A diagnosis of tetanus was made, and a large dose of chloral and bromide administered.

On March 7th there was stiffness and pain in the muscles of the back and pain on breathing. At 10 a.m. chloroform was administered and by lumbar puncture 15,000 units of antitetanic serum injected. At 10 p.m. gr. xij , chloral gr. xij , potassium bromide gr. xxx , were administered and continued nightly.

Daily injections of 8,000 units of serum were given subcutaneously. By March 12th distinct improvement had occurred. The stiffness of the back had passed off, and the mouth could be opened and the tongue protruded, although slight rigidity of the face was still present.

A final injection of 8,000 units was given on March 14th, and the dose of chloral given at night diminished. Rapid improvement and an uninterrupted recovery followed.

Points of interest in the case are the length of the incubation period (three weeks), the slight symptoms, the absence of definite well marked spasms, and the insignificance of the wound.

Nailsea, near Bristol.

R. F. WHITE, M.B., Ch.B.

ABDOMINAL PREGNANCY.

On September 18th, 1918, a woman aged 35 was admitted to the maternity ward of Sheffield Union Hospital. She stated that she had had four normal labours previously, that her last period had occurred in November, and that she had had "labour pains" for a week before admission.

The patient looked ill and anxious, and complained of a foul taste in her mouth. The tongue was dry and coated. The temperature was 99.6°. The abdomen, which was enlarged up to the ensiform cartilage, felt very tense, and was extremely tender; fetal parts were very difficult to make out. There was a soft elastic swelling above the pubes. The uterine souffle was heard on the left side, but the fetal heart sounds were not heard. The

A CASE OF DIAPHRAGMATIC HERNIA.

The following notes on a case of diaphragmatic hernia, which recently came into my wards at Monte Video Hospital, Weymouth, may be of sufficient interest to warrant publication:

History.—Sgt. F. was admitted on the evening of December 13th, 1918, with signs of intestinal obstruction, persistent vomiting, and absolute constipation for two days. He had been wounded by a bullet from an automatic pistol on April 15th, 1917. He was in bed for three weeks. The wound healed perfectly. In September, 1917, he was sent back to France. He had occasional attacks of vomiting before, but after the first long march in France he had an attack of vomiting which recurred every day for nine months, usually in the evening. He lost much weight and was much troubled by flatulence and severe pain in the epigastrium. He reported sick several times, but was always sent back to duty, and was accused of "swinging the lead." However, by October, 1918, his condition had become so bad that he could no longer carry on, and he was sent back to England. A month before admission he had an attack of severe pain, vomiting, and constipation, which kept him in bed for three weeks.

Condition on Admission.—The temperature was 99° F., pulse rate 80. Did not look very ill. Abdomen very flat and empty, moved on respiration. There was a small wound of entry of bullet over eighth left rib, close to its junction with the cartilage, and an exit wound in the left loin 2 in. from the spine. The left side of thorax moved less than the right. Nothing abnormal could be felt in abdomen. The area of resonance of the stomach extended very high, above the nipple in the axillary line. Breath sounds were very faint over the lower part of left chest, and were replaced by gurglings and borborygmi which had a distinctly amphoric note. He vomited occasionally, bile-stained or "coffee-ground" material, not stercoraceous. His bowels were completely constipated; he passed no flatus after any of several enemata.

Operation.—On December 14th, having made a provisional diagnosis of diaphragmatic hernia, I opened his abdomen by a left para-median incision just below the costal cartilages. The stomach could not be seen at all, and very little omentum. The transverse colon was drawn up very high. On passing the fingers up along the diaphragm they immediately slipped through a hole and came into contact with the pericardium; the hole readily admitted two fingers. The abdominal wound was temporarily closed by large through-and-through mattress sutures, while I resected portions of the seventh and eighth ribs, including part of their cartilages. One of the pieces removed had been fractured by the bullet. This incision gave very good access to the thorax. I was able to insert my hand high up into the chest, and pass it over the top of the distended stomach, which occupied practically the whole of the left thorax, except that part taken up by the pericardium. The lung was collapsed and very small, the greater part of the omentum was also in the pleural cavity. There were no adhesions and I was able to squeeze all the gas and fluid gently out of the distended stomach, and finally to return it to the abdominal cavity, together with the omentum, through the rent in the diaphragm, which was quite two inches long. In this I was aided by Captain Juett, who had reopened the abdominal wound and helped to pull the stomach and omentum gently back to their proper positions. There were no signs of strangulation or constriction, but the stomach was distended and appeared thickened. A few adhesions about the rent in the diaphragm extending to the omentum were ligatured and

divided, and a sponge was pushed through the diaphragm to keep the stomach and omentum out of the way. The hole in the diaphragm was then repaired by suturing the edges of the rent with catgut; over this was placed a layer of Lembert's sutures of catgut, and then three stout linen thread sutures. The abdominal and thoracic wounds were then closed in layers without drainage. Closure of the wound in the diaphragm was a little awkward owing to violent respiratory movements. Closure of the thorax gave rise to immediate improvement in the patient's condition, about which Captain Black, who was giving the anaesthetic, was getting somewhat uneasy.

After-History.—He vomited once when coming out of the anaesthetic. The pulse was rapid, 120 to 130, for the first twenty-four hours; the temperature went to 100° the day after operation. His bowels acted well after an enema on the 16th, and he passed flatus; taking food well. The note of December 18th reads, "Seems perfectly comfortable; respirations 20, pulse 72, temperature normal." On the evening of December 19th the temperature went to 100°. Next day the chest was aspirated, and 10 oz. of clear fluid withdrawn. On December 30th he was worried by tinkling sounds in his chest; these were synchronous with the apex beat, and were probably caused by the heart beating in the fluid. The chest was explored next day, and very little fluid found. About this time, also, he had a pericardial rub. But he looked very well throughout, and all his symptoms appeared to be due, directly or indirectly, to the collapsed lung. He has now been discharged for some months, and is to all outward appearances perfectly well. But his lung on the left side has not fully expanded. Probably after nearly two years of compression it is too much to hope that it ever will.

I am unable here to find any recent literature on diaphragmatic hernia. But before the war I believe very few cases of successful operation in long-standing cases had been recorded. Apart from partial hernia of omentum following recent wounds involving the diaphragm in France, I have only seen one case. That was in 1901 in Sydney, where an old-standing case following a wound of the diaphragm was diagnosed and operated upon by Mr. Clubbe, whose house-surgeon I was. I do not think he opened the thorax. The adhesions were very dense. He was unable fully to reduce the hernia, and the patient died. In my case I am sure I could not have reduced the hernia without opening the thorax, and I do not think one could repair the rent in the diaphragm from below. At all events it would be very difficult.

J. A. B. DARVALL BARTON,
Major A.A.M.C.

Reports of Societies.

THE GENESIS OF DELUSIONS.

At a meeting of the Medico-Psychological Association on May 20th, when Lieut. Colonel JOHN KEAY of Aberdeen was in the chair, Dr. C. F. F. McDOWALL (Ticehurst House, Sussex) read clinical notes on the genesis of delusions. Social and political tendencies, he said, were the outcome of an analysis, more or less critical, and believed by the individual to be impartial. A comparatively insignificant incident might attract attention and be the beginning of a prolonged mental conflict. The reasoning was not always logical nor the argument conclusive to people of other opinions, but the conclusion arrived at was final. Probably the presence of a hereditary taint was the most important factor in the preparedness of anyone to become mentally disturbed or actually insane. Delusions and hallucinations did not arise accidentally; they had a definite basis in the personal experience of the sufferer. It was the duty of the medical man to analyse the processes by which the abnormality had arisen, and to work back to what might be termed the "taking-off point." In men the underlying cause was often very quickly reached, but women were more reticent. The means at the disposal of the alienist was mental analysis—that is, an examination which would not only investigate the conscious problems of the patient but also bring to light the factors of subconscious origin. The functional condition was much more easily treated than the state in which the delusions or the hallucinations had begun to assert themselves. The mere elucidation of the cause was not enough to effect a cure; the patient should be taught to follow, in their logical sequence, all the ideas he had misinterpreted and misunderstood. Hallucinations did not occur in states of depression at an early stage of the malady; delusions developed earlier. He related cases showing a striking improvement and good nights imme-

diately following the unburdening of the primal incident in the mental condition.

Sir GEORGE SAVAGE said that he had long ago applied the term "morbid mental growth" to the condition under consideration. It was now fully recognized that most delusions had a definite concrete starting point. Some morbid mental growths were merely inconvenient—an obsession which did not interfere with the prime work of life, an innocent morbid mental growth which destroyed nothing. A second form was that which modified utility, but still did not destroy; but the third and more severe kind invaded and destroyed faculties, as, for example, when a person had delusions of persecution.

Dr. HUBERT BOND thought that Dr. McDowall's paper offered a good deal of encouragement. The difficulty had been to determine the proper topic about which to talk to the patient, but there seemed now a prospect of instilling reason into the most, apparently, hopeless cases.

Dr. R. HUNTER STEEN emphasized, by the narration of a striking case, the fact that delusions were often in the form of wish-fulfillments.

Dr. CARSWELL (Glasgow), while agreeing that exploration along the lines indicated could not but be good, thought there would be a return to some of the old views. The morbid idea of the lunatic was not a fresh creation, but an undue prominence and an exaggerated form of a past experience, and to unearth the path by which the present mental state came about must be very helpful towards a cure. All must have felt the importance of persistently and quietly trying to explain to the patient the origin of his morbid ideas.

Dr. J. G. SOUTAR did not regard the method pursued by the author as psycho-analysis, but rather a simple investigation into the patient's life-history, which showed not only the genesis of the delusion, but also why it took that particular form. What was really needed was to know why a mind, previously sound, became, either suddenly or gradually, one suitable for the growth of hallucinations and delusions. It was this early stage at which recognition of the condition was so important. He thought many delusions were reflexes of the patient's past failures, which only came into dominance later when he was in a less robust state. The re-education of the patient was of the greatest possible value.

Captain PRIDEAUX thought the treatment employed by Dr. McDowall consisted in the use of emotional processes. The delusion often consisted in a rearrangement of the patient's emotional life, and emotional processes should therefore enter into the treatment.

Dr. McDOWALL briefly replied.

Rebuelus.

CEREBRO-SPINAL FEVER.

THE excellent monograph on *Cerebro-spinal Fever*¹ by Drs. WORSTER-DROUGHT and A. M. KENNEDY contains the experience of a clinician and a well recognized pathologist engaged for more than three years in the care and investigation of the cases of cerebro-spinal fever at the Herbert Military Hospital, Woolwich. It is the outcome of patient and honest work, some of which has previously been published in papers contributed to this and other medical journals, though the bulk of it now comes before the profession for the first time in this attractive volume. In order to give as broad a survey as possible contemporary literature has been wisely utilized and the authors' personal results compared with those of other workers.

After some general observations on the geographical distribution, age, sex, and race incidence, the bacteriology of the meningococcus and its allied micro-organisms is considered, and full justice is paid to Mervyn Gordon's work; among 180 strains of meningococci tested by the type serums, 50 corresponded to his Type I, 97 to Type II, 22 to Type III, and 11 to Type IV, and the authors' results uniformly confirmed the statement that a case of the disease yields one type only of the meningococcus, and that the meningococcus recovered from the patient's

¹ *Cerebro-spinal Fever. The Etiology, Symptomatology, Diagnosis and Treatment of Epidemic Cerebro-spinal Meningitis.* By C. Worster-Drought, B.A., M.B., Temporary Captain R.A.M.C., and Alex. Miles Kennedy, M.D., late Captain R.A.M.C. London: A. and C. Black, Ltd. 1919. (Demy 8vo, pp. xii + 514; 56 figures, 8 plates. 30s. net.)

throat at the onset is always of the same type as that obtained from the cerebro-spinal fluid. Printing nowadays is not a rapid process, and no doubt this work was in the press before Gordon and Hine's report on the treatment of cases by monotypical serum was published earlier in the year. In the discussion on the predisposing causes it is pointed out that climate *per se* is not responsible for the presence of the disease in a particular country, as it occurs in almost every part of the globe, and that although extreme cold is not a direct cause of outbreaks, sudden variations in temperature appear to exert an important influence, as does a diminished rainfall. Overcrowding receives due attention, but J. A. Glover's conclusions might well have been included. The authors' experience agrees with the general consensus of opinion that known carriers seldom contract the disease, for among 140 carriers one only had symptoms even suggesting an abortive attack, and that the incubation period is short. As set forth in one of their preliminary papers, they show reason for the view that the meningococcus first passes into the blood, and in a few hours is carried to the meninges without definitely infecting the blood in the sense of causing a true septicaemia. The account of the symptoms deals first with those at the onset and then with those arising subsequently, and is illustrated by figures, especially of herpes. According to the course taken by the disease, six acute types, two special types (originally acute or subacute), two subacute, and two chronic types are described. The chapter on the complications is full of interesting matter, and attention is called to nephritis as a direct complication, care being taken, as has not always been done, to distinguish between nephritis antedating and that appearing after the onset of the disease. The sections on blood pressure and the cytology of the blood are enriched by charts and leucocyte counts from patients under the authors' care.

Lastly, the important chapter on treatment is written out of the fullness of personal experience, and, like the work as a whole, will be of great value to all who have to deal with this disease.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

If at the end of five years an author finds it advisable to rewrite whole sections of his book, it may fairly be assumed that he has found reason to be dissatisfied either with the matter, or the manner of expression, of his previous thoughts.² Dr. CLIVE RIVIERE's book on the *Early Diagnosis of Tubercle* has been widely read. His analysis of the various diagnostic methods which may be employed for the detection of the first signs of tubercle of the lungs is, in this new edition, even more full than in the first. He lays great stress upon the indications afforded by percussion. Impairment of resonance is not equally appreciated by human ears. Of all diagnostic methods that of percussion is the most variable in value, depending as it does not only on the skill of the percussor, but also on his perception of the sound produced. Especial attention is called in the new edition to the so-called Krönig's sign, or narrowing of the normal isthmus of resonance above the clavicles. This may not only be indicative of local change due to tubercle but may point to the commencement of disease from the hilus of the lung, especially if associated with bands of presterenal and prevertebral dullness. This point is fully worked out in relation to disease both in the adult and the child. As in his previous edition, the author collates a very large amount of foreign literature on the subject, giving by far the larger share of such quotation to German writers; the reader must judge for himself of the importance to be attached to their authority.

The study of tuberculin as a means of diagnosis is very fully followed out, but it is hedged about with so many reservations that it cannot be said to have attained additional practical value. Roentgen rays, casting no shadow until a definite amount of density has been attained, do not render much assistance in detecting the earliest forms of local disease, but they are often of importance in revealing concomitant conditions in the chest. The later part of the book is devoted to the subject of tubercle in children. The progress of disease beginning in thoracic glands and

slowly infecting the lung by way of the hilus is carefully traced. In such cases the x rays may supply information of the greatest value.

The student of tuberculosis problems will find Dr. Riviere's book as interesting as heretofore. The practitioner in search of guidance to the elucidation of a difficult case would probably look for a more concise and positive conclusion than is possible to express in a work of this description.

TEXTBOOKS OF SURGERY.

We have had occasion already to commend Mr. RUSSELL HOWARD'S *Practice of Surgery*³ as a most excellent textbook. The stress of war has happily not prevented the issue of a second edition. Except for thorough revision and bringing it up to date in the surgery of war, there are no changes. In the preface we are informed that the revision has had for its object an endeavour to make the text clearer and more comprehensive. Undoubtedly clearness of statement and comprehensiveness of scope are very evident features of this work. It is precisely the best kind of book for the student, and we know that it is greatly used in schools other than that to which the author belongs. The tabular method and varieties of bold type specially loved by the student who remembers his subject by visualizing the very page of his favourite textbook are freely employed. We are glad to note that it is not over-illustrated and that generally the pictures really help the reader to grasp the text, though it must be admitted a few are not convincing. The printing is clear, good-sized type. Proof reading errors are few; the word "or" near the bottom of page 671 has crept in without meaning, and there is a misspelling on page 581.

In the teaching of students it is always difficult to compel them to keep clearly before their minds the great fact that surgery, like every other science, is based on general principles. The earlier biological studies of the student are intended to serve as an introduction to the study of nature and its laws, but it is to be feared that the amount of detail demanded from the student occupies him so much that he loses sight of fundamentals. The difficulty of inculcating principles is said to be very great in the case of the Indian student, as his mind seems often too apt to grasp medicine and surgery very much in the same way as a penny-in-the-slot machine holds its wares. Mr. R. L. SPITTEL recognizes the difficulty in publishing his *Preliminary Course of Surgery*.⁴ He has written the book, he says, with general principles always in view, and while it is "complete in itself," and "almost the entire field of general surgery has been covered, it still remains an introduction primarily for that class of student in India and Ceylon whose limited years of apprenticeship preclude him from the study of larger works." The subject matter is very well arranged, concisely written, and illustrated as fully as necessary. The pictures are almost entirely original, being taken from Mr. Spittel's clinic of Indian patients. The pictures of tropical diseases, such as yaws and leprosy, are interesting showing conditions well known in India but not often seen at home. We are satisfied that this book admirably meets the requirements enumerated by the author, and it can be recommended also to a much wider circle than Mr. Spittel modestly suggests.

MEAT INSPECTION.

IN *Meat Inspection Problems*,⁵ Dr. WILLIAM J. HOWARTH treats his subject in a concise and lucid manner. The book contains five chapters and four appendices, and its scope will be evident from the titles of the chapters, which are: The development of meat inspection; general administrative problems; the tuberculosis problem as affecting cattle; the tuberculosis problem as affecting pigs and imported meat. The basis of the book is formed by the Milroy Lectures delivered by the author in 1917. He

² *The Practice of Surgery*. By Russell Howard, M.S. Lond., F.R.C.S. Eng. Second edition. London: Edward Arnold, 1918. (Med. 8vo, pp. vii+1214; 523 figures, 8 coloured plates. 25s. net.)

³ *A Preliminary Course of Surgery*. By R. L. Spittel, F.R.C.S. Eng., etc. Surgeon to General Hospital, Colombo, Ceylon, and London: Butterworth and Co. 1918. (Demy 8vo, pp. xv+465; 111 figures. Rs 6.6 net.)

⁵ *Meat Inspection Problems*. With special reference to the developments of recent years. By William J. Howarth, M.D., D.P.H. London: Baillière, Tindall, and Cox. 1918. (Demy 8vo, pp. viii+145. 6s. net.)

² *The Early Diagnosis of Tubercle*. By Clive Riviere, M.D., F.R.C.P. Second edition. London: Henry Frowde, and Hodder and Stoughton. 1919. (Cr. 8vo, pp. 314; 35 figures. 10s. 6d. net.)

urges with much cogency that the suggestions of the Royal Commission relating to the disposal of tuberculous carcasses might well be replaced by a more complete set of regulations. This would conduce to uniformity in the various areas and would lessen the friction between inspectors and traders. The carelessness and want of hygienic considerations shown in the handling of meat, especially in its transport by rail and van, are commented upon; but it is said to be difficult to suggest any official action which could be taken at the present time, since no specific regulation is ignored and the negligence arises in what may be regarded as "No man's land" between the abattoir or store and the butcher's shop. It is pointed out that a provision that the food should be handled in a cleanly manner could be incorporated in the regulations for the control of meat inspection.

The book is interesting, and the author shows great skill in marshalling his facts, which are drawn from a wide personal experience and from extensive reading.

NOTES ON BOOKS.

THE 1918 *Bulletin of the Ophthalmological Society of Egypt*⁶ contains accounts of the work done by the society and the papers read to it during the year 1917. In a paper on the ophthalmic progress in Egypt during 1917 it is stated that there were thirteen permanent and four travelling ophthalmic hospitals in the country; over 100,000 patients were seen at these hospitals, and over 81,000 of them attended twelve or more times; about 30,000 operations for trichiasis or entropion were performed, and 19,000 for trachoma. Over 12,000 microscopical examinations were made in cases of conjunctivitis, and in 37 per cent. of the patients the gonococcus was found to be the causative organism, in 21 per cent. the Koch-Weeks bacillus. Over 4,600 patients were found blind in both eyes (that is to say, unable to count fingers at one metre); nearly twice as many were blind in one eye. The cause of the blindness was acute conjunctivitis in three-quarters of the cases, glaucoma in one-tenth. In cases of glaucoma trephining with iridectomy was the operation of election; over 3,400 cases of primary glaucoma were seen.

In a small volume entitled *The Wassermann Test*,⁷ Colonel C. F. CRAIG has given a comprehensive account of the reaction commonly called by that name. Perhaps every pathologist will not agree with the author as to the advantages derived from using filter paper impregnated with amboceptor, but, apart from this, the methods described follow recognized lines. The chapters dealing with the interpretations of the results of the test and the factors which influence it are of general interest. The statement that an alcoholic debauch may temporarily convert a strongly positive serum into a negative one, for example, will come with surprise to many. A knowledge of the limits of the reaction is as important as a knowledge of what it can do, and both these aspects are fully dealt with. Information is also afforded of the effects produced by treatment on the reaction, on the methods of making a provocative injection, and the method and interpretation of the test as applied to the cerebro-spinal fluid. A description is also given of the colloidal gold test. The book is illustrated by numerous diagrams and tables, and gives a clear exposition of the present day knowledge of this branch of pathology.

Professor MORELLI of Pavia has written a full and interesting account of his treatment of gunshot wounds of the lungs by means of the "artificial pneumothorax" method⁸ introduced in 1882 by his teacher Forlanini for the treatment of pulmonary tuberculosis. His statistics show that only 5 out of 110 patients treated by his method died; he gives details of 65 of his cases. The rationale and method of his treatment are fully set out, and his book should be read by all those interested in this difficult and contentious branch of surgical treatment.

⁶ *Ophthalmological Society of Egypt* (founded in December, 1902) *Bulletin* of 1918. Cairo: Paul Barbey. 1918. (Med. 8vo, pp. 188.)

⁷ *The Wassermann Test*. By Chas. F. Craig, A.M., M.D., Lieut.-Colonel Medical Corps, United States Army. Published with the authority of the Surgeon-General of the United States Army. London: H. Kimpton. 1918. (Med. 8vo, pp. 239; 3 coloured plates, 10 half-tone plates, 57 tables. 15s.)

⁸ *La Cura delle Forite Torace-Polmonari: Pneumotorace Artificiale Toracentesi cura dell'Empiema*. By Professor Eugenio Morelli. Bologna: Licinio Cappelli. 1918. (Roy. 8vo, pp. 182; illustrated. Lire 12.)

For all its drab and tarnishing effect, the war has undoubtedly precipitated into writing verse many who would otherwise have died dumb poets. In *Musings of a Medico*⁹ Dr. KENNETH ROGERS breaks silence and offers his readers a selection of pieces in which are enshrined the thoughts suggested to him by many familiar sights or sounds, as well as by incidents connected with the war. His pen shows a happy facility that many might envy, coupled with a gift for combining the novelties of science with older thought that few possess.

DR. HUBLEY R. OWEN has had large experience in teaching the firemen and policemen of Philadelphia the principles and practice of first aid, and has published his lectures in a substantial, clearly printed, fully illustrated volume. While his book, *The Treatment of Emergencies*,¹⁰ is primarily intended for American students of first aid, it may well be commended in this country. The chapters on fractures, bandaging, and transportation are particularly good. In that on fractures no attempt is made to teach any other methods than emergency ones with materials always at hand. The various applications of roller and triangular bandages are clearly figured and described. Very numerous photographs, specially taken in the chief fire stations of Philadelphia, are a most interesting feature of the chapter on "transportation," and appear to be a very complete presentation of life-saving and emergency work. This is essentially a practical book, with the necessity for clear comprehending of principles kept ever before the reader.

*The Great War Brings it Home*¹¹ is a work in which the author endeavours to show the necessity for getting back once more into touch with nature, civilization under modern economic and industrial conditions having now reduced us to a nation classifiable no higher than C3. Life must be simplified, made wilder and harder; and Mr. HARGRAVE, a well known scout master, has worked out a scheme for doing this and enabling us all to live—at times—the outdoor life. We are in sympathy with many of his contentions, and, in spite of all we hear about the dullness of village life, there must be very many dwellers in cities who nurse at heart a preference for the country and for the type of life there advocated by Mr. Hargrave.

⁹ *Musings of a Medico*. By Kenneth Rogers, M.D. London: Erskine Macdonald, Ltd. (Cr. 8vo, pp. 72. 3s. 6d. net.)

¹⁰ *The Treatment of Emergencies*. By Hubley R. Owen, M.D., Surgeon to the Philadelphia General Hospital, etc. Philadelphia and London: W. B. Saunders and Company. (Post 8vo, pp. 350; 249 figures. 8s. 6d. net.)

¹¹ *The Great War Brings it Home*. By John Hargrave (White Fox). London: Constable and Co., Ltd. (Fcap. 4to, pp. xvi+367; illustrated. 10s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

Tensor Apparatus for the Forearm.

MR. J. IRWIN PALMER writes: A simple and effective apparatus to assist in the restoration of supination and pronation in wounded or stiffened joints of the forearm is now in use at the Special Military Surgical Hospital, Tooting. This instrument I have called a tensor, whereby a continuous pull may be kept up for any required period; it consists of a hook-shaped plate to fit over and partially enclose the ulnar side of the hand for supination, the plate being modified to embrace the radial aspect for pronation. A strap, twenty-four inches in length, is attached; the



central portion is of strong rubber webbing, and the proximal end is fastened to a buckle secured over the inner or outer condyle with a band of adhesive plaster. The tensor is applied by enclosing the ulnar or radial border of the hand—the former for supination and the latter for pronation—in the metal grip, and pulling the band round the hand to below the pisiform bone, across the dorsal aspect of the arm to the inner condyle, putting on the strain desired, and fastening to the buckle. The spiral is reversed for pronation. A continuous and not uncomfortable pull is attained, and the use of the hand is scarcely impeded. With a modification it is useful in flat-foot or where a valgus or varus deformity requires correction. In torticollis with a cap fitted round the forehead it is effective, as it is in many conditions where a continuous opposing strain is desired. My designs for these appliances have been most ingeniously carried out by Messrs. Allen and Hanburys, of Wigmore Street, W.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

As announced a few weeks ago, Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the members of the Association, and subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is prepared to receive subscriptions of one guinea or less.

The following is a further instalment of the list of subscribers; other subscriptions, received this week, will be acknowledged in an early issue.

Captain I. Allam, R.A.M.C. (London)
 Dr. E. Baines (Whitby)
 Dr. Andrew Balfour (London)
 Mr. Norman G. Bennett (London)
 Dr. C. Biddle (Merthyr Tydfil)
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 Dr. Alfred Byers (Wilmslow)
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 Dr. C. B. Clarke (Cambridge)
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 Dr. Frank Mayo (Leeds)
 Dr. C. W. Paget Moffatt (Bolton)
 Mr. Isabella Morison (Edinburgh)
 Dr. Lancelot Newton (Huntingdon)
 Dr. S. Otabe (Benenden)
 Dr. W. M. Palmer (Linton, Cambs)
 Dr. R. A. Parkhill (Burton-on-Trent)
 Dr. S. J. Parkhill (Burton-on-Trent)
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 Dr. J. W. Russell (Birmingham)
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 Dr. C. T. Scott (Market Harborough)
 Dr. W. W. Shrubshall (Brighton)
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Dr. James Sommerville (Abernethy)
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 Surgeon General J. O'B. Williams, R.N. (Ottery St. Mary)
 Dr. A. E. Wilson (Sydenham)
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 Surgeon Commander A. Roalcombe (Devonport)
 Dr. D. Yellowlees (Kilmun)

CORRECTION.—In the list of subscribers given in our issue of June 7th the name of Dr. Victoria E. M. Bennett (London) was incorrectly printed.

THE INDIAN MEDICAL SERVICE.

LONDON DINNER.

THE dinner which the officers of the Indian Medical Service have been accustomed to hold every year in London was interrupted during the war. The custom was resumed on June 11th, when Colonel Sir P. J. FREYER, K.C.B., I.M.S. (ret.), was in the chair. The guests were the Right Hon. E. S. Montagu, M.P., Principal Secretary of State for India; Sir Norman Moore, Bt., President of the Royal College of Physicians; Lieut.-General Sir H. V. Cox, K.C.B., Military Secretary, India Office; Dr. James Neal, Deputy Medical Secretary, British Medical Association; Mr. Austin Low; the Editor of the BRITISH MEDICAL JOURNAL, and a representative of the *Lancet*.

The Chairman.

Sir PETER FREYER, after giving the toast of the King, proposed that of the Indian Medical Service. Though many years, he said, had elapsed since his retirement he retained his affection for the Service, and was proud shortly after the outbreak of war to be appointed consulting surgeon to the Indian hospitals at Brighton, where he was again enabled to work with his brother officers for the benefit of wounded sepoys. No episode in the history of the I.M.S. reflected greater credit upon it than the satisfactory way in which these hospitals were conducted and the devotion to duty displayed by the medical officers. His pleasure in presiding at the dinner was enhanced by the fact that the chief guest was the Secretary of State for India; never in the history of the annual dinners had there been a guest more welcome and more honoured. Since his advent to power Mr. Montagu had displayed a friendly interest in the Indian Medical Service and had approached the consideration of its grievances with sympathy. He had already redressed some of the most glaring, and had promised to do much more. Mr. Montagu was a man of courage and determination in pushing through reforms, and if he carried into effect those improvements in the Service adumbrated in his public speeches—as no doubt he would—the Indian Medical Service would be replaced in the proud position it formerly held—that of the most popular medical service under the Crown. From that position in recent years it had sadly fallen; in the Service, and in the medical schools and universities which prepared candidates for the medical service of the Crown, a spirit of pessimism had prevailed. The limit of the endurance and patience of the Service and of the medical profession had been reached, but since Mr. Montagu took the matter in hand pessimism had given way to optimism. The work the I.M.S. had done in and for India, since the days of Gabriel Boughton (1638), had been inestimable. Through its influence hospitals had been gradually developed in India, so that at the present time hundreds of large hospitals and thousands of subsidiary hospitals were scattered over the length and breadth of the land. In these hospitals tens of thousands of important surgical operations were performed, so that it was no exaggeration to say that in many of them there were officers of the Indian Medical Service performing annually single-handed more surgical operations than were performed by the whole staff in many of the great London hospitals. During the last

seventy-five years, concurrently with the spread of hospitals, medical schools and colleges had been established through the enthusiasm of officers of the Indian Medical Service, from whose ranks the professorial staffs had been mainly drawn. In these schools and colleges thousands of Indian medical men had been educated, becoming keen, well qualified practical physicians and surgeons, who competed with their former teachers, and the Indian Medical Service generally, for that private practice which was formerly one of the greatest attractions of the Indian Medical Service. Whatever fate the future held in store for that Service, he personally believed it would flourish while the British Raj existed, for it was the system most economical, most efficient, and most suited to the requirements of India, both from a civil and a military point of view. In conclusion he gave the toast of "The Indian Medical Service," coupling with it the name of Mr. Montagu, who, though the Service had not the honour of numbering him among its members, was yet to be regarded as the physician sent to heal its infirmities.

The Secretary of State.

MR. MONTAGU, in the course of a sympathetic reply, said that though, strictly speaking, he had no right to respond to the toast, he gladly did so because he was convinced that the welfare of India was bound up with the welfare of the Indian Medical Service; that in fact, as he had said on another occasion, the Indian Medical Service was the pivotal Service. What were its wants? First of all, if it was to do its great work it must be a contented service. A man who entered and worked in it must feel assured that his interests were safeguarded, and be able to rely on those whose duty it was to look after his interests and those of his Service. He must be assured of adequate pay, and the minimum necessary improvements in pay had been promulgated during the last few months. The next point was that the status of the Service should be satisfactory; to attain this there must be, in the first place, proper access for the representatives of the Service to the Government of India and to the provincial governments, so that authoritative scientific opinion should be directly expressed; and, secondly, the matter of the relative claim to promotion and prestige of the I.M.S. and the R.A.M.C. in India should be so adjusted that an end might be put to a system under which merits and faults were wrongfully attributed. Another point was that the candidate for admission to the Service should feel in a position of security with regard to his prospects of promotion and the opportunities for attainment of experience. This was a primary necessity. There had been talk of curtailment of the right to private practice and of the separation of the civil and military services of India, but the usefulness of the I.M.S. in India depended on opportunity for diversity of experience. No man would be hampered in his private practice so long as it did not interfere with his duties to the Government, a principle which the Indian Medical Service was not likely to forget. Associated with opportunities for practice there must be opportunities for study; there must be study leave to visit on favourable terms the centres where the most recent achievements of medical science could be witnessed, and this implied a large enough leave reserve. In India itself there were needed, first, greater opportunities for research, and secondly, proper equipment for practice. Not long ago he had given to the House of Commons figures of the great influenza epidemic of last year, which had caused six million deaths in India and withdrawn from their daily avocations two-thirds of the population. A problem presented by such events as these could only be investigated in India, in order to ascertain what were the conditions of that country which had, so to say, particularized the infection. Research institutes with their libraries and attached hospitals must be established either by the Government, or by private munificence, or by both means. With regard to practice, he considered that there was ample room for urging greater expenditure on scientific equipment for the station hospitals. When these reforms had been achieved, then the Indian Medical Service would be on the high road to contentment. "I myself," said Mr. Montagu, "am doing my best to bring these things about, for I fully realize that unsatisfied promises cannot produce satisfaction. But the first of scientific virtues is patience. The labours of the committee over which Sir George Makins presided have

produced important results, and the report of Sir Verney Lovett's committee has been received and is under consideration. Things are in train, and I promise you that I will do my best to solve the problems presented to us."

Mr. Montagu, in his temporary capacity as a member of the Indian Medical Service, seemed to express very accurately the aspirations of that Service, for every point he made was punctuated by applause.

The Chairman of the Naval and Military Committee of the British Medical Association.

In response to a call by many of the officers present, the CHAIRMAN invited Lieut.-Colonel R. H. Elliot, I.M.S. (ret.) (Chairman of the Naval and Military Committee of the British Medical Association), to speak.

Colonel ELLIOT said that, though the call was unexpected, he was glad of the opportunity to say some things to those of his brother officers still in the Service. First and foremost, he desired to express the debt of gratitude the Service owed to Mr. Montagu and to Sir Havelock Charles. He had received many letters from India and from this country which showed, amongst other things, that the work of the two gentlemen was not fully appreciated or understood. There was often doubt where there should be trust, and suspicion where there should be confidence. His position had given him every opportunity of knowing what had been going on, and he would ask the officers of the Service to exercise a little patience and to trust those who were working for them. Sir Havelock Charles had been the inspiration of the reforms recently promised. The I.M.S. had no more loyal friend than the Surgeon-General at the India Office, but his path had been thorny and difficult. His efforts, however, would have been fruitless but for the sympathy and statesman-like grasp of the position shown by Mr. Montagu. Colonel Elliot said that in his dealings as a representative of the British Medical Association with the Secretary of State he had been impressed by his sympathy, kindness, and courtesy, and his genuine desire to appreciate the position of the Service and to help its officers. Mr. Montagu, in his replies to the deputation at the two interviews it had with him, took the claims presented one by one, and showed that, so far as lay in his power, he was determined to satisfy them, and so build up a happy, contented, and prosperous service. "So impressed," Colonel Elliot continued, "was I with the way he had met us, that I gave my promise that we would help him in turn. Many of my correspondents are suggesting that we are going too slow, but let me remind you of certain points. The Secretary of State has no easy task before him, and we should ill requite his attitude towards us if we added to his difficulties instead of striving to lighten them. At his instigation a Commission on the Medical Services has recently toured the whole of India, and its recommendations are now before the Government of India; we hope soon to learn what action that Government proposes to take on the recommendations made to it. We must wait patiently, we must give Mr. Montagu the time and the opportunity to make good his promises to us. Of one thing I am absolutely convinced, and that is that he will loyally fulfil those promises in the letter and in the spirit. He has made it clear to us from the start that he is not all-powerful—I only wish he were—but we must give him a fair chance first, and if he fails to satisfy us, I am sure it will be through no fault of his own. If we were to take any other course, and to act as some of my correspondents have suggested, we could neither ask nor expect him to trust us again. We have a sympathetic Secretary of State; we have a Surgeon-General at the India Office who is one of ourselves to the backbone; we have a Director-General in India than whom there has probably never been a better for such a time; and last, but not least, we have behind our cause at home the British Medical Association. I would ask each one of you, when you go out, or write out to India, to ask our brother officers out there to exercise patience and trust. There are grouse in every service; I am a grouser to-night; my grouse is against the officers who say the British Medical Association has done nothing for them, and who have never read the JOURNAL to find what we have been doing. For the last six years the Association has put in steady unwearying work, making sure of its ground, consolidating every position, and advancing steadily if slowly to the end

it has in view—namely, the establishment of the Service on a proper footing. The debt of the Indian Medical Service to the British Medical Association is one it cannot easily repay."

Officers Present.

The officers present were:

Major-Generals: Sir R. Havelock Charles, G.C.V.O., T. Grainger, C.B., G. F. A. Harris, C.S.I.

Colonels: C. W. Carr-Calthrop, W. W. Clemesha, C.I.E., G. W. P. Denny, C.I.E., D. E. Hughes, G. B. Irvine, C.B., C. A. Johnston, C.B., D.S.O., C. C. Little, J. J. Pratt.

Lieut.-Colonels: A. Alcock, C.I.E., W. G. P. Alpin, J. Anderson, C.I.E., F. E. Baines, Sir C. H. Bedford, Sir W. Buchanan, K.C.I.E., G. H. Bull, W. H. Burke, J. T. Calvert, C.I.E., D. G. Crawford, R. H. Elliot, S. H. Henderson, C. T. Hudson, C.M.G., J. G. Hulbert, S. P. James, E. R. Johnson, W. Glen Liston, C. H. L. Meyer, T. R. Mulronev, E. A. R. Newman, C.I.E., A. H. Nott, T. S. Norris, E. S. Peck, J. W. F. Rait, A. Street, T. H. Sweeney, C.M.G., T. H. Symons, O.B.E., G. Waters, A. C. Younan, E. W. Young.

Majors: W. A. Justice, J. G. B. Shand, C. Thomson, F. Norman White, C.I.E., R. E. Wright.

Captains: L. A. P. Anderson, G. G. Jolly, R. V. Martin, J. S. S. Martin, W. C. Spackman, F. Stevenson.

INSUFFICIENTLY TRAINED NURSES.

[FROM A CORRESPONDENT.]

THERE is a danger that when the Nurses' Registration Bill is enacted we shall rest satisfied with the thought that all has been done that is necessary to secure efficient nursing. Registration will enable us to select, and may draw better attention to the need for selection, but the resolution passed by the Representative Meeting in 1914—

That this meeting views with concern the increasing number of insufficiently trained nurses, and instructs the Council to call upon the Government and the other authorities concerned to take steps to remedy this evil

—is as important to day as it was then. It drew attention to the serious position that is arising from the introduction to the nursing profession, through various portals, of a very large number of women who, on account of this insufficient training, are not fitted for the important duties and serious responsibilities they are called upon to undertake. It is quite time that the public that employs them, in whatever capacity, appreciated this fact.

Nurses employed in the inspection and treatment of school children, in the treatment of tuberculosis, in fever hospitals, in maternity and child welfare centres, as health visitors, and, lastly, but by no means least, as district nurses, are still too freely recruited from the ranks of the inefficient. This increases the risks to those least able to bear them—the sick poor—and by interfering with the successful conduct of these services endangers the progress of reforms which, in the interests of the public health, we all consider necessary. Sick nursing in the homes of the poor is carried on under such difficult conditions, and requires so much resourcefulness, that it calls for the greatest possible degree of that training which gives ability and adaptability. If this is true in the town it is still more so in the country, where the nurse is of necessity more isolated, and her work more responsible; also because the country practitioner is now competent and willing to undertake much more than formerly in the way of surgery and treatment that requires the assistance of a skilled nurse, but he should and will undertake it only with assistance on which he can thoroughly rely. If he does such work it means a considerable relief to the already much overworked hospitals—a relief which, by the way, may be increased in another direction, because when, and only when, there exists an adequate service of properly trained district nurses hospitals will be able to send out many patients considerably earlier than they otherwise could.

The need for exact knowledge and technical skill on the part of the nurse increases with every advance of medicine. The aim of social reformers is to make the most efficient medical treatment available to even the poorest members of the community. This was the purpose of the Insurance Act, but it will not succeed if the doctor is hampered in his work by the want of proper help.

But there is an indirect as well as a direct mischief consequent on the employment of inefficient nurses. A nurse who has had a year's or even a few months' training

(and that perhaps not in a hospital), after working for a year or so as a district nurse is apt to get an exaggerated idea of her own competence and value; she may go to one of the too many nurses' homes that do not ask many questions, and from there pass out to the world as a properly trained nurse. The doctor telephones for a nurse suitable for an operation case, a case of pneumonia, a troublesome mental case, it does not matter which, she is just the nurse for such a case. Here is the danger to the patient, even the rich, and the danger to the medical man, both of whom are relying on the competence of the nurse.

Harm accrues also to the nursing profession itself, just in the way that any class is visited with the sins of its worst members—loss of respect and authority, want of confidence, loss of social position, less remuneration, and among the injuries that result from this unhealthy competition.

The blame for this state of affairs rests largely with the various public authorities and nursing committees concerned. They employ these nurses for various reasons, partly from motives of economy, partly because they do not realize the consequences, and partly because the supply of properly trained nurses is not sufficient. The want of money can only be cured by larger contributions from the National Exchequer—this is promised—from contributions by local authorities, including the guardians, to district nursing associations, and from the charitable.

It rests with the medical profession to make the public realize the evil effects of inefficiency. Often when this question is discussed the answer is that "the doctors are all very well pleased with our nurses, we never get any complaints"; or "Dr. X. never finds fault with Nurse G." One cannot, for obvious reasons, expect practitioners to report to the various employers, the illustrating instances that at times come to their notice; but collectively and without hurting any employee and without any personal discomfort, they may through their Division or Branch make authoritative representations, and it becomes the duty of the profession to inform these bodies what it considers they ought not to do, and what they might do.

One of the regulations of a county association with regard to district nurses reads: "All nurses to have had at least one year's training, either at a hospital or at a training home." The committee says that it cannot get fully trained nurses, and many others say and do the same. Intending nurses naturally feel it quite unnecessary to go to the expense and trouble of a full training when they can get equally good employment without it. In this way a vicious circle is formed. Somebody must break it; clearly the nurses will not, often cannot, so that it rests with the central and local authorities. They can at once offer much better salaries for properly qualified nurses. The supply cannot be made at once, but if it is at once made clear that better conditions are, and will continue to be, offered to more efficient nurses, the supply will surely come. At present many nurses are paid far too little.

One of the great difficulties that confronts a would-be nurse is the cost of training. County councils have the power to give grants or scholarships for nursing, but those who do, so far as we are aware, only do so for six or twelve months' training, thus giving official encouragement to under-training. These grants should be for the full three years.

Nurses employed in the various ways referred to above are apt, after a time, to find the work tedious, and to get rusty. This might be prevented and the service much improved by a scheme providing study leave. Two or three months' residence and work in a general or cottage hospital every other year would be a great boon, and it would give the hospital nurse too an opportunity of a change.

Conditions might be improved and life made brighter by the institution in each county of nurses' social unions like that which is run with so much success in Somerset. Lastly, a scheme to provide pensions is badly needed. A nurse's actual working life is so short, and her opportunities for making provision for her later years are so poor, that some sort of outside help is badly needed.

THE British Science Products Exhibition, organized by the British Science Guild, is being arranged at the Central Hall, Westminster, and will be open from July 3rd to August 5th.

British Medical Journal.

SATURDAY, JUNE 21ST, 1919.

THE FUTURE OF THE VOLUNTARY HOSPITAL SYSTEM.

ON June 3rd the Ministry of Health Bill received the Royal assent. Dr. Addison stated on May 28th in the House of Commons that immediately the Ministry of Health Bill became law, it was intended to set up the consultative councils, including one to advise upon the medical and ancillary services. He undertook not to submit any proposals to the Government for the development of local health services until he had obtained the advice of the consultative councils.

Section 4 of the Ministry of Health Act gives power to set up, by Order in Council, consultative councils to advise and assist the Minister in matters affecting the health of the people. It is understood that there will be, to begin with, four councils for England, to advise respectively on medical and allied services, on local health administration, on the insurance work of approved societies, and on general health questions. The members of each council will probably not exceed twenty in number; they will be appointed by the Minister, who is about to invite the chief medical bodies and organizations to submit nominations for appointments to the Medical Advisory Council. The number of persons thus nominated will be much larger than the number of persons proposed to be appointed to the Council, and it is, we understand, the intention of the Minister to refer this long list to a small medical board, to advise him in making the actual appointments. It would appear that the members of this small selection board, who have been nominated by medical bodies concerned, will not necessarily be ineligible for seats on the Advisory Council.

Our parliamentary correspondent's statement on May 31st—that the question of State aid for hospitals with a limited measure of State control had not as yet been considered by Dr. Addison—is in accord with all previous utterances, and with the statement of Viscount Sandhurst, the Government spokesman in the House of Lords, when he said that the bill conferred no power on the Minister to deal in any way with voluntary hospitals, and that under it the Ministry of Health would have nothing to do with hospitals. Nevertheless, there can be no doubt that the Ministry of Health will be bound at an early date to inquire into the adequacy of the existing provision of institutional treatment. An examination of this matter must include investigation of the present scope and functions of Poor Law infirmaries, and this, again, raises the whole question of the Poor Law, which the Government has pledged itself to deal with, subject to the necessary observation that the unravelling of the relations of the Poor Law to other departments of central and local administration must be a lengthy process. Before this, however, we may assume that the voluntary hospital system will have been thoroughly studied anew by the medical profession, and that the present managers of the voluntary hospitals will have much to say before any final decision is reached by the Government or Parliament.

It is significant that Mr. Wade Deacon, chairman of the Liverpool Royal Infirmary, speaking at a recent conference held by the British Hospitals Association to discuss the relation of the voluntary hospitals to the State, declared that the day for the voluntary hospital system, pure and simple, was over; it could not, he said, meet present requirements.¹ Sir Napier Burnett predicted that in the near future the country would demand that hospital facilities should be made available for a greatly increased number of people; this must necessarily lead to modifications of the present voluntary hospital system. Lord Knutsford put the matter epigrammatically: the hospitals, he said in effect, welcome State aid; they have no fear of State inspection; but they are afraid of State control.

A year ago Sir Bertrand Dawson, discussing the future of medicine in his Cavendish Lecture, argued that an efficient medical service could not be self-supporting if organized measures for preventing and curing disease were to be within the reach of all members of the community. "Is it not obvious," he said later on, "that no teaching hospital could provide the equipment and staff necessary to maintain such a service at full efficiency unless it were helped by endowment or State aid?" State aid on a small scale is in being; the Education Ministry gives grants for students and nurses, the Local Government Board gives grants to special departments like venereal clinics, and the Medical Research Committee assists research. No doubt, too, the Health Ministry, if formed, would subsidize health clinics. Such a policy of State subvention has the merit of being elastic, and is compatible with the continuance of voluntary support combined with adequate central control."

In this country the voluntary system has been inseparably bound up with the system of attendance by honorary visiting medical staffs, and it seemed at one time that the two things must stand or fall together. But recent legislation has brought this and many other things into the field of speculation* and debate. Recognizing the trend of events, the Representative Body of the British Medical Association in 1910 instructed the Council to prepare a report on the advisability of members of voluntary hospital staffs being paid for their services. The matter was gone into very carefully, and the findings of the Council were embodied in a special report submitted to the Annual Representative Meeting in 1913. In order to see the thing in a practical light it was felt that the first step should be to ascertain what effect the system of payment for hospital staffs in vogue in certain other countries had had on the status of the medical profession in those countries. Here difficulty arose owing to the impossibility of comparing the position of British hospital staffs with that of their colleagues abroad, the purely voluntary system being a peculiarly British institution. Nevertheless, the Council, after weighing such information as appeared to be relevant, was able to draw certain conclusions. It found that State subsidy by no means necessarily implied payment of the visiting staff, save in the form of a mere acknowledgement; that in Continental countries the holding of a hospital appointment offered sufficient advantages to attract the best men; and that while it could not be said that any existing system of State payment in other countries had lowered the status of practitioners accepting such payment, it by no means followed that a change from the voluntary to the paid system would not seriously affect the position of the profession in this country. Finding no general desire

¹ BRITISH MEDICAL JOURNAL, May 24th, 1919, p. 647.

among members of hospital staffs to change their position, and feeling uncertain as to the effect of such a change on the future of the hospitals and their staffs and on the status of the profession, the Council recommended the Representative Body to express the opinion that the voluntary system should be maintained as long as possible, and that to this end the services of the visiting medical staff should continue to be given on an honorary basis.

This recommendation was adopted by the Annual Representative Meeting in 1913. Four years previously, however, the Representative Body had expressed the view that the services of the medical profession should not be given gratuitously to patients maintained by public funds. At first sight the two principles seemed inconsistent. The difficulty was indicated in a memorandum by Dr. H. J. Campbell, chairman of the Hospitals Committee, on the position of voluntary hospitals under the Insurance Act, and it was discussed in the Annual Report of Council for 1916-17. On the one hand there was the desire to perpetuate and support the voluntary system, and on the other to establish and maintain the principle that the State should pay for medical attendance of persons for whose maintenance it is responsible. It seemed to the Council that these policies could be run in double harness by adopting the principle laid down in the Association's model scheme for the treatment of tuberculosis approved in 1914. The aim of this scheme was to enable voluntary hospitals to conform to the principle that medical services should not be given gratuitously to patients maintained by public funds, and at the same time to preserve their voluntary status in purely charitable work. The Council made a recommendation to this effect, and it was adopted by the Representative Body in 1917.

Several forces combine to make it probable that the voluntary hospital system will be reshaped in the near future. There is the movement to provide very much larger institutional facilities for the treatment of disease; in this the Ministry of Health will doubtless come to take the leading part. There are also the proposals for reorganizing the system of clinical teaching, outlined in Sir George Newman's memorandum on medical education in England. Following with some modifications the report of the Royal Commission on the University of London, Sir George Newman recommended the appointment of adequately paid professors of clinical medicine, surgery, and obstetrics, to devote the greater part of their time to teaching and research; they would be primarily teachers and only in a minor degree practising consultants. Since it is postulated that a professor of this kind "shall have control of wards (50 to 100 beds), an out-patient department, and ample laboratory accommodation in immediate proximity to the wards," his duties would clearly make him an officer of the hospital as well as an officer of the medical school. This raises a question on which there has been as yet no adequate public discussion. The Royal Commission knew that a hospital was an essential part of a medical school, and it desired that medical schools should eventually become constituent colleges of the university, for "if there is to be one university, all institutions belonging to it must for practical purposes be incorporated in it. They must themselves constitute and be the university. The only difference we can admit in the case of the medical faculty is that, as a large part of the work must be carried on in close connexion with hospitals in which the duties of the staff extend far beyond their educational functions, it will be the medical schools and not the hospitals which must be incorporated in the

university, and arrangements will have to be made between the university and the governing bodies of the hospitals with respect to the use of the hospitals for the purposes of medical education and research." But even so this would give the hospitals accepted as university hospitals a special status favourable to the principle of voluntary administration. The Royal Commission recognized that it would be impossible for the university, such as it contemplated, "to absorb and continue the whole of the London medical schools to do their present work," but it is common knowledge that there are hospitals in London (some of them possessing considerable endowments) which would be willing to come into a university scheme.

The idea of a whole-time salaried staff, centred in a professor whose primary function is teaching, has appealed to many teachers and members of the governing bodies of the hospitals, and in London and elsewhere there have been proposals for putting the plan into action at certain of the larger hospitals. Three months ago the governors of the London Hospital sanctioned an experimental scheme, unanimously approved by the medical staff, for the appointment of whole-time salaried officers to fill vacancies in the honorary medical staff. A brief sketch of these proposals was given in the *JOURNAL* of March 15th, p. 319. So far the whole-time hospital teaching unit awaits the test of experience. It is believed that opportunities for an extended trial may be afforded by grants obtained through the Board of Education, which would be prepared to assist in this way such medical schools as adopt a scheme conforming to the Board's requirements.

The general conclusion must be that from one cause and another the system of attendance by honorary visiting staffs, no less than the voluntary hospital system itself, can scarcely expect to pass unaltered through the period of reconstruction now before us.

THE NATION'S DEBT TO PHYSIOLOGISTS.

ELSEWHERE in this issue we publish a summary of Professor Starling's Oliver-Sharpey lectures, which were devoted to the history of our national food policy during the war. Professor Starling, as chairman of the Food (War) Committee of the Royal Society and subsequently one of the scientific advisers of the Food Ministry and British representative upon the Inter-Allied Scientific Commission, has been fully cognizant of events upon which it is no exaggeration to say the fate of the empire depends. The story he has to tell is of the greatest interest.

In the earlier days of the war physiological aspects of the food problem did not receive the official attention they deserved, and there was a time when it seemed doubtful whether the considered opinions of scientific men would prevail. This *JOURNAL* was insistent in pointing out the nature of the danger ahead, and not the least of the claims of the late Viscount Rhondda upon the nation's gratitude is the willingness he displayed to be guided by scientific opinion. It is not too wild a paradox to claim that the issue of the war was placed beyond doubt by decisions taken in London in the winter of 1917-18 which had no direct reference either to military operations or munitions of war.

Official Germany realized much earlier than did our politicians that the war would be won by "calories," and formulated an offensive and defensive plan of operations; this plan was, however, essentially faulty. Both in the matter of rationing and in the maintenance of farm stock the German Government failed to apply the correct scientific principles. Not a few

influential persons in this country were anxious to follow the Germans in the wrong path, and only those who were behind the scenes have any idea of the bitter struggle that had to be faced before the principles which, as explained by Professor Starling, now appear axiomatic were accepted by those who had the means of enforcing them.

All the world now knows that the complete collapse of the enemy was, in final analysis, due to the failure of food supplies. What the average man does not know is that had the efforts of the scientific men in this country been frustrated, had there been a little more delay in following their advice, neither mountains of shells nor the professional abilities of the allied commanders would have secured the crowning mercy of November 11th.

In the work of estimating the actual position in this country and the needs of its inhabitants, the Food (War) Committee of the Royal Society provided an excellent illustration of team work at its best. Not only were frequent opportunities afforded for the interchange of ideas between workers expert in the physiological, clinical, statistical, and agricultural methods of research involved, but advantage was taken of the opportunities incidentally provided by the war-time circumstances of members to obtain data of general service. For instance, important information was derived from the investigations made for army purposes by Lieut.-Colonel E. P. Cathcart and his associates, while the dietetic studies carried out by Captain M. Greenwood to assist the Ministry of Munitions were also made available. Particular investigations of this kind, co-ordinated with the miscellaneous information gathered in a wide field by the late Sir William Thompson and by Professor Starling, in their capacities of scientific advisers to the Ministry of Food, were of great value. Many other examples could be given—the Committee, indeed, acted as an efficient clearing house for nutrition researches.

It is not to be expected, perhaps not even to be desired, that those who saved the nation in a crisis of her history should receive the popular applause which is reserved for the military and political heroes who—in spite of one another—"won the war," and are now, as Mr. H. G. Wells long ago expected, discussing the "discipline and details of the battle and each other's little weaknesses in the monthly magazines." What was done was done in obedience to the law of all scientific thought, the rule of scientific honour, which is immutable whether the material issue be great or small—namely, to assemble exact data and then to reason strictly from premiss to conclusion. Obedience to this rule can preserve us amidst the less dramatic but not less real perils which cluster around the national path now. The only guerdon men of science expect or would value is the knowledge that scientific principles will continue to inform, not one, but all departments of public administration.

THE HEADS OF THE ARMY NURSING SERVICES.

THE Army of the Rhine has just had the pleasure of a visit from the two Matrons-in-Chief of the Army, Dame E. H. Becher, G.B.E., and Dame E. M. McCarthy, G.B.E., and did its best to make these two distinguished ladies understand how greatly their work for the army during the war was appreciated and in what high esteem they themselves are held. Dame Becher was Matron-in-Chief of Queen Alexandra's Imperial Nursing Service when the war broke out, and Dame McCarthy, a Principal Matron, became Matron-in-Chief of the British Armies in France. These ladies are, we believe, the only two departmental chiefs who have remained in the same office throughout

the war. Dame Becher has been responsible at the War Office for the supply of the nursing staff at home and abroad, including every expedition, from German East Africa to Murmansk; providing nurses and V.A.D.s wherever they were wanted, and doing it so well as to obscure the difficulty of her task. Dame McCarthy must be known to every man who served in France, certainly to every medical officer; she was to be met with on the road in her car wherever British forces went in France, and her fearlessness, which took her to casualty clearing stations in difficulties, as during the retreat in March, 1918, excited the admiration of every soldier. She and Dame Becher were welcomed by the officers and men of the Army of the Rhine as one of themselves. They visited most of the medical units; they inspected the hospitals and casualty clearing stations in and about Bonn and Cologne, saw a demonstration of stretcher work in the trenches, and went to Langenfeld and Leichlingen, where they inspected German institutions which have been taken over and adapted as general hospitals for British troops. One day they went into the American area on the Moselle, and before they left the British Army of the Rhine they attended a reception, where they met the Commander-in-Chief, Sir William Robertson, and some of the corps commanders, and received a visit from General Mangin, the French Commander-in-Chief, who thanked them for the services rendered by British nurses to his armies. Thanks were also given by Belgian and American officers for similar services. On the last day of their visit the two Matrons-in-Chief made a tour of the northern part of the front, visiting Douai, Lens ("chef d'œuvre de destruction," according to Clemenceau), Loos, Hulluch, La Bassée, the brickstacks, and the railway triangle, on to Givenchy and Bethune, passing the famous dressing station known as "Harley Street"; then going south to Notre Dame de Lorette, Souchez, and the Vimy Ridge with its Canadian monuments, and so through Roelincourt, by the three great craters, along the north of the Scarpe into Arras, and out to Cambrai. They completed their tour of inspection by visiting British hospitals at Antwerp and Rotterdam. It may be that the two Matrons-in-Chief looked upon their visit as an occasion to say good-bye to the army for which they have worked so long and so well. We believe that both are about to retire. We venture to hope that services so conspicuous and successful will be formally recognized by a vote of thanks by Parliament.

FASCICULATION OF NERVE TRUNKS.

A KNOWLEDGE of the disposition of nerve bundles in the trunks of the peripheral nerves has so obvious a value for suture and grafting that attempts have been made, chiefly by electrical stimulation, to map the more important of them. Professor Dustin's¹ recent contribution to the subject is of great importance. He made an anatomical study by means of sections and teased macerated specimens, of a considerable number of median, ulnar and musculo-spiral nerves, and showed that there are wide individual variations of fasciculation. Some trunks are but sparsely, some richly fasciculated, and the type is not characteristic of any particular nerve, though the ulnar is, of these three, the most broken up. In a given individual all three may be of one type but by no means necessarily, nor is there any essential bilateral symmetry. In a given trunk the type varies almost from millimetre to millimetre; that is, there is constant division and re-anastomosis of the fascicular plexus. Fusion occurs where there are no branches, diffusion near and at collateral or terminal branches. There are zones of dispersion and condensation. Close to the roots and in the plexus variability is very great, but still nodal zones are observable. It thus becomes evident that no functional systematization is possible on an anatomical basis, and that excitation-

¹ *Ambulance de l'Océan*, Tome II, Fasc. I, p. 135 et seq.

localization must be special to each individual nerve. Since the type of fasciculation alters constantly within a millimetre or two, and since a greater length than that must be removed for "freshening" before suture of a completely divided nerve, it is clear that exact anatomical apposition is impossible. The prognosis will be better the nearer the line of suture is to a nodal zone, that is, the more remote from a branch; the number of cross junctions will be minimal, and the amount of interposed cicatricial tissue proportionately less. In the case of partial section the case is very different. The neural contents of every sheath that is opened suffer demyelination with fibrillation and degeneration of axons, and consequently the greater the number of subdivisions of sheath, the fewer the axons likely to be destroyed by a given lateral wound. At or near a nodal zone half or a third of the axons are likely to be involved, and therefore at such a point a partial lesion justifies resection and total suture. On the other hand, a wound near branches offers good prospect of recovery from conservative repair, more especially in the biggest nerves. In the choice of a nerve for a graft there is no point in selecting an homologous nerve, but nodal portions should be taken to ensure a minimal amount of connective tissue interference.

OPTIONAL OR COMPULSORY GREEK AT OXFORD.

THE new responsions statute, the effect of which would have been to make Greek no longer compulsory at Oxford, was rejected in Convocation on June 17th by a majority of six votes: the figures were 312 against the change and 306 in favour of it. By an overwhelming majority in Congregation the resident members of the university about a month ago carried a statute to make Greek optional in the examinations leading to the B.A. degree. The rejection of the new statute was moved by the Rev. E. M. Walker, a Fellow of Queen's College, who said that he and those acting with him were prepared to accept the compromise that students of mathematics and natural science should be excused the test of Greek. The opponents of the proposed statute as it stood had prepared amendments, but they had been ruled out of order; they were therefore bound to appeal to Convocation to throw the statute out, in order that a new form embodying the principle of the compromise might be introduced at the beginning of the next term; there would then be no reason against its becoming law before Christmas. The Greek Committee would not oppose it. Mr. Ernest Barker, a Fellow of New College, who introduced the statute, said that the opinion of the resident teachers in favour of it had largely increased; in fact he knew of no statute during the last twenty years that had been received in Congregation with such remarkable unanimity. He asked that the responsions examination should be reshaped, and contended that so long as a system of classical scholarships existed there was encouragement, in the form of a bounty, for the study of Greek. The clear issue was between responsions as it existed with all-round compulsion, and responsions as under the proposed statute which would provide all-round option. The Regius Professor of Greek (Professor Gilbert Murray) said that the main argument in favour of retaining Greek was that at a time of great danger to humane studies it would tend to keep the language alive in schools. The main argument against it was that many people were being compelled to learn a subject not germane to their main studies; in his opinion that was a fatal objection. If the statute were defeated he promised to bring forward a compromise next term which, if passed, would oppress no one. It would produce a course in which the modern was based on the ancient in such a way that every part subserved the whole. The old culture would be reformed, brought into touch with the times, revived, and made brighter. The new statute was rejected by the narrow majority already stated. It seems,

however, that a certain amount of progress has been made, and the details of Professor Murray's compromise will be awaited with interest.

LIQUOR CONTROL.

A DEPUTATION from the Temperance Council of Christian Churches, among the members of which were the Bishop of Croydon and Sir Alfred Pearce Gould, was received by Lord D'Abernon, chairman of the Central Control Board (Liquor Traffic), on June 14th. The Temperance Council has a programme of nine points, including Sunday closing, restriction of the week-day hours of opening, reduction of the number of licensed premises, control of clubs, the abolition of grocers' licences, the prohibition of the sale of intoxicating liquor to young persons, and local option. Lord D'Abernon, in his reply, said that the problem before temperance reformers to-day was very different from that presented in 1914. Statistics for the years 1910 to 1914 showed an increase in drunkenness and alcoholic diseases, but those down to the beginning of the present year indicated that owing to war time restrictions, and to the self-imposed moderation and good sense of the people, drunkenness had fallen to less than one-fifth of the pre-war level, and alcoholic diseases had declined in practically the same proportion. The problem to-day was not so much how to devise measures to effect further improvement, but how to maintain the ground gained without infringing personal liberty and without imposing such restrictions upon recreation and refreshment as might be considered intolerable in time of peace. There could be no question of continuing the war powers; a new system with parliamentary and ministerial control would have to be set up. The nature of the duties and responsibilities imposed on the controlling authority under that system would depend upon public opinion, but in his judgement the position was full of hope; he believed that the large majority of the public would be in favour of new measures, based upon recent experience, which, while ensuring improvement compared with the pre-war period, would not interfere with the habits, customs, and pleasures of the people to an undue extent. To achieve this result temperance advocates would have to examine and revise their pre-war programme, which contained much that was unnecessary or too extreme. The problem should be studied with a fresh mind and only that portion of the old programme maintained which had been proved by the experience of the past four years to be both effective and necessary. He was glad that the programme of the Temperance Council did not include restriction of quantity; severe restriction of quantity had never formed part of the policy of the Central Control Board, and was undesirable even from the temperance point of view. The programme put forward bore evidence of a reasonable spirit and a desire to discuss matters with the other side, and there was in large sections of the trade something of a new spirit. Mr. Sydney Nevile, in his paper in a recent issue of the *Journal of the Institute of Brewing*, recognized that sobriety was vital for the well-being of the trade, welcomed many of the restrictions imposed during the war, and advocated a large reduction in the number of licensed houses. Lord D'Abernon, in conclusion, said that he had always been opposed to the view that the only advance towards true temperance was through the destruction of trade interests. He believed, on the contrary, that discussion between intelligent representatives of the trade and the leaders of temperance thought would show that there were many points in common and that their objects were not necessarily incompatible. Moderate opinion, he believed, was largely agreed in wishing the retention of a maximum of the benefits resulting from war control, together with the imposition of a minimum of the restrictions necessary to obtain the desired result, and the conditions of the present time offered a unique opportunity for achieving a permanent advance. Lord D'Abernon's statement seems to put the

matter very well; the temperance cause has always suffered from over-statement. The vast majority of people in all the allied countries are in the habit of taking alcoholic beverages, and of this majority only a very small minority take them to excess. The whole temperance agitation is suspect owing to the exaggerations of its more extreme advocates.

DIRECT REPRESENTATIVES ON THE GENERAL MEDICAL COUNCIL.

THE General Medical Council will hold in November next an election for the appointment of direct representatives upon it of the medical profession. The election is conducted by means of voting papers forwarded through the post. The present representatives for England and Wales are Dr. H. W. Langley Browne (West Bromwich), Dr. H. A. Latimer (Tunbridge Wells, late of Swansea), Dr. J. A. Macdonald (Taunton), and Sir T. Jenner Verrall (Bath). Dr. Langley Browne and Dr. Latimer were first elected at the end of 1906, and re-elected five years later; Dr. Macdonald was elected in May, 1911, and Sir Jenner Verrall at the end of the same year. Under the Medical Act of 1886 all four would have come to the end of their term of office by the end of 1916; but in order that the practitioners of the country might not be diverted from their urgent concerns by the formalities of an election, the Privy Council applied to the General Medical Council the provisions of the Parliament and Local Elections Act, 1916; under this an Order was issued prolonging the tenure of the direct representatives until the end of 1917. By the same means the election was further postponed from year to year during the war, with the result that all the direct representatives retain their office until December 31st, 1919. We understand that the four representatives for England and Wales have intimated their willingness to stand for re-election if selected as the nominees of the British Medical Association. The direct representative for Scotland, Dr. Norman Walker, who has held office since January, 1907, and is now Chairman of the Business Committee, will stand again; Dr. Michael Dewar of Edinburgh has also expressed his intention of becoming a candidate. The direct representative for Ireland is Dr. Leonard Kidd, who has sat since 1906.

THE PREVENTION OF HYDROPHOBIA.

THE Society for the Prevention of Hydrophobia, founded in 1886, did at that time a great deal of useful work by informing the public respecting the nature of rabies in animals and man, and in urging the Government to take the only action by which, in the light of past experience, the disease could be eradicated from Great Britain—namely, the muzzling of all dogs for a specified period, accompanied by quarantine for six months of all imported dogs. Owing largely to the efforts of the society very extensive areas of the country were scheduled for muzzling in 1897 and quarantine instituted. For the sixteen years from 1902 to 1918 no case of rabies was reported in the country, and the operations of the society were suspended. It is now resuming work in view of the fact that rabies has broken out again, owing, as is believed, to the smuggling of dogs from the Continent. The position is being met by the Board of Agriculture by partial muzzling orders, a policy which must always be ineffective. The late Sir Victor Horsley was chairman of the committee of the society; his place has now been taken by Mr. Sidney Turner, who for twenty years has been chairman of the Kennel Club Committee, a fact which is sufficient proof that the welfare of dogs, as well as the safety of the public, is one of the chief objects of the society. The prospectus of the revived society gives some particulars of general interest. It states that in 1885 no fewer than 39 persons died from hydrophobia in London and the suburbs, a very large majority being children. A police muzzling order was issued in November

of that year, and in 1886 there were only 9 deaths, and the order was rescinded. Rabies, however, occurred in 1889, when there were 312 cases; in the following year there were 129; in 1891 there were 79, and in 1892, 38 cases. The rabies order of 1892 was inefficiently administered by local authorities, and in 1893 there were 93 cases; in 1894 there were 248, and in 1895 there were 672. Then muzzling orders were more generally enforced, and there was at once a decline in the number of cases notified. How many deaths from hydrophobia in London and Wales occurred at this period has probably been forgotten; in 1889 they numbered 30, in 1890 there were 8, in 1891, 7; in 1892, 6; in 1893, 4; in 1894, 13; and in 1895 there were 20. The present policy of applying the muzzling order only in districts in which rabies has been recognized cannot be expected to produce the desired results, and the society advocates universal muzzling for eight months, combined with quarantine for imported dogs. The muzzling order does not apply to dogs actually employed when used for destroying vermin, working for shepherds or herdsmen, or in sports when in charge of competent persons. At the present time the order is not properly enforced even in some of the scheduled districts, and this is a matter to which the society should give early attention. Its secretary, Mr. Frank Karslake (35, Pond Street, Hampstead, N.W.3), has published a new edition of an excellent pamphlet entitled, *Rabies and Hydrophobia: their Cause and Prevention*, in which some particulars are given of the occurrence of the disease in animals other than dogs.

A MEDICAL INSTITUTE FOR NEWCASTLE.

FOR many years it has been recognized that the housing accommodation available has been quite inadequate and unsuitable for the numerous scientific medical societies which meet in Newcastle, and several efforts have at various times been made to secure suitable premises in a central position. This long-cherished ideal is about to be realized through the munificence of one of the most respected and public-spirited practitioners in the neighbourhood, Dr. J. W. Smith of Ryton. Dr. Smith has, with characteristic generosity, offered a sum of £5,000 to found a medical institute in memory of his son, Dr. J. Wilkie Smith, who died at an early age with almost tragic suddenness some five years ago. His object is not only to provide a suitable meeting-place—where the various medical societies and other organizations may meet under one roof—but perhaps even more, to provide a rendezvous for the members of the medical profession in northernmost England in their not too numerous spare moments. The lack of such a home has frequently been deplored, and Dr. Smith is conferring a very real boon on his professional colleagues by his timely and generous gift. A small committee has the project in hand, and it is hoped that a further announcement may be made at an early date.

SIR ANTHONY BOWLBY, K.C.B.

SIR ANTHONY BOWLBY will shortly retire from the post of senior surgeon to St. Bartholomew's Hospital. His colleagues and pupils propose to present to him a portrait of himself painted by a well known artist, in recognition of his services to the hospital and medical school, and of the appreciation felt by all St. Bartholomew's men for the work he has done for the Army Medical Service during the war. The portrait will be formally presented to Sir Anthony Bowlby at a meeting of the subscribers, and it will be hung in the Great Hall of the hospital. The honorary secretary of the fund is Mr. W. G. Ball, The Warden's House, St. Bartholomew's Hospital, E.C.1; and subscriptions—which should not exceed two guineas—should be sent to the treasurer, Mr. R. C. Bailey, at that address.

¹ London: W. and G. Foyle, 1919. (Price 1s.; or from the author, post free 1s. 2d.)

BIRTHDAY HONOURS.

The following is a further instalment of honours conferred on the occasion of the King's birthday.

O.B.E.

Lieut.-Colonels: E. Wilberforce Goodall, R.A.M.C.(T.F.), Samuel B. Smith, D.S.O., R.A.M.C.

Honorary Lieut.-Colonels: Edward H. Nicholas, R.A.M.C., Ernest W. White, R.A.M.C.

Temporary Lieut.-Colonels: Herbert G. Ashwell, R.A.M.C., Gilbert A. Bannatyne, R.A.M.C., William R. Dawson, R.A.M.C., Jack Grinsell, S.A.M.C., David Horwich, S.A.M.C., Raymond Maxwell, S.A.M.C., Arthur B. Mitchell, R.A.M.C., Herbert J. Orford, S.A.M.C., Charles Porter, S.A.M.C., Seton S. Pringle, R.A.M.C., William T. Prout, C.M.G., R.A.M.C., Paul C. E. Tribe, R.A.M.C., W. J. N. Vincent, R.A.M.C., William Wrangham, R.A.M.C.

Temporary honorary Lieut.-Colonels: Georges Dreyer, R.A.M.C., Peter Macdiarmid, R.A.M.C.

Majors and Brevet Lieut.-Colonels: R. A. Bolam, R.A.M.C.(T.F.), Andrew McMuun, R.A.M.C., Charles Randle, R.A.M.C.(T.F.).

Majors (temporary Lieut.-Colonels): Hamilton M. Cruddas, C.M.G., I.M.S., William V. Field, S.A.M.C., Gordon W. Fitzgerald, R.A.M.C.(T.F.), George W. Heron, D.S.O., R.A.M.C., Lewis W. Jeffries, D.S.O., A.A.M.C., Alexander E. Kidd, R.A.M.C.(T.F.), Ian M. Macrae, I.M.S.

Majors (acting Lieut.-Colonels): Charles Bramhall, R.A.M.C., James C. G. Carmichael, R.A.M.C., Thomas M. Carter, R.A.M.C.(T.F.), George De la Cour, R.A.M.C., John M. M. Crawford, R.A.M.C., Ernest N. Cunliffe, R.A.M.C.(T.F.), Thomas H. Gibbon, R.A.M.C., David J. Graham, R.A.M.C.(T.F.), Arthur C. H. Gray, R.A.M.C., Alfred B. Hinde, R.A.M.C.(ret.), Frederick W. Johnson, R.A.M.C.(T.F.), Seymour W. Jones, I.M.S., Ernest B. Lathbury, R.A.M.C., Robert W. D. Leslie, R.A.M.C., Donald K. McDowell, C.M.G., R.A.M.C., Alfred W. Moore, R.A.M.C.(T.F.), Richard E. U. Newman, M.C., R.A.M.C., Daniel W. Patterson, R.A.M.C.(T.F.), Thomas J. Potter, R.A.M.C., Brownslow Riddell, R.A.M.C.(T.F.), Henry B. Roderick, R.A.M.C.(T.F.), John W. S. Seccombe, R.A.M.C., H. W. Marett Tims, R.A.M.C., John J. Urwin, I.M.S., Walter J. Waters, R.A.M.C., Norman Septimus Wells, I.M.S., Joseph F. Whelan, D.S.O., R.A.M.C., Maurice Forbes White, I.M.S.

Majors: Michael D. Ahern, R.A.M.C., Frederick W. Andrewes, R.A.M.C., Cyril V. Baigent, N.Z.M.C., Harry C. Baker, S.A.M.C., Frederick T. Bowerbank, N.Z.M.C., James M. G. Bremner, R.A.M.C.(T.F.), George R. Bruce, R.A.M.C.(S.R.), William Byam, R.A.M.C., Stanley G. Chown, C.A.M.C., Richard C. Clarke, R.A.M.C.(T.F.), Edmund H. Colbeck, N.Z.M.C., Alexander Cook, A.A.M.C., Martin A. Cooke, R.A.M.C.(T.F.), Daniel M. Corbett, R.A.M.C., Evan J. T. Cory, R.A.M.C.(T.F.), Charles Crawley (R.P.), R.A.M.C., John Francis Cunningham, R.A.M.C., Arthur M. Davidson, A.A.M.C., James H. Douglass, R.A.M.C., James M. Duncan, R.A.M.C.(T.F.), Albert Ehrmann, R.A.M.C.(T.F.), Arthur W. M. Ellis, C.A.M.C., George E. O. Fenwick, N.Z.M.C., Walter H. Fisher, R.A.M.C.(T.F.), Michael G. Foster, R.A.M.C.(T.F.), Norman M. Gibson, A.A.M.C., Alexander C. E. Gray, R.A.M.C., Alfred H. Heslop, D.S.O., R.A.M.C., Clayton A. F. Hingston, I.M.S., Personal Assistant to the Surgeon-General with the Government of Madras, Archibald H. Hogarth, R.A.M.C.(T.F.), Arnold W. Izard, N.Z.M.C., Arthur L. Jones, M.C., C.A.M.C., Lorne F. Jones, C.A.M.C., Frederick D. H. B. Lawton, A.A.M.C., John R. Lee, R.A.M.C., Archibald F. Macaulay, C.A.M.C., John Macdonald, A.A.M.C., Sir Andrew Macphail, C.A.M.C., Eric L. Marchant, N.Z.M.C., Isa Carswell Marshall, R.A.M.C.(T.F.), Charles J. Martin, R.A.M.C.(T.F.), Samuel Martyn, R.A.M.C.(T.F.), Edward B. Munro, I.M.S., Francis Napier, S.A.M.C., Lamont Patterson, H.Q. Staff, Newfoundland, Henry P. Pickerrill, N.Z.M.C., William R. Pirie, R.A.M.C.(T.F.), G. Newton Pitt, R.A.M.C.(T.F.), John D. Richmond, D.S.O., R.A.M.C., James C. A. Rigby, S.A.M.C., Michael B. H. Ritchie, D.S.O., R.A.M.C., Russell B. Robertson, C.A.M.C., Harry W. Russell, R.A.M.C., Arthur B. Smallman, D.S.O., R.A.M.C., Walter G. Spencer, R.A.M.C.(T.F.), Arthur C. Stamborg, R.A.M.C., Percy D. Stewart, C.A.M.C., Samuel J. Streight, C.A.M.C., Russell H. Jocelyn Swan, R.A.M.C., Charles L. D. Taylor, R.A.M.C., Norman D. Walker, R.A.M.C., Vernon N. Whitmore, I.M.S., Charles F. White, R.A.M.C., Reginald Worth, R.A.M.C., Maurice B. Wright, R.A.M.C.

Temporary Majors (acting Lieut.-Colonels): Harry H. Balfour, M.B.E., S.A.M.C., Arthur F. Hurst, R.A.M.C., Ernest W. Skinner, R.A.M.C.

Temporary Majors: George A. Benson, R.A.M.C. (R. of O.), Richard H. Bremridge, R.A.M.C., Edward P. G. Causton, R.A.M.C., O. Challis, R.A.M.C., James A. Devine, D.S.O., R.A.M.C., Alexander R. Ferguson, R.A.M.C., William T. Finlayson, R.A.M.C., William E. Home, R.A.M.O., Charles W. M. Hope, R.A.M.C., Louis F. Knuthsen, R.A.M.C., John S. Morrow, R.A.M.C., Matthew W. B. Oliver, R.A.M.C., Francis C. Purser, R.A.M.C., Gordon Taylor, R.A.M.C., Francis M. R. Walshe, R.A.M.C., Stanley W. Williams, R.A.M.C., Harold W. Wiltshire, D.S.O., R.A.M.C., James C. Woods, R.A.M.C., Sydney W. Woollett, R.A.M.C., W. Perceval Yetts, R.A.M.C.

Temporary honorary Majors: Ernest G. Crabtree, R.A.M.C., Kennedy Foster, R.A.M.C., Thomas G. M. Hine, R.A.M.C.

Captains and Brevet Majors (acting Lieut.-Colonels): Harold H. Blake, R.A.M.C., Robert L. Guthrie, R.A.M.C.(T.F.).

Captains and Brevet Majors: Leslie Dunbar, R.A.M.C., Reginald C. Elmslie, R.A.M.C.(T.F.), A. G. R. Foulerton,

R.A.M.C.(T.F.), Colin C. Frye, R.A.M.C.(T.F.), Alexander S. M. MacGregor, R.A.M.C.(T.F.), William McNaughtan, R.A.M.C.

Captains (acting Lieut.-Colonels): William Brown, R.A.M.C.(T.F.), John Bruce, R.A.M.C.(T.F.), William Duncan, R.A.M.C.(T.F.), Wilfred J. Dunn, R.A.M.C., John G. Gill, D.S.O., M.C., R.A.M.C., James D. Kidd, M.C., R.A.M.C., Ernest Knight, R.A.M.C.(T.F.), Edward M. Middleton, R.A.M.C., Hugh G. Monteith, D.S.O., R.A.M.C., John R. Pooler, R.A.M.C.(T.F.), Percival T. Rutherford, R.A.M.C.(T.F.), David J. Scott, M.C., R.A.M.C.(T.F.).

Captains (temporary Majors): Arthur S. Cane, R.A.M.C., John W. Farrar, A.A.M.C., David E. Fenwick, N.Z.M.C., Eric F. W. Mackenzie, M.C., R.A.M.C., Frederick Powlett Rankin, R.A.M.C., Wilfred Warwick Treves, R.A.M.C.

Captains (acting Majors) Adolphe Abrahams, R.A.M.C., James A. H. Aitkin, R.A.M.C.(T.F.), Samuel R. Armstrong, R.A.M.C.(S.R.), Frederick A. Barker, I.M.S., Herbert T. Bates, R.A.M.C.(T.F.), Winslow S. S. Berry, R.A.M.C., John J. E. Biggs, R.A.M.C.(T.F.), Myer Coplans, D.S.O., R.A.M.C.(T.F.), John Dale, R.A.M.C.(T.F.), Richard F. O'T. Dickinson, R.A.M.C., Robert M. Dickson, R.A.M.C., Robert G. Dixon, R.A.M.C.(T.F.), Maurice R. Dobson, R.A.M.C., Arthur W. H. Donaldson, R.A.M.C.(T.F.), Henry J. Dunbar, R.A.M.C.(T.F.), Charles H. J. Fagan, R.A.M.C.(T.F.), Thomas L. Fraser, R.A.M.C., Sydney J. V. Furlong, R.A.M.C.(S.R.), Gerald F. P. Gibbons, R.A.M.C.(S.R.), Archibald J. Gilchrist, M.C., R.A.M.C.(S.R.), Thomas T. Higgins, Maurice J. Holgate, I.M.S., William N. W. Kennedy, R.A.M.C.(T.F.), Charles Kerr, R.A.M.C.(T.F.), Donald H. C. MacArthur, R.A.M.C., Robert B. MacFie, R.A.M.C., David M. Marr, R.A.M.C.(S.R.), Geoffrey Marshall, R.A.M.C.(S.R.), William Mathieson, R.A.M.C., George W. Milne, R.A.M.C., James Y. Moore, R.A.M.C., Matthew W. Paterson, M.C., R.A.M.C.(S.R.), William de M. Peyton, R.A.M.C., William R. Pierce, R.A.M.C.(T.F.), Rees Phillips, R.A.M.C.(T.F.), Thomas S. Rippon, R.A.M.C., Robert L. Ritchie, R.A.M.C., William Thomas Ritchie, R.A.M.C.(T.F.), Alfred L. Robertson, R.A.M.C., Harry D. Rolinson, R.A.M.C.(S.R.), William H. Rowell, R.A.M.C.(T.F.), Thomas Russell, R.A.M.C.(T.F.), George W. Shore, R.A.M.C.(T.F.), Edward P. A. Smith, M.C., R.A.M.C., George W. Smith, R.A.M.C., George H. Stevenson, M.C., R.A.M.C.(S.R.), William Stobie, R.A.M.C.(T.F.), John Strathearn, R.A.M.C.(T.F.), Leonard W. Swayne, R.A.M.C.(T.F.), James Taylor, R.A.M.C., Leonard R. Tossywill, R.A.M.C.(T.F.), Reginald Martin Vick, R.A.M.C.(T.F.), Kenneth D. Wilkinson, R.A.M.C.(T.F.), William E. R. Williams, I.M.S., Archibald Wilson, M.C., R.A.M.C.(S.R.), John L. Wood, R.A.M.C., Lionel D. Woods, R.A.M.C.

Captains: Charles H. Allen, R.A.M.C.(T.F.), Henry C. Bazett, M.C., R.A.M.C., George Bell, A.A.M.C., Arthur B. H. Bridges, R.A.M.C., R. Cunningham Brown, R.A.M.C., James M. H. Campbell, R.A.M.C.(S.R.), Clement C. Chesterman, R.A.M.C., William Corner, R.A.M.C.(S.R.), Reginald S. Orme Duffield, R.A.M.C.(T.F.), Arthur H. Evans, R.A.M.C.(T.F.), Harold A. T. Fairbank, D.S.O., R.A.M.C., Montgomery du Bois Ferguson, R.A.M.C., Cuthbert E. C. Ferry, R.A.M.C.(T.F.), Charles Forbes, R.A.M.C.(T.F.), Charles J. D. Gair, R.A.M.C.(T.F.), Herbert L. Garson, M.C., R.A.M.C., James A. Glover, R.A.M.C., F. Lucien Golla, R.A.M.C.(T.F.), Henry James Gorrie, R.A.M.C.(T.F.), William Thomson Graham, R.A.M.O., William Francis T. Haultain, M.C., R.A.M.C.(S.R.), Thomas S. Hele, R.A.M.C.(T.F.), Ernest C. Hughes, R.A.M.C.(T.F.), George J. Jenkins, R.A.M.C.(T.F.), Jordan C. John, I.M.S., Colin King, R.A.M.C., Henry Rowland L'Estrange, R.A.M.C., George James Linklater, R.A.M.C.(T.F.), Angus G. Macdonald, R.A.M.C., Arthur G. Maitland-Jones, M.C., R.A.M.C., James P. S. Marshall, M.C., C.A.M.C., Herbert W. Martin, C.A.M.C., John B. de W. Molony, I.M.S., John Muir, R.A.M.C.(T.F.), Thomas M. Ormiston, R.A.M.C.(T.F.), Robert D. Parker, S.A.M.C., Henry M. J. Perry, R.A.M.C., John Renwick, R.A.M.C., William A. Richardson, C.A.M.C., Gerald Russell Rickett, R.A.M.C.(T.F.), Andrew Robertson, R.A.M.C.(T.F.), Robert P. Rowlands, R.A.M.C.(T.F.), Walter J. Ronan, R.A.M.C., Thomas Sheedy, R.A.M.C.(S.R.), Henry S. C. Starkey, R.A.M.C.(T.F.), Reginald S. S. Statham, R.A.M.C., Ralph W. E. Stickings, R.A.M.C.(T.F.), David Thomson, R.A.M.C., Raymond Verel, R.A.M.C.(T.F.), William L. Watson, I.M.S.

Honorary Captain Charles H. Milburn, R.A.M.C.(T.F.).

Temporary Captains: (Brevet Major) William J. Tulloch, R.A.M.C., (temporary Lieut.-Colonel) Edward A. Gates, R.A.M.C.

Temporary Captains (acting Lieut.-Colonels): Hugh S. Davidson, R.A.M.C., Ryder P. Nash, R.A.M.C.(T.F.), Henry Stokes, R.A.M.C., Charles J. West, R.A.M.C.

Temporary Captains (acting Majors): William Anderson, R.A.M.C., William B. G. Angus, M.C., R.A.M.C., Mark Bates, R.A.M.C., Lennox R. Broster, R.A.M.C., Bertram James Collingwood, R.A.M.C., Howard W. Gabe, R.A.M.C., John A. Jones, R.A.M.C., Frederic P. Joscelyne, M.C., R.A.M.C., Richard Ernest H. Leach, R.A.M.C., Reginald H. Lucas, M.C., R.A.M.C., Colin MacKenzie, R.A.M.C., Robert Massie, R.A.M.C., Francis H. Moxon, R.A.M.C., Arthur E. Rayner, R.A.M.C., James F. H. Roberts, R.A.M.C., Herbert H. Sampson, M.C., R.A.M.C., Harold W. Scawin, R.A.M.C., Edward J. Selby, R.A.M.C., William H. Stott, R.A.M.C., Robert Henry Strong, R.A.M.C., Douglas C. Taylor, R.A.M.C., Eric S. Taylor, R.A.M.C.(T.F.), John J. Thomson, C.A.M.C., Philip N. Vellacott, R.A.M.C., Frank W. Wesley, R.A.M.C., Frederick B. Winfield, R.A.M.C.

(To be continued.)

Scotland.

HONORARY DEGREES.

THE University of Aberdeen proposes to confer the honorary degree of LL.D. upon Emeritus Professor Cash, recently retired from the chair of materia medica in the university; on Emeritus Professor Japp, who retired from the chair of chemistry five years ago; and on Dr. John Scott Riddel, Red Cross commissioner in Aberdeen during the war. The same honour has been offered also to Admiral Sir Roger Keyes, and Mr. W. H. Taft, ex-president of the United States.

COUNTRY HOMES FOR YOUNG CHILDREN.

The Children's Country Home, established on the outskirts of Glasgow for the care and treatment of physically weak children under school age of certain districts of the city, has accommodation for twenty-five. At a recent inspection Dr. Chalmers (M.O.H. Glasgow) said that the day was coming, probably very soon, when the local authority would follow in the footsteps of the pioneer workers who had established this small home. Similar institutions, he considered, should be attached to every district in the city. Bailie Stewart said that the corporation had spent over £7,000 on child welfare during the past year, and would continue to develop the work in that direction. He hoped that public opinion would learn to insist upon the eradication of the causes of rickety and weak children by the provision of proper housing accommodation.

HAIRMYRES TUBERCULOSIS COLONY.

Hairmyres Colony, established by the Middle Ward of Lanarkshire as part of the scheme for the treatment of persons suffering from tuberculosis, was opened by the Secretary for Scotland on June 14th. By an arrangement with the Insurance Committee for Lanark, the local authorities some time ago undertook the treatment of all insured persons, the Insurance Committee paying over the funds available for sanatorium treatment. By using a scheme already in existence as a nucleus, rearrangement of the work, and by certain extensions and alterations, it was hoped to meet all requirements, but the provision proved insufficient, and it was necessary to do something more in the interests of the patients, of their relatives, and of the community. The system by which a man was taken into a sanatorium for, say, three months, and then discharged to his former occupation, was extravagant, as he soon returned to the care of the local authority. The facts showed that mental and physical work was an integral part of the treatment, and that this must be carried on under medical supervision. The scheme, when complete, will include local dispensaries, sanatoriums, and the colony. The dispensaries are to be suitably distributed throughout the area, the sanatoriums are well placed to meet the needs of the district, and the colony is in a central position. It is intended for selected adult cases on discharge from the sanatorium and for children. There will be an open-air school for the children, and for the adults farm training, market gardening, poultry farming, bee keeping, forestry, and industrial workshops were also provided, but especially the first named. The colony has possession of 300 acres at an elevation of 580 feet, and will provide accommodation for from 250 to 300 patients in a male pavilion, a female pavilion, an observation block, and a children's pavilion. The pavilions are of the butterfly type, as at Edinburgh, and are erected on the ridge of a gentle slope facing south and sheltered by belts of trees on the north. All the pavilions have two stories and a basement; the observation block, which provides for seven male and seven female patients, has one story. In addition to arable farming stock-rearing has been started by the establishment of a fine herd of non-tuberculous Ayrshire cows; calves will be reared in sufficient numbers to maintain the herd without purchase. A forestry scheme is being undertaken by arrangement with the Development Commissioners, and men who have proved their fitness to continue what they have learnt at Hairmyres will have an opportunity of working at forestry camps at a wage sufficient to enable them to continue for a further period of curative work, in the expectation that ultimately they will be able to get ordinary forestry work in this country

or in the Dominions. The resident physician is Dr. A. H. Macpherson, formerly superintendent of the Royal Victoria Hospital Farm Colony, Edinburgh.

Ireland.

IRISH PUBLIC HEALTH COUNCIL.

DR. E. COFFY BIGGER has been appointed chairman of the Consultative Council for Ireland—the "Irish Public Health Council"—under the Ministry of Health Act. The Act provides that the chairman and three of the members shall be registered medical practitioners, one of them a woman, and one of them holding a diploma in public health. The other members are the vice-president and two other commissioners of the Local Government Board for Ireland, the chairman and two others of the Irish Insurance Commissioners, the Registrar-General for Ireland, and six other persons having practical experience of matters relating to, or incidental to, or affecting the health of the people. Dr. Bigger is a native of Belfast, was educated at Queen's College there, graduated M.D. in 1883, and at the time of his appointment in 1900 to be medical inspector of the Local Government Board was physician to the Infectious Disease Hospital and the Ulster Hospital for Children and Women. He was the medical member of the Viceregal Commission on Poor Law reform in Ireland (1903-6). In 1912 he acted as medical commissioner of the Local Government Board in Ireland during the absence of Sir Thomas J. Stafford, and was closely concerned in organizing the administration connected with tuberculosis schemes, and also with the schemes for child welfare. He was the author of a report for the Carnegie United Kingdom Trust on the physical welfare of mothers and children in Ireland, and was largely responsible for the drafting of the Medical Treatment of Children Bill for Ireland. On the retirement of Sir Thomas Stafford in 1916 Dr. Bigger became medical commissioner; his extensive and valuable experience in departmental work in connexion with public health makes his appointment to his new office a good augury for the future, while his courtesy and urbanity have made him one of the most popular officials.

ULSTER MEDICAL SOCIETY: ANNUAL DINNER.

The first annual dinner of the Ulster Medical Society after the war was held in the Medical Institute, Belfast, on June 12th. The President, Dr. James Colville, Belfast, occupied the chair, and between seventy and eighty sat down. The following toasts were proposed: "The King," by the President; "Our Representative in Parliament" (Sir William Whitla), by Professor Lindsay, F.R.C.P. Lond., who by permission of the council of the Ulster Medical Society took the opportunity of presenting Sir William Whitla with a beautiful silver cup from the medical and surgical visiting staff of the Royal Victoria Hospital, from which Sir William has just retired. Sir William replied. "Our members home from active service," by Professor Symmers, who emphasized the good work, the self-sacrifice, and sterling conduct of the Ulster contingent, and paid a worthy tribute to the memory of those Ulster men who are now buried on the Flanders and other fronts. Colonel A. Fullerton, C.B., C.M.G., and Major T. Houston, O.B.E., who replied, said that all credit was due to the younger men who so often carried their lives in their hand and suffered much hardship. "Our Guests," proposed by the President and responded to by the Vice-Chancellor of the Queen's University, Belfast, and by the President of the Northern Law Society. "The President," by Mr. Robert Campbell, F.R.C.S. Eng. Dr. Colville, in responding, proposed the health of the Honorary Secretary, Dr. C. G. Lowry, Belfast, to whom, he said, all present owed a debt of gratitude for his exertions both in organizing the meetings and in the arrangements for the dinner. Dr. Lowry responded.

THE fourth meeting of the Medical Congress of the Republic of Colombia will be held in the historic city of Tunja in August, 1919, under the presidency of Dr. José María Sojo Carmona. The work will be distributed among eight sections. One of them is to be devoted to the indigenous medicinal plants, the mineral waters, poisonous animals, and climatology of Colombia.

Correspondence.

"SUDDEN DEATH UNDER AN ANAESTHETIC."

SIR,—In your last issue (June 14th, p. 739) Dr. H. S. Gabbett of Eastbourne records another instance of sudden death under anaesthesia induced for the enucleation of tonsils by the dissection method. His case resembles many others which have proved fatal during the different methods of "operation for tonsils and adenoids" in that the patient was a young, "well-grown," and comparatively speaking healthy individual.

In his concluding paragraph Dr. Gabbett asks two questions which I would like to answer. My replies will not afford a scientific explanation of such a tragedy as he records, but the means of obviating such a disaster are, at least, the outcome of ripe experience which has not been acquired without having paid the price of such mental suffering as all of us must endure when we have been the principal actors in such a scene as "a sudden death under an anaesthetic."

1. To his first question I should answer that there is no danger in the operation of enucleation of tonsils assuming it is done with reasonable skill, but there is very real danger if anaesthesia is induced by chloroform, or by any mixture in which this drug is an important factor. On the other hand, the risk of the operation will be reduced to a minimum if deep narcosis is brought about by "open ether" preceded by a hypodermic injection of $\frac{1}{100}$ grain atropine, the object of the latter being to check the excessive secretion of mucus which would otherwise be induced by the ether vapour. The ether anaesthesia must be pushed until the pharyngeal reflexes are abolished, and the respiratory movements are quiet and regular in their rhythm. Then the patient may be gagged, and while the actual operation is being performed anaesthesia may be maintained by chloroform administered through a Junker's inhaler. Under these circumstances the stimulant effect of the ether will not be destroyed by the depressing action of chloroform.

2. To his second question, whether the necessarily light anaesthesia given by a Junker apparatus and tube when the mouth is widely open is a source of peril, I reply that light chloroform anaesthesia is surely unwise for any operation, and especially in the throat, where the reflexes are notoriously sensitive and well developed. Furthermore, it is impossible to perform enucleation by dissection in a satisfactory manner unless the pharyngeal reflexes are abolished.

These statements are based on an experience of some twenty years of hospital and private practice; during this time I have seen eleven deaths under anaesthesia induced by chloroform, or a mixture of chloroform and ether. Three were in my own practice. I have never seen a death under "open ether" induction. For the purpose of substantiating the views above expressed I have looked through my private case-books for the last five years and find a record of 575 cases of tonsils "enucleated by dissection." I never employ any other method.

During this last-named period, with very few exceptions, "open ether," preceded by atropine, has been the anaesthetic used. I have not seen a single case of heart failure, and, incidentally, have only had two cases of post-operative haemorrhage; one was really "continued" bleeding; the second occurred on the seventh day after operation.

Hence it is that I hold the very strong conviction that, as a general rule, both surgeon and anaesthetist run a grave and unnecessary risk when they agree to the induction of general anaesthesia by means of chloroform, or any mixture in which that drug is a powerful factor.—I am, etc.,

HERBERT TILLEY, B.S., F.R.C.S.

London, W., June 16th.

SIR,—The case recorded by Dr. Gabbett appears to me to be an instance of cardiac fibrillation during light chloroform anaesthesia, the mechanism and frequency of which has been so ably demonstrated experimentally by Dr. A. Goodman Levy. It appears that there are two distinct ways in which a patient may cease to breathe during chloroform anaesthesia. There is the ordinary overdose, the clinical picture being a slow failure, the respiration

becomes diminished in frequency and volume, cyanosis develops secondarily, and finally, as in ordinary asphyxia, the heart fails. From practical experience I think that death from this cause must be very rare, even if the condition is not recognized until respiration has ceased. These patients recover with the aid of a little gentle artificial respiration and the administration of oxygen. The other way is a primary cardiac failure and the respiration fails secondarily. The clinical picture is quite different. Suddenly, generally during the induction, the patient becomes intensely pale, the pupils widely dilated, the radial pulse either extremely rapid and irregular or absent, according to the severity of the attack. Respiration continues in a somewhat gasping way for a few moments; frequently the exaggerated sighing inspiration is the first indication of the sudden cerebral anaemia. The patients I have seen recover from this condition have done so suddenly, and recovery has been due to measures directed to restore the cerebral circulation—that is, elevation of the legs and inversion. The colour returns, the radial pulse becomes once more palpable, and breathing starts again. Dr. Levy has shown experimentally in animals that this condition occurs during light and incomplete chloroform anaesthesia following some slight stimulus, and is due to fibrillation of the ventricle. The evidence is, I think, in favour of this being the cause of most of the fatalities under anaesthesia in the human subject. Deaths under anaesthesia are nearly always due to chloroform or its mixtures. According to reports of fatal cases, the patient has frequently been particularly strong and healthy. A very small amount of anaesthetic has been used, but during the induction or at the beginning of the operation the patient has either moved, phonated, vomited, or swallowed, showing a light degree of anaesthesia, and then suddenly died with the symptoms described above.

When the operation of enucleation of the tonsil was introduced by Mr. George Waugh profound anaesthesia with chloroform, with abolition of all reflexes, was advocated. In my own experience of the anaesthetics in a large number of these operations I have never seen a death with profound chloroform anaesthesia, but although it may not be dangerous under these circumstances chloroform anaesthesia sometimes looks rather alarming, and certainly requires very close and constant care, and is consequently a little difficult to manage in the darkened rooms used by some operators. Experiments with ether for this operation were conducted some time ago, and it was found that if a really profound anaesthesia is induced by a so-called "open ether" method—that is, using many layers of gauze and several ounces of ether and pushing the anaesthetic until the respiration begins to get shallow, the pupils widely dilated, and all the pharyngeal and laryngeal reflexes abolished—an absolutely motionless field of operation is obtained, which has always been insisted upon for this operation. With ether this condition is obtained without the slightest anxiety; the patients are pink and rosy.

The chief point raised by this discussion seems to be the possibility of enucleation of tonsils without danger. Whatever the scientific explanation, we know that deaths do occur with deplorable frequency under chloroform. Why, then, induce anaesthesia with chloroform or its mixtures in any case in which it is possible to avoid it?—I am, etc.,

London, N.W., June 16th.

FELIX ROOD.

SIR,—To Dr. H. S. Gabbett's request for information whether there is any special danger in the operation of enucleation of tonsils, I would reply that we may assume enucleation of the tonsils to be a major operation and subject to great risks which cannot be entirely obviated. The question arises whether the slight gain from complete dissection of the tonsils is worth the extra risk in what is, after all, a minor malady. I am certain that this operation is passing out of fashion amongst the experts. As your correspondent states, several deaths have been recorded. There are many more which have not been published.

The operation, to be satisfactory, is fairly prolonged, and involves much interference with free respiration whilst the tonsils are pulled inwards, in addition to the traction on the nerves of the neck. Here occurs a combination of dangers. Many of these patients are of lymphatic type

and very susceptible to chloroform, especially with respiratory obstruction. The lungs are filled with chloroform with imperfect aëration. Practically all embedded tonsils can be enucleated by incision of the mucosa and then pulling through a blunt guillotine of suitable size, thus reducing the danger period. During these short manipulations ether should be substituted for chloroform. There will then be little danger of syncope.—I am, etc.,

Manchester, June 16th.

WILLIAM WILSON.

SIR,—There is nothing unusual in the conditions attending the death that Dr. Gabbett reports. It is the old story of an intermittent and insufficient administration of chloroform followed by fibrillation of the ventricles, the same sequence that occurs in practically all fatal cases of sudden chloroform syncope. For more full information I can refer Dr. Gabbett to my paper on this subject in the *Proceedings of the Royal Society of Medicine*, 1914, vol. vii (Section of Anaesthetics).

Light chloroform anaesthesia in certain operations is a technical facility which does not justify the risk entailed, and the surgeon who requisitions it assumes a heavy responsibility. Such an operation as enucleation of the tonsils can be performed without risk of sudden cardiac failure under (1) the full and continuous administration of chloroform, (2) the administration of ether without regard to the depth of anaesthesia. It is perhaps sufficient to add that the admixture of ether with the chloroform is no safeguard against sudden death.—I am, etc.,

London, W., June 16th.

A. G. LEVY.

SIR,—May I draw attention to an article, "On the probable causes of fatalities at the tonsil-adenoid operation," which I contributed to *The Practitioner*, November, 1917? In this I pointed out that although fatalities are not common, there is, besides the possibility of shock and of haemorrhage, special liability to dangers which do not arise during operations of far greater surgical importance. Therefore, without special experience on the part of both operator and anaesthetist, and perfect co-operation, difficulties and dangers are almost certain to occur. I mentioned that "in some, breathing stops at once when the gag is opened widely enough, and the operation has to be done in snatches, if drawing the tongue or epiglottis well forward does not effect improvement." This is apt to occur in patients with ill-developed lower jaws. Lightness of anaesthesia will not make amends for prolonged obstruction of the respiration, and for the effect of such upon the heart and circulation.—I am, etc.,

London, N.W., June 16th.

J. D. MORTIMER.

SIR,—A surgeon who is much indebted to the skill of many anaesthetists may perhaps be permitted to place his experience on record as a slight tribute to them and an answer to some of the questions asked by Dr. H. S. Gabbett. In a series of 18,000 operations for enucleation of tonsils by dissection performed by the writer no death has occurred from the anaesthetic, although the operation has been performed deliberately on many children suffering from active heart disease. Some years ago one patient died on the table as the result of a combined operation for the removal of a large mass of breaking down glands from the neck and the enucleation of tonsils. The patient died from exhaustion at the end of a very long and tedious operation. It was clearly an error of surgical judgement to have attempted the tonsil operation at the same time, and the fatality could in no way be attributed to the anaesthetist or the anaesthetic. Until quite recently all these operations have been performed under a deep chloroform anaesthesia which has been maintained throughout the whole course of the operation. The Junker apparatus, containing pure chloroform, easily permits a depth of anaesthesia to be maintained so that the pharyngeal reflexes are abolished, and the surgeon has a perfectly still field of operation for his work.

This is an essential that I have always insisted upon; its justification appears to be found in the figures already quoted. Whether they also supply a satisfactory answer to Dr. Gabbett's question, "Is there special danger in the operation of enucleation of tonsils?" is an issue that must be left to the judgement of the individual reader.

To attain deep chloroform anaesthesia the dangerous zone of light anaesthesia must always be traversed. Modern research has shown how uncontrollable this danger is, and therein is inherent the objection to the use of chloroform under any circumstances in surgery. But the resourcefulness and skill of the anaesthetist has circumvented that danger by developing the administration of open ether to such a pitch of perfection that the operation of removal of tonsils by dissection can be performed under it with the perfect surgical condition of an immobile pharynx. Under such a condition the surgeon can have no apprehension for the safety of his patient, and no excuse for failure but himself. My experience of open ether for this operation is limited to the last eighteen months or so, but it is sufficient to engender the feeling that anaesthetists have once more placed the patients and surgeon alike in their debt.—I am, etc.,

London, W., June 16th.

GEORGE E. WAUGH.

THE INDIAN MEDICAL SERVICE.

SIR,—As you have told me that you intend to publish in your columns the remarks that I had the privilege of making at the I.M.S. dinner last week, and as the spontaneous call that I should speak on that occasion came from the officers on the active list of the I.M.S., I ask leave to add a few remarks to what I then said. The attitude I then took up was no political move but an honest expression of the position as I see it. I know from the many letters I have received that my brother officers appreciate that I have no axe to grind, that I have nothing to gain and nothing to fear, and that my one desire is to work in their interests and in those of the country they are so magnificently serving. I especially wish to assure them that the idea, which appears to be prevalent among them, that the British Medical Association feels that it has done its work and is now resting on its oars, is utterly mistaken. We are watching every move of the game with the closest attention, and we are taking steps to obtain the most reliable information on every point. To act precipitately, no matter how black things might look for us, would be to give our case away. We are a service of officers and gentlemen, and those who deal with us must never have the least reason to doubt that we shall play the game with them to the end. Those who criticize most fiercely the actions of the principals in this drama perhaps fail the most to appreciate how great are the difficulties which beset every step of the way.

During the years that I have had the privilege of representing the Indian Medical Service in the councils of the British Medical Association I have, consistently from one and all, met with unwavering sympathy and support. The unexpected and very flattering resolution passed by the Council at its last meeting, after receiving the report on the Indian Medical Service, has only served to intensify my desire and determination that every action we take on behalf of the service should be such as to justify the confidence which has been so ungrudgingly given us in the past. The whole weight of the Association is behind us, its sympathies are warmly with us, and it is up to us to carry this matter through in such a way as will, if possible, increase that sympathy and make that support doubly sure. I know the many difficulties of the officers of the service at the present moment, and I have had the honour of bringing them personally before Mr. Montagu's notice. However hard it may be, I would ask once again for trust and patience.—I am, etc.,

R. H. ELLIOT, M.D., Lieut.-Colonel I.M.S. (ret.),
Chairman, Naval and Military Committee, British
Medical Association.

London, W., June 15th.

INSURANCE TERMS AND CONDITIONS (M. 25).

SIR,—Dr. Brackenbury is to be congratulated on the Report (M. 25) which he, with the sanction, it appears, of his committee, has evolved. Like the Walrus and the Carpenter, he and the Commission take us gently by the hand, and would lead us to our fate.

"The time has come," the Walrus said, "to talk of many things" . . .

Certainly Dr. Brackenbury talks all over the field, and so nicely, too, with such a happy blend of formality and friendliness! Of course, all he says is only tentative.

"Neither the profession nor the Government are committed to the . . . suggestions." (Section 1, M. 25.)

"No hurry!" said the Carpenter. They thanked him much for that.

Section 3 is very disarming: "The question of the amount of remuneration is to be left entirely on one side for the moment." Then follows the "great glittering scheme" for the new model army of the medical profession, set forth in semi-officialese that is so like the real thing that one turns back now and then to the first page to make sure that the heading is "British Medical Association" after all. (It came, by the way, in an O.H.M.S. envelope. How nice and harmonious of negotiating parties to work together like this, to be sure!)

Sir, has it really come to this, that we, a great learned independent profession are to be led in bondage? Is a third party, the Government inspector, to intervene at any turn between us and our patients? Are we to be told in sonorous tones that we really enjoy a unique privilege (Section 82) because "the employer," meaning the Commissioners, "is obliged to accept the offer of any qualified person"? What new doctrine is this that would supplant the time-honoured relationship between a doctor and his patient? Is the Government, then, the master, the doctor the workman, the patient the mere material worked upon? What type of practitioner is this system going to develop? The inspector-pleasing type, the report-writing, the docketing, the indexing? The whole business lacks the natural touch. It is developed on a misunderstanding of fundamentals. Its father is club practice, its mother is State medicine, and its sponsor is Dr. Brackenbury.

National Health Insurance might have meant that a man could insure with the state for the payment of his doctor. What this report means is that the state shall be the employer, the doctor the contractor, paid so much a head, supervised by an army of inspectors, specialists, referees, and commissioners.

The capital error lies in the system of capitation payment. The worst of the situation in which we find ourselves is that a stupid dread of accountancy has driven us deep into the acceptance of this capitation system; and we are committed, not only to it, but to clerical work more exacting by far than any accountancy for the purpose of mere tariff payment—clerical work which will want a good deal of thinking about, for not only is it to be "most valuable from the point of view of national science and statistics," but it is also to "be so arranged as to afford a continuous individual history of illness," and to do so by means of such subtle language that this history will not necessitate "any real violation of professional secrecy." Shall we have to rub up our Greek?—or perhaps the docket clerks will not know Esperanto.

It must be seriously admitted that M. 25 reveals the future of the insurance system with all its menace, that it indicates a logical development of the system we accepted or were forced into in 1912, that it puts the best complexion on the scheme and is an honest attempt to elaborate and improve it from the point of view of a bureaucrat. But it may be asked: Is our English hospital system of supplying consulting services so very bad, so very inadequate? Are not cottage hospitals and local infirmaries springing up and capable of further development, especially with a little (and not too much) state help? Can they not supply some of these much-talked-of specialist services?

What is wanted is to put every one within reach of first-rate treatment. Securely paid private practice, supported by some system of insurance, together with a development of hospitals, large and small, would do this far more effectually than all these horrible regulations which are foreign to the very spirit and atmosphere of medical work.—I am, etc.,

Holmes Chapel, June 12th.

LIONEL JAS. PICTON.

SIR,—It is good to know from Dr. William Hodgson's letter in your issue of June 7th, p. 724, that one member of the Insurance Acts Committee protests against M. 25. "Peradventure there be one righteous within the city." But shall destruction be stayed for one's sake?

Had this appalling document emanated directly from the Commissioners without consultation with a body supposedly representing practitioners' interests, it would have been at least understandable as a statement of what, from the administrative standpoint, may be desirable

alterations, and it would have remained for us wholeheartedly to resist the majority of the proposals. But published as it is, with the full parental blessing of our representatives, what is one to think? And, incidentally, what inducement is there to trust such a body with the management of the Defence Fund? Indeed, after M. 25, what is there left to defend?

For the purpose of brief criticism, the essence of the report from the panel practitioner's point of view is contained in the three proposals following:

- (1) Alteration of lists.
- (2) Subsidizing opposition to the panel practitioners at the victim's expense.

It must surely be obvious that (1) and (2) are but the first step towards the annihilation of all capital values in practices. When, with the early inclusion of dependants in the medical benefit scheme, all private practices in industrial areas shall have disappeared, the amount of a practitioner's income will depend not on his ability or initiative, but solely on the available number of young practitioners ready and willing to be set up in practice on very easy terms, and in a wonderfully short time a dead level of income will be attained. Where, then, shall a man look for the return of the money he invested in buying the goodwill of his practice? In brief, what is all this but the disadvantageous side of State service without the compensations of regularized hours of work, fixed holidays, and pensions?

- (3) Constituting certain payments a prior charge on the pool.

This proposal does not, of course, affect districts which at present elect to be paid on the attendance basis, but the vast majority of areas have chosen the capitation basis, and what reason of any weight has been or can be adduced for the callous betrayal of our one cherished security?

When I took service under the Insurance Act I accepted for a certain payment the risk of sickness incidence amongst my patients, but I am most unwilling to accept the risk of my neighbour's psychology in the matter of the need amongst his patients for minor operations, anaesthetics, etc.

Looking at the report as a whole and disregarding for the moment the suggestions for alterations in certain administrative details (Summary, pars. x, xi, xii) which one might be pardoned for thinking the Commissioners capable of devising without the weighty advice of the Insurance Acts Committee, I shall be sincerely glad if any member of the Insurance Acts Committee will indicate a single item where the interests of the established panel practitioner have been safeguarded, much less forwarded.

May I, Sir, express the hope that your correspondence columns will soon show evidence of a more lively interest in the question than has been hitherto apparent? Is the present lack due to apathy or dismay? Is the profession asleep or suffering from concussion?—I am, etc.,

Liverpool, June 17th.

R. PATERSON.

SIR,—I received to-day a memorandum by the Medical Political Union on the report M. 25 of the Insurance Acts Committee. I do not know if this is the product of the Council of this Union after due deliberation or whether it is the effort of the manager of the concern, Dr. Welply. It, however, is a most offensive effusion, and does not help one in any way to digest the report referred to. It complains that the question of remuneration is eliminated and that the reason for this is difficult to explain. I think this is clearly indicated in the report—that the services which may be required are *sub judice*, and that until these are decided upon it is impossible to discuss the remuneration.

The memorandum very offensively alludes to the leaders of the profession—"consultants, experts, and specialists," the "high brows of the profession"—and wonders why these were called in at all. Surely every man in the profession is interested in any legislation which affects the profession. If a large body of the public is to be included under the Insurance Act, this must affect non-panel men, and if consultants are to be called in under the panel scheme, this must affect consultants. Besides, I think it is very necessary that the men at the head of the profession should be consulted in the matter; they would be able to give unbiased advice on the very important questions which are to come up for consideration.

The author of this circular complains that bodies which act specially for panel practitioners (meaning, I presume, the Medico-Political Union) were not asked their views—were indeed told that “their views were not wanted.” I should certainly say this is not surprising when one reads the literature evolved and distributed gratis by the Union.

I certainly believe that “unity is strength,” and that if the British Medical Association does not represent the views of the profession it is due to the apathy of the general practitioner, who should be stirred up. At a well attended meeting of the panel practitioners of the county of Carmarthen it was unanimously agreed that the 3d. levy should be raised, and the general feeling was that we should not dissipate our forces but stick to the Association.—I am, etc.,

Llanelli, June 9th.

JOHN D. DAVIES.

MEDICAL APPOINTMENTS UNDER THE MINISTRY OF PENSIONS.

SIR,—With reference to your remarks upon a circular recently issued by the Director-General of Medical Services, Ministry of Pensions, you appear to have been informed that a certain sentence had been misconstrued by some medical men employed upon the boards into a reflection upon the nature of the services they have rendered during the war.

Without any such misconception it is not to be wondered at that some have seen in that circular a possibility of personal financial disaster. In some cases civil practitioners who, although over military age, offered their services to their local War Committees have given up their practices, and every other source of professional income, and have even moved their homes in order that they might help to carry on the work of the Pensions Boards. With the proviso that the maintenance of efficiency is the prime consideration, the circular in question directs that civil practitioners shall be gradually replaced by demobilized officers. It is poor consolation to a man between 50 and 60 years of age, faced with a sudden diminution of his income by one-half, and a further possibility of his services being dispensed with altogether, to be told that his work has been done satisfactorily.

Of course it was understood that there was no real security of tenure, but it was at least known that the work of the boards would have to be carried on by some one for a very considerable time, and the idea was, in some instances, encouraged that efficient service would probably mean retention of office.

All honour to the overseas men. It was expected that, in return for what they have done, they would have the preference in new appointments. If, however, the circular from the Ministry of Pensions really means that civil practitioners shall be displaced as soon as possible, and if other ministries and Government departments act in the same way, one question is surely justifiable: What avenue will be left open for the senior man who has disposed of his practice, and whose age is the only reason preventing him, too, from having been an overseas man? Some source of income is necessary even for him. Suggestions on this point will be gladly received by—Yours, etc.,

June 10th.

“SENEX.”

SIR,—I see in the JOURNAL of June 7th, p. 716, the circular letter issued by the Director-General of Medical Services from which it is evident that those of us who were too old to serve in H.M. Forces, and who were anxious to do so, will not receive any favours. At the same time, I think I can show we have done our bit.

In the great majority of cases the practices of those who were young enough to serve have been looked after for them, and, in addition to that, many of us have since November, 1917, acted on medical recruiting and pensions boards, thereby releasing army men for other service at home and abroad. I need not go into the reasons which caused these boards to be handed over to civilian doctors, but their conduct since the change has fully justified it. The doctors left at home have been hard worked, while it has been frequently stated that many of those who joined up have had a soft job; men have also gone into khaki without ever leaving their homes or their practices.

The sting of the letter lies in the statement that “attendance on medical boards is not to count as war service.” Was it peace service?

You say that you have the authority of the Ministry for saying that it recognizes to the full the excellence of the work done, which recognition takes the form of shunting them off the boards on which they have done good work, and with the procedure of which they are thoroughly conversant.—I am, etc.,

MEMBER OF MEDICAL RECRUITING AND PENSIONS BOARDS.

June 10th.

OFFICIAL FEES FOR MEDICAL SERVICES.

SIR,—Is it not time that something were done towards standardizing the medical fees paid by Government departments and by local authorities? A few examples will suffice:

1. One Government department pays 2s. a head for “medical inspection”—that is to say, for physical examination of candidates for certain posts.
2. Another department offers the same remuneration, and gives a list of about twenty-two details which are to be noted.
3. On reference to the *Medical Directory* I find that the Government unblushingly offers certifying surgeons under the Factory and Workshops Acts such fees as 2s. 6d. for visiting a small factory, and 7s. 6d. for visiting one employing 100 hands.
4. A certain education authority pays a fee of 2s. 6d. to the doctor who will examine a candidate as to his proficiency in first-aid work.
5. A recently established body, the Local War Pensions Committee, offers as an adequate fee for a medical referee under the Ministry of Pensions the sum of 5s.

Is it any wonder that the Government cut down notification fees from 2s. 6d. to 1s. or less when it appears to think that the value of a medical “opinion” is about 2s. 6d.? Police fees, police court, quarter sessions and assize court fees all need revising.

Having a personal interest in one of the Government departments to which I have alluded I applied some time ago for a reconsideration of the scale of fees, which, as I pointed out, is very low. I did this by way of protest, knowing pretty well what sort of reply I should get. In due course the reply came, and it was to the effect, first, that the amount of work in that particular branch in my district was so small that it was not worth while to go into the matter; and, secondly, that, seeing that no complaint as to fees had been received from the town of —, where there is a good deal of this particular work, my complaint was scarcely reasonable. That is as far as individual effort is likely to get; the question is, does the British Medical Association consider these fees adequate, and, if not, can it do anything to improve matters?—I am, etc.,

Plymouth, June 1st.

CHARLES J. COOKE.

SALARIES OF MEDICAL OFFICERS OF HEALTH.

SIR,—In reference to the post of medical officer of health for Bethnal Green, recently advertised at a commencing salary of £750 per annum, it must be a matter of extreme regret to metropolitan medical officers that such an advertisement should have been allowed to appear in the JOURNAL of the British Medical Association.

Before the war the Local Government Board refused to sanction an appointment for a London borough at a salary under £600, and if the British Medical Association really intends to promote the welfare of its M.O.H. members and be consistent, it should enforce its resolution concerning the 33½ per cent. advance and not publish these posts at a less rate; £800 (£600 plus 33½ per cent.), a price now offered for the lower appointments in the provinces, would thus be the absolute minimum salary.

It is to be hoped that the Local Government Board will be approached on the matter and that the appointment will not be sanctioned, otherwise a very retrograde step will herald in the new Ministry of Health.

No medical officer of health can live in London at the present time, do his duty, and keep up the dignity of his position at a less salary than £1,000 per annum, and the sooner the Ministry of Health is made acquainted with this fact the better, for it is appalling to think of the value set upon the services of highly qualified medical men in some of the London boroughs in the past.

If it is essential that London health should be strictly guarded, then only medical men of the highest standing should be appointed. One weak link in the chain of the metropolitan boroughs may mean disaster and disease

throughout London, especially as regards diseases connected with the war.—I am, etc.,

London, June 17th.

MEMBER.

We are obliged to our correspondent for calling attention to this matter; the position seems to us quite clear. The minimum salary approved by the Local Government Board before the war being £600 a year, the minimum salary at the present time, according to the resolution of the Association, should be not less than £800.

Obituary.

SIR EDWARD STIRLING, C.M.G., M.D., F.R.S.,

Professor of Physiology in the University of Adelaide.

BRIEF mention was made of the death of Sir E. C. Stirling in our issue of April 5th. We have now received the following biographical notice from our correspondent in Adelaide:

Professor Stirling did not live long to enjoy the knighthood he received in 1917. He contracted an illness when out duck shooting on January 1st, 1919, when the temperature was 105° in the shade. His heart suddenly failed, and death occurred on March 20th.

Edward Charles Stirling was born at Strathalbyn in South Australia in 1848, and educated at St. Peter's College, Adelaide. He was one of a group of young men who, in the mid-sixties, left South Australia for Cambridge, and mostly went to Trinity College. Before entering there he spent a year or more in Germany and France. In 1869 he graduated as B.A. with honours in natural science. Whilst working for his degree he also commenced his preliminary medical studies, but subsequently he migrated to St. George's Hospital. In 1872 he became M.R.C.S., and in the following year he took the M.A. and M.B. at Cambridge, and in 1874 the F.R.C.S. Eng. Appointed house-surgeon at St. George's he worked his way up to the staff through the usual gradations, finally becoming assistant surgeon and lecturer on physiology in the medical school, as well as on operative surgery; he was surgeon also to the Belgrave Children's Hospital. In 1877 he took a trip home to South Australia and married Miss Jane Gilbert, daughter of the owner of a well-known station and vineyard, "Pewsey Vale," returning to London with a view of settling there as a consultant; he proceeded to the M.D. in 1880, but nostalgia and other reasons decided Dr. and Mrs. Stirling to return to Adelaide, and they came out finally in 1881.

Here there was plenty of scope for a man of his energy and abilities. His experience as a lecturer on the subject pointed to him as the fit and proper person in the community to undertake the teaching of physiology in the newly-founded University of Adelaide. His high qualifications also secured for him the position of honorary medical officer to the Adelaide Hospital. His scientific tastes predisposed him to the study of anthropology. For a hobby he amused himself with gardening. Not content with four such strings to his bow, he entered Parliament, and served as a member for North Adelaide for three years, but was not re-elected.

As a physiologist it is not pretended that Dr. Stirling took any very high rank; he was rather a teacher of the elements of biology than an experimenter, or investigator at first hand; nor had the university the laboratories or the apparatus for intricate investigations. But it was Dr. Stirling's great merit that he first saw the possibility of establishing a curriculum for the M.B. degree, and that he persuaded a wealthy colonist, Sir Thomas Elder, to found a chair of anatomy. The Hon. J. H. Angus had already endowed a professorship of chemistry, and so the medical school started in 1885. When the first two years were drawing to a close, it was Dr. Stirling chiefly who arranged for the continuance of the course with the assistance of local talent as lecturers in the professional subjects. For thirty-four years he has been the acknowledged doyen of the medical school, and it was only recently, when the armistice was signed, that he announced his intention of finally retiring at the end of this year. In 1900 his lectureship was converted into a professorial chair. Much of his time was taken up, too, with his duties as a member of the University Council, and Dean of the Faculty, whether of Medicine, or of

Science. Soon after Dr. Stirling's appointment to the Adelaide Hospital the staff became differentiated into physicians, surgeons, and an ophthalmologist. For several years Dr. Stirling acted as surgeon and did most creditable work; he published reports of the first successful removal of a uterine fibroid by the abdominal route, making use of the serrenceud, and of the first successful vaginal extirpation of the uterus for cancer. His reports now seem perhaps almost meticulous in detail, but they are written in excellent style, a style that is sadly lacking in much of our modern medical literature; his Cambridge training here came strongly into evidence. Dr. Stirling did indeed once endeavour to start as a consulting surgeon; fortunately he was independent of practice, for the patients did not come. No one has yet succeeded in practice in Australia who has not worked his way up from the bottom of the ladder, for the laity care nought for M.D. (Cantab.) nor F.R.C.S. Australian practitioners are all "doctors." Dr. Stirling's main contribution to medical literature is the article in *Allbutt's System* on hydatid disease written in conjunction with Dr. J. C. Verco.

Stirling joined the South Australian Branch of the British Medical Association in 1881 and in 1888 was its President. In intercolonial medical circles his reputation gained him the position of President of the Section of Surgery at Melbourne in 1889 and President of the Congress held in Adelaide in 1905.

As an ethnologist and palaeontologist he was perhaps at his best, and the Adelaide Museum is a lasting memorial of his work as director of the institution; its ethnological department is second to none in the Australian States. In palaeontology his name will always be associated with the *Diprotodon*, the mammoth wombat which was restored from bones found in 1892 in the dry Lake Callabonna (otherwise Lake Mulligan) and the *Genyornis newtoni*, the rival of the moa, found in the same districts. His researches gained him the F.R.S. in 1893.

On such vexed questions as to whether the platypus lays eggs, and as to the phenomena attending the parturition and lactation of the ordinary marsupials, questions very dear to the bushman's mind, Dr. Stirling was concerned to the extent of dissipating some of their long-cherished fairy tales. Another biological triumph was his description of the *Notoryctes typhlops*, the blind marsupial mole. He was, too, something of an explorer. His ride across the continent with Lord Kintore's party may not have been of the highest importance to science, though it gained him the C.M.G. in 1892; but a far more important piece of work was his association with the Horn Expedition of 1894, when he acted as medical officer and anthropologist. His activities did not end here. He was connected with societies for the prevention of cruelty to animals and was president of the first State Children's Council. In Parliament he succeeded in carrying through the Act enfranchising the women of South Australia. He was conspicuous in his attempts to preserve the fast disappearing fauna of the State. His garden at Mount Lofty was at once his pride and one of the chief show places for visitors. When it is added that he was a good shot, and could ride camel or horse, that his delight was to do the work of a Jerry Cruncher in an aboriginal burying ground or to pay a visit to a whale stranded some 500 miles away from the city, some idea has been given of his many activities, his boundless energy, and full life.

SIR BARCLAY J. BARON, M.B., C.M. EDIN.,
Consulting Physician for Diseases of the Throat and Nose,
Bristol General Hospital.

We regret to record the death, on June 7th, at Clifton, of Sir Barclay Josiah Baron, the well known Bristol laryngologist. He was born at Devonport in 1857 and received his medical education at Edinburgh University, where he had a distinguished student career, winning prizes and medals and the Ettles scholarship. After taking the degrees of M.B. and C.M. in 1881 he continued his studies in Berlin, Strassburg, and Vienna. In 1883 he began practice in Bristol, and in the following year founded the department for diseases of the nose and throat at the General Hospital, of which he had charge for eighteen years. On resigning the post he was appointed consulting physician in this specialty. While at Edinburgh he had served as assistant to the professor of pathology, and he became lecturer on pathology, practical pathology, and morbid anatomy at the

Bristol medical school. In 1889 he was secretary of the Section of Laryngology at the annual meeting of the British Medical Association at Leeds, and five years later he was vice-president of the Section of Laryngology during the meeting at Bristol. For some years he was president of the Bristol Branch of the Association and of the Bristol Medico-Chirurgical Society. He also served as president of the British Laryngological, Rhinological, and Otological Association, and member of Council of the Laryngological Society of London. Among his contributions to the *Bristol Medico-Chirurgical Journal* was a paper giving an account of twenty years' experience in the treatment of diseases of the nose, throat, and ear, published in 1901. In recent years he took a leading part in the public affairs of Bristol. He was elected a councillor in 1913, and did excellent work on the Health Committee. Within two years he was elected Lord Mayor of Bristol, and was re-elected when his first term of office expired. During the war he took an active share in local undertakings, and served as honorary consultant for diseases of the ear, nose, and throat to the military hospitals in the Southern Command. During his second year of office as Lord Mayor he was created an alderman and a Justice of the Peace, and in 1918 he received the honour of knighthood. Sir Barclay Baron leaves a widow and one son, who is now in France, and three daughters. His death occurred with some suddenness a fortnight after an accident in which he fractured several ribs.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE examination for Part I of the diploma in psychological medicine will be held in October next, and for Part II in December. As already announced, lectures and practical work in preparation for these examinations will be given at the Psychological Laboratory, Cambridge, from August 2nd till August 30th. The Managing Committee recognize the Military Special Neurological Hospitals as institutions in which the clinical experience for Part II may be obtained. For particulars of the course application should be made to Dr. C. S. Myers, F.R.S., The Psychological Laboratory, Cambridge.

The following medical degrees have been conferred:

M.D.—A. P. M. Anderson, W. Shipton, R. A. Peters.
M.B.—F. G. Lescher, J. H. Jordan, E. L. C. Smith.
B.Ch.—R. T. Raine, E. L. C. Smith.

Dr. C. S. Myers has been elected to a Fellowship at Gonville and Caius College.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on May 28th.

Dr. Victor J. Woolley has been recognized as a teacher of pharmacology at St. Thomas's Hospital Medical School, and Dr. George E. Septimus Ward as a teacher of clinical medicine at the Middlesex Hospital Medical School.

In 1917 the Senate approved for the duration of the war an arrangement under which the East London College undertook the teaching of the first year medical subjects for students of the London Hospital Medical College; the Senate has now agreed that this transference shall be permanent.

Professor A. D. Waller, F.R.S., and Dr. S. Russell Wells were reappointed director and treasurer respectively of the Physiological Laboratory.

It was resolved to suspend for 1919 Section 10 of the regulations as to intermediate examinations (Internal Students) in as far as may be necessary.

(i) To allow war students who have presented themselves at a Special Intermediate Examination in Science, in Chemistry, Physics, Botany, and Zoology, and not passed the examination, to enter for the General Intermediate Examination in Science in September, subject to the general conditions laid down for the admission of war students to September Intermediate Examinations.

(ii) To allow war students who present themselves at a General or Special Intermediate Examination in 1919 and fail, but pass in one or more of the following: (a) Chemistry, or (b) Physics, or (c) Botany and Zoology, to be exempted, respectively, at the First Examination for Medical Degrees from examination in (a) Chemistry, or (b) Physics, or (c) Biology; no exemption in Biology at the First Examination being granted to a candidate who at the Intermediate Examination did not pass in both Botany and Zoology.

The following staff examiners for medical degrees for 1919-20 were appointed:

Anatomy: Dr. A. Macphail and Professor G. Elliot Smith. Bacteriology: Professor R. T. Hewlett. Chemistry: Dr. P. Haas and Professor J. M. Thomson. Forensic Medicine: Professor Matthew Hay and Dr. R. A. Lyster. General Biology: Drs. J. Stuart Thomson and J. T. Cunningham. Medicine: Professor Arthur J. Hall and Sir James Galloway (internal). Mental Diseases and Psychology: Drs. Robert H. Cole and W. H. B. Stoddart. Obstetric Medicine: Dr. G. F. Blacker and Dr. Comyns Berkeley. Pathology: Dr. Charles Bolton, F.R.S., and Professor H. R. Dean. Pharmacology: Professor H. J. Campbell and Dr. F. Ransom. Physics: Drs. W. Makower and F. Lloyd Hopwood. Physiology: Professors E. H. Starling, C.M.G., F.R.S., and J. S. Macdonald, F.R.S. State Medicine: Drs. Richard K. Brown and W. G. Savage. Surgery: Mr. V. Warren Low, C.B., and Mr. James Sherren, C.B.E. (internal). Tropical Medicine: Dr. C. W. Daniels.

The following are among the further appointments to the Senate for 1919-23 by the bodies indicated.

Convocation (Medicine): Dr. T. D. Lister, vice Sir Thomas Barlow. Convocation (Science): Dr. S. Russell Wells (reappointed). Royal College of Physicians of London: Professor S. H. C. Martin, F.R.S. (reappointed). Royal College of Surgeons of England: Sir Charles A. Ballance, K.C.M.G., C.B., M.V.O., vice Sir Alfred Pearce Gould, K.C.V.O., C.B. London County Council: Sir William J. Collins, K.C.V.O. (reappointed).

Professor G. Elliot Smith has been admitted to the Faculties of Medicine and Science.

The following are among the examiners appointed for the final examinations in the Faculties of Arts and Science, the chairmen of the respective boards being indicated by an asterisk:

Human Anatomy and Morphology: J. P. Hill (University College); 'J. E. S. Frazer (St. Mary's Hospital Medical School), together with the external examiner. Physiology: W. M. Bayliss and C. E. Spearman (University College), 'W. D. Halliburton and O. Rosenheim (King's College), J. S. Edkins (Bedford College), F. A. Bainbridge (St. Bartholomew's Hospital Medical School), M. S. Pembrey (Guy's Hospital Medical School), together with the external examiner.

Forms of entry for an additional first examination for medical degrees which begins on September 22nd, 1919, must be sent in to the Academic Registrar by August 13th. An additional second examination will begin on December 2nd.

UNIVERSITY OF ST. ANDREWS.

At a meeting of the University Court, on June 10th, the resignation of Dr. David McEwan from the chair of surgery, which he has held for twenty-one years, was received, as also the resignation of Professor C. R. Marshall from the chair of materia medica, to which he was appointed in 1899, he having been appointed professor of materia medica in Aberdeen. It was reported that the bacteriology department at University College, Dundee, was now being equipped under the direction of Dr. W. J. Tulloch, lecturer in bacteriology, and that it was proposed to carry out in that laboratory the examination of material submitted by local public health authorities under venereal disease schemes.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary comitia of the Royal College of Physicians of London was held on June 13th, when the President, Sir Norman Moore, Bt., was in the chair.

Licences to practise physic were granted to Simon Kelly, Manchester, and Charles Albert Lang, Toronto University College and King's College.

The President announced the following appointments to lectureships:—The Goulstonian—Dr. J. L. Birley, O.B.E.; the Horace Dobell—Sir William Leishman, K.C.M.G., F.R.S.; the Lumleian—Sir John Rose Bradford, K.C.M.G., F.R.S.; and the Croonian for 1921, Dr. F. L. Golla.

A letter was received from Dr. Addison inviting the college to nominate one member of a small panel to assist him in the formation of a consultative council to the Ministry of Health. On the motion of Sir F. W. Mott, seconded by Dr. R. Crawford, the President was asked to accept the nomination, and consented.

Medico-Legal.

MENTAL EXAMINATION OF A MURDERER.

A REVIEW of the expert medical evidence in the case of the man Beckett who has been sentenced to death for the murder of a family in the East End of London would certainly tend to the conclusion that the crime was the product of an unsound mind. The family history of the man reveals a strongly neuro-pathic taint, he shows evidence of definite congenital mental deficiency with only rudimentary social and moral development, he has suffered from epileptic fits since the age of twelve, and his conduct appears to have been influenced by the morbid promptings of auditory hallucinations. Furthermore, it is justifiable to assume that all these morbid traits had been aggravated by the illnesses and sufferings the man experienced as a prisoner in the hands of the Turks. The personality would thus seem to be quite definitely psychopathic, and to contain especially those abnormal features which find expression, almost inevitably, in acts of uncontrollable violence. It is a matter of common experience that impulsive episodes are of frequent occurrence in the epileptic wards of any mental hospital, and such outbursts are not necessarily committed in a condition of epileptic automatism but are the expression of morbid irritability and tension in which the patient is clearly unaccountable for his acts. It is only the care and control which an institution provides which prevents such episodes from issuing in a serious outcome.

In view, therefore, of the well established tendencies of the mentally enfeebled epileptic and of the unanimous evidence in this particular case from those who are best qualified to estimate the mental status of the man, it is difficult to understand how these considerations can fail to have weight in estimating responsibility. The case would seem to be eminently one in which the crime cannot be judged apart from the personality of the criminal. From the medical point of view, the law as it stands at present in relation to criminal responsibility is far from satisfactory. The complex question of responsibility cannot be expressed in a simple formula, and each case should be taken on its merits. In the majority of cases this is now recognized

by judges, and a wide interpretation is usually allowed to the M'Naughton dictum. According to the medical evidence, however, in this instance the legal conditions under which a criminal is held not to be responsible for his crime would actually seem to be fulfilled, and the man was apparently incapable of appreciating the nature of the act for which he has been condemned, or of knowing that it was wrong at the time it was committed. As stated in the JOURNAL of June 7th, representations are being made to the effect that the case should be retried in view of the evidence as to the man's mental state now obtained. Whether or no this particular course is necessary, it would certainly appear to be an instance in which the Home Secretary should order a further investigation into the mental condition of the man, and in the event of the conclusions from the medical evidence being confirmed, the usual mechanism of reprieve and transfer to a criminal lunatic asylum could be carried into operation. Though such a method of procedure may not be ideal from various points of view, it is that provided by the law as it exists at present, and ensures ample justice to the condemned man.

The Services.

R.A.M.C. MEMORIAL SERVICE.

The service in memory of the officers and men of the Royal Army Medical Corps who have fallen in the war will be held in St. Paul's Cathedral at 12 noon on Wednesday next, June 25th. Officers of the corps who have relinquished their commissions may return to khaki for the purpose of attending the memorial service.

R.A.M.C. DINNER.

The annual dinner of the officers of the Royal Army Medical Corps was held on June 11th at the Savoy Hotel, London. Field Marshal H.R.H. the Duke of Connaught, Colonel-in-Chief of the Corps, presided, and was supported by Lieutenant-General Sir John Goodwin, D.G., A.M.S., and by three past Director-Generals—Sir Alfred Keogh, Sir Launcelotte Gubbins, and Sir Arthur Sloggett. The number of officers present was 324.

Captain J. E. Carpenter, R.A.M.C.(S.R.), was reported as wounded on the North-West Frontier of India in a casualty list published on June 11th.

Medical News.

SIR HENRY HADOW, principal of Armstrong College and an authority on the history of music, has been appointed Vice-Chancellor of the University of Sheffield, vacant since 1916, when Mr. H. A. L. Fisher became President of the Board of Education.

THE medical practitioners of Utrecht have decided that a fee equivalent to half that of an ordinary visit shall be paid for consultations by telephone. A tariff of fees for telephonic consultations has recently been adopted in Prussia.

THE members of the Tuberculosis Society will dine at the Trocadero Restaurant, London, on Saturday, June 28th, at 7.30 p.m., and hold their business meeting afterwards.

A BALL in aid of King's College Hospital Clubs and Societies Union will be held at Prince's Galleries, Piccadilly, on Monday, June 30th, and it is hoped that the occasion will also serve as a post-war reunion of old King's men. Tickets, one guinea each, can be obtained from the Dance Secretary, King's College Hospital, Denmark Hill, S.E.5.

THE prize-giving of the London (Royal Free Hospital) School of Medicine for Women will take place on Thursday, June 26th, at 4 p.m., when Miss Frances Ivens, M.S., M.B., Légion d'Honneur, Croix de Guerre, a former student of the school, will present the prizes and certificates.

THE Local Government Board at the end of last week issued a circular letter to county, town, and district councils, indicating the procedure to be adopted after the Board has approved house plans. It is laid down that the maximum time between the approval and final provisional acceptance of tenders should not exceed five weeks.

COLONEL S. S. HOYLAND, M.D., V.D., on his retirement from the presidency of the National Service Medical Board in Bristol, has received a presentation from the medical members of the board, and a signed address placing on record their sense of the great ability and fairness with which he discharged his duties.

THE British Hospitals Association has been informed by the Surplus Government Property Disposal Board that it is not yet possible to give any definite information as to

the quantities and descriptions of medical stores that will be available for disposal. Hospital managers are advised to communicate on the subject with Mr. W. J. U. Woolcock, controller of medical stores, at Imperial House, Tothill Street, Westminster, S.W.1.

ON the recommendation of the Minister of Pensions it has been decided that every soldier who is provided with an artificial limb at a fitting hospital, may receive one month's training in the use of the artificial limb, at the hospital, before being discharged from the service. Discharged men who need further instruction in the use of an artificial limb may obtain similar training. Application for this should be made through the Local War Pensions Committee.

THE work of the Scottish Women's Hospitals has been greatly reduced, but is continuing vigorously in Serbia, where the need is very great. Hospitals are being maintained at Belgrade and at Vranja in Old Serbia. In the latter place the Scottish Women's Hospital is the only medical centre for miles around. The Head Quarters Committee, 2, St. Andrew Square, Edinburgh, is represented in London by an office at 110, Victoria Street, S.W.1.

WHEN recently he completed his seventieth year a letter of congratulation was addressed to Dr. John Beattie Crozier expressing warm appreciation of his eminent services to British scholarship and speculation and of his unselfish endeavours for human welfare. Among the signatories are Viscount Morley, Viscount Bryce, Mr. Frederic Harrison, and Sir William Osler. Dr. Beattie Crozier graduated in medicine at the University of Toronto in 1872 and was admitted L.R.C.P.Lond. in 1875. He is the author of *Civilization and Progress*, of which a fifth edition appeared in 1909, *A History of Intellectual Development* (1897-1901), *Sociology Applied to Practical Politics* (1911), an autobiography, and several works on political economy.

THE weekly programmes of the post-graduate course arranged by the Fellowship of Medicine are striking evidence of the opportunities which can be afforded in London. There are appointments every ordinary day from 9 a.m. to 8.30 p.m. and even on Saturdays until 4 p.m. The opportunities offered range from attendance at operations, major and minor, and demonstrations and clinics, to set lectures at the house of the Royal Society of Medicine on general subjects, such as the nature and treatment of facial neuralgias and spasms, the principles of the operative treatment of malignant disease, and the work of a psycho-therapeutic department. The programme is issued by the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

ON Hospital Sunday in London last year Bishop Bury, preaching at St. Peter's, Vere Street, a church attended by many members of the medical profession in the Harley Street district, spoke of the spiritual message the laity were now giving and were so well fitted to give. He went on to say that he looked forward to the time when it would seem the most natural thing in the world that devout medical men should occupy all the pulpits on Hospital Sunday, as it would afford a special opportunity for the message they alone could give. This suggestion is to be put into practice on Sunday next, which is Hospital Sunday in London this year, when Sir James Cantlie, K.B.E., will, with the permission and approval of the Bishop of London, preach at the evening service at St. Peter's at 6.30.

THE National League for Health, Maternity, and Child Welfare has issued the programme of a national conference on infant welfare to be held at the Kingsway Hall, London, on Tuesday, Wednesday, and Thursday, July 1st, 2nd, and 3rd. On the first day the inaugural address will be given by Dr. Addison, M.P.: in the morning a discussion will be held on ante-natal and neo-natal mortality and its prevention, at which Sir Arthur Newsholme will take the chair, and papers will be read by Dr. Amand Routh, Dr. Eardley Holland, and Dr. Morna Rawlins; in the afternoon papers will be read by Dr. C. W. Saleeby and Dr. J. J. Buchan, with Sir Malcolm Morris in the chair. At the morning session of the second day there will be a discussion on the work of the midwife in relation to ante-natal and neo-natal mortality; Sir Francis Champneys will take the chair, and Dr. Fairbairn and Dr. Vera Foley will read papers; in the afternoon a discussion will be opened by Dr. Rhoda Adamson on the industrial employment of mothers in relation to infant mortality, at which Dr. Mary Scharlieb will preside. The third day will be devoted to discussions on the illegitimate child, with Sir John Kirk in the chair at the morning session, and Mrs. H. A. L. Fisher at the afternoon session. Dr. Whitley, M.O.H. for Swindon, will read a paper on criminal abortions and abortifacients.

Letters, Notes, and Answers.

Authors desiring reprints of their articles published in the *BRITISH MEDICAL JOURNAL* are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the *JOURNAL* be addressed to the Editor at the Office of the *JOURNAL*.

The postal address of the *BRITISH MEDICAL ASSOCIATION* and *BRITISH MEDICAL JOURNAL* is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology*, *Westrand*, London; telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, *Westrand*, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, *Westrand*, London; telephone, 2634, Gerrard. The address of the Irish Office of the *British Medical Association* is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INCOME TAX.

WINCHESTER inquires whether it is correct to include a yearly sum for depreciation of motor car among professional expenses.

* * No. As the law stands, an allowance for depreciation is given only to the profits of a "trade," and as the profits of a "profession" are separately charged to income tax, a medical practitioner is outside the scope of the depreciation allowances. On the other hand, he can claim the cost of replacing a car, provided any expenditure on improvements is excluded.

J. F. C. sends a similar inquiry, and asks as to the position with regard to the cost of a second car purchased owing to the possibility that his own car might break down and be irreplaceable.

* * The purchase of a second car while the first car was still retained for use would constitute capital expenditure, however necessary the purchase may have been. If one car is sold our correspondent would, we think, have a claim to the loss on the car as a species of replacement expenditure, but while he retains the two cars he appears to have no remedy.

TEMPORARY ARMY OFFICER inquires whether income tax or super-tax is chargeable on a gratuity granted on demobilization.

* * No. The matter is being dealt with in the Finance Bill now before Parliament.

X-RAY OUTFIT WITH ENGINE AND DYNAMO.

"X-RAY," who is going abroad to a place where no electric supply will be available, had intended to get current for an x-ray outfit from an engine and dynamo, but has been informed that the current cannot be supplied direct, and that accumulators would be necessary.

* * The reply to this question is that the inquirer has been misinformed. The army was supplied with a great many generating sets, consisting of a petrol engine and dynamo complete with switchboards and control. The x-ray apparatus could be energated direct from these engines, and a current of 10 ampères and 70 volts obtained. Each set was arranged for the charging of accumulators, and these were included if accumulators were likely to be required. With the dynamo and cells in series as much as from 4 to 5 milliampères could be passed through a medium tube. Accumulators are not necessary, but are advantageous since (1) they are available if the x-ray apparatus is wanted in different places—such as hospital wards; (2) they are available if, for any reason, the engine is temporarily out of order; and (3) they are useful for lighting purposes in the x-ray and dark rooms.

LETTERS, NOTES, ETC.

THE Standard Motor Company, in view of advertisements which have appeared recently, desire to state that no Standard 9.5 h.p. two-seater cars were manufactured by them between November, 1915, and the date of the armistice, November, 1918.

PARTURITION UNDER MORPHINE AND HYOSCINE.

DR. J. REID (London) writes: In a third confinement the usual routine of twilight sleep was carried out. The os was about the size of half a crown when the morphine and hyoscine was injected. A trained nurse was in attendance. At the end of two hours the head receded and pressed on the anterior segment of the uterus, while the os was closed. In about six

hours more the head was opening the os, and at the end of twelve hours the os was not completely dilated. The lady ate and drank nothing, and said the pains had a "dead" or "dull" sort of feeling. As she felt exhausted, under chloroform the labour was completed. She had previously had a confinement with and one without instruments, neither of them long, and I should say the case would have ended without instruments and "twilight sleep" in four hours, or at most in six hours. The spasmodic state of the lower segment of the uterus, even when labour was about to be completed, made me think that I had wisely given up the use of hyoscine in confinements years before twilight sleep was talked of. In parturition of normal women there should be sensations of normal organic kindred kind only. Extra pains often come from dread of abnormalities, fatigue, and real troubles.

MEDICINE AND LETTERS.

THE note under this title in the *JOURNAL* of May 31st, which was intended mainly to draw attention to the fact that the connexion between medicine and letters, so strong in the past, continued in the present day, has brought us two letters from Dr. Mercier, to which, though they were not intended for publication, we have his permission to allude. He thinks we should have mentioned Mark Akenside, the poet, a Fellow of the Royal Society and of the Royal College of Physicians, of whom Pope said: "This is no everyday writer" and Sir Richard Blackmore, physician in ordinary to William III, a Fellow of the Royal College of Physicians, who wrote epic and heroic poems to the rumbling of his chariot wheels. We had, however, proposed to confine our references to writers of the past to the immortal writers, and we hardly think that either Akenside or Blackmore can be classed with these. Dr. Mercier continues: "However, there are other omissions that surprise me a little. Sydenham and Sir Thomas Watson had a high literary reputation; but it is true that they did not, as far as I know, write on non-medical subjects. This is not true of Dr. Caius, who wrote a history, either of Cambridge or of its University, I forget which. Edward Jenner, too, wrote some charming lines on common prognostics of changes in the weather, of which only one line sticks in my memory:

Betty's corns begin to shoot.

The most distinguished of all medical authors was perhaps Arbuthnot, the friend of Pope, Swift, and Warburton, and the joint author of *Martinus Scriblerus*."

It was to Arbuthnot that Pope, the other author of the book, addressed one of the finest compliments ever paid by a patient to the physician:

Friend to my life, which did not you prolong,
The world had wanted many an idle song.

Caius did write a history of the University of Cambridge, but it was a volume appended to an essay in which he discussed the comparative antiquity of the universities of Oxford and Cambridge. The learned Dr. John Venn, in his memoir of John Caius, remarks that of Caius's works the most controversial, and the one which probably secured the most interest in his own day, was that on the antiquity of the university. When Queen Elizabeth visited Cambridge in 1564, the public orator, William Masters, asserted in his speech the superior antiquity of Cambridge over Oxford. This being reported to Thomas Caius, Master of University College, Oxford, he forthwith wrote a MS. reply. John Caius happened to see this and wrote a rejoinder, published anonymously in 1568. The rival advocates died within a short time of each other. No modern historian, dryly adds Dr. Venn, would attach much value to the arguments on either side.

Dr. Mercier suggests the addition of the name of Dr. John Brown, of Edinburgh, author of *Rob and his Friends*. He adds, "These are the only literary doctors I can think of at the moment, and it must be admitted that the list is a meagre one, containing very few men of the first rank in literature. The claims of both literature and medicine are exacting, and scarcely allow a divided allegiance. It is given to very few to follow both successfully."

THE following appointments of certifying factory surgeons are vacant: Ballymore Eustace (Kildare), Bedford (Bedford), Maynooth (Kildare), Randalstown (Antrim), Rathvilly (Carlow).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes restantes* letters addressed either in initials or numbers.

THE PART OF THE CONSULTING SURGEON IN WAR.

BEING THE CAVENDISH LECTURE DELIVERED BEFORE THE
WEST LONDON MEDICO-CHIRURGICAL SOCIETY ON
JUNE 20TH.

BY

SIR GEORGE MAKINS, G.C.M.G., C.B., P.R.C.S.,
HONORARY MAJOR-GENERAL.

In making choice of a subject on which to deliver a short address my mind has naturally turned to the work which has, for the most part, engrossed my own attention during the past five years, and I must crave your forbearance if you should consider my remarks to be devoted to a matter rather administrative than scientific in character. None the less, I believe my subject to be one of prime importance to the future of both civil and military surgery, and it deals with a matter in which the lessons to be derived from the experience of the South African war seem to have been allowed to be lost sight of.

In turning to the practical lessons to be deduced from the recent great war the subject is so vast that it becomes necessary to limit a brief address to one single element of the work which has been performed, and I propose to claim your attention to the position of a consulting surgeon employed with the army. Yet even here a limitation must be drawn, for in this world-wide war the experiences of a consulting surgeon must to some extent have varied with the conditions under which he served and the country in which he was situated. Hence the remarks I shall make are founded principally upon the part of the campaign conducted in France and Flanders.

I may premise that I make no claim to originality of conception; my remarks are based rather on observation of a system which has gradually been evolved in practice.

As far as I am aware, consulting surgeons as such were first appointed in the South African war. They were placed in a position of great dignity and freedom, but were accorded no actual military rank in the regular service, although assigned the privileges of a Lieutenant-General and treated with great monetary liberality. Experience of the utility of the presence of consulting surgeons with the army was attained in that war, but when at a later date the Royal Army Medical Corps was reorganized, no definite rules and duties were laid down for them, and when the first consultants left to join the army in France in September, 1914, no more clearly defined duties had been assigned to them than before.

One primary step of importance was however made, in according temporary commissions with a rank only inferior to that of the Director of Medical Services, and the pay and allowances of a colonel in the Royal Army Medical Corps, and this principle was maintained, by promoting the seniors of the consultants to the rank of Surgeon-General when this rank was granted to the Ds.M.S. of the separate armies. The consultants therefore arrived in France with a suitable rank, with no fully defined duties, but considerable freedom of action.

I will summarize shortly the duties of the consulting surgeon as they were subsequently evolved.

1. Consultation with the Medical Director-General or the Director of Medical Services of the army to which he was attached, on all matters concerned with the surgical treatment of patients.

Although the consultant possesses no administrative position, there are numerous matters in the administration of the medical service in which he can take part with advantage. Thus he necessarily takes a prime interest in the question of location, construction, and the equipment of hospitals. In the late war the consulting surgeons were frequently called upon for advice regarding the arrangement and equipment of all the special departments of the hospitals, such as operating theatres, x-ray rooms, wards specially devoted to the treatment of fractures, etc.; and throughout the war a steady stand was made for the provision of huts or buildings in place of the marquees which proved so unsuited to the climate of the country and the form of warfare in which we were engaged.

The numerous demands made upon the administration

for splints and apparatus, and the many varieties introduced as a result of the ingenuity of individual surgeons; the extended employment of x-ray outfits; the requisitions for surgical instruments altogether beyond the limits of those that had been considered sufficient to meet the requirements of military surgery; and the many devices originated for the general treatment of patients suffering from shock, the results of haemorrhage, or the acute infections, are only some of the many subjects which were fruitfully discussed between the consultants and the senior administrative officers.

2. The nomination of medical officers to fill special surgical posts.

The consulting surgeon possesses a more accurate knowledge upon which to base a judgement of the value of the records of men who have held civil appointments, and the nature of the work these appointments have involved; he has a far better opportunity of directly gauging the technical ability of the younger men, because he is constantly seeing them at work in the hospitals; and from the nature of his relations with the men he is often in a position to judge better than any one else of their fitness to occupy successfully any particular post.

A still more troublesome problem than the selection of individual surgeons is found in the maintenance of the efficiency of the units. The exigencies of military service and the casualties which occur amongst medical officers, often require that surgeons shall be suddenly transferred from one part of the line to another. Thus the efficiency of any particular unit may be imperilled; for officers fully familiar with their duties, with a knowledge of how far they can rely upon each other, and whose capabilities have been gauged by the officer in command are suddenly separated. The Director-General in France made an effort to reduce this difficulty by laying down a rule that the three senior surgical officers should not be transferred without the acquiescence of the consultant of the area. This to some extent met the difficulty, although hardly to the entire satisfaction of the consultant, for the consultant is naturally as anxious and jealous regarding the character of the work within his area as is the officer in command of the efficiency of his unit.

It is especially in these directions that the consulting surgeon comes into contact with the administrator, and it may be asked how their official relation should be defined. I consider the answer to be that these should be of mutual confidence and friendship. No sort of rivalry can be supposed to arise between these two sets of officers; their work and the sources of credit for it are both absolutely distinct, while a whole-hearted co-operation between them is the surest element in ensuring efficiency and success, as well as promoting the best interests of the patients. The example set by the Director-General of the Medical Services in France had a most happy influence in this respect, and the cases were few and far apart where jealousy or mistrust jeopardized the efficiency of the system.

In connexion with this subject the value of the meetings of the Director General, or of the Directors of Medical Services, as the case may be, with the consultants as a body, for the discussion of matters in which administrative detail bear closely on medical treatment or vice versa, and for the consideration of large questions affecting the general treatment of the patients, cannot be over-estimated.

3. Co-ordination of the surgical work.

In this direction great scope is afforded to the consultant. He visits numerous units and has some acquaintance with the methods adopted and the immediate results achieved at every stage upon the lines of communication, and he may do much to regularize and bring into conformity the work being carried on throughout the entire army. This is a most responsible duty, for on the one hand he must be careful not to obstruct advance, while on the other he must encourage the pioneer and yet strive to avoid unnecessary alterations of initial treatment to conform with the ideas, either advanced or retrograde, held by the medical officers under whose charge the patients may successively be placed.

On many subjects involving great principles, such as those of the treatment of wounds and the common infections, there can be no doubt of the influence for good

which the consultant can exercise. In special directions, also, he is in a position to encourage individual medical officers to devote their chief attention to any one class of case, or to any one form of treatment undergoing trial, and also ensure that a proper supply of material is assigned to him.

A word should perhaps be added on the delicate question to the nature of the advice to be proffered by the consultant to the individual medical officer. It is obvious that this must correspond with the capacity and experience of the medical officer concerned, and the conditions under which he is for the time working. In the main it should be such as the average surgeon is fully competent to profit by, and the ideal must be reserved in many cases for the man with a highly developed technique, and either special or long-standing experience behind him. In not a few cases mild measures or expectancy may be the safer course and more suitable, than one which would seem to hold out the promise of a more brilliant and rapid result.

4. *The diffusion of recent knowledge.*

Beyond drawing upon his own ability and experience, the consultant can bring under the notice of the medical officers of the large area recent discoveries and advances. This area may be more or less isolated in situation, but even within its own limits free intercourse between the different units may not be what is to be desired, and it may be found that a spirit of aloofness, similar to that which may separate two neighbouring hospitals and schools in a large city, or between the work of distant centres, exists. The desirability of diffusion may relate to general principles and broad lines of thought, but is especially marked in the application of small technical details. It is obvious that in this part of his duties the consultant must be careful not to establish a dead level, and thus interfere with the great advantage to be gained from the exercise of individuality on the part of the medical officers concerned.

The opportunity of diffusing knowledge is not, however, confined to the information which may be casually passed on during the daily round. The medical meeting affords another opening which the consultant cannot too sedulously make use of. To seniors and juniors alike these meetings and discussions are of the greatest value, and during the war many of the discussions recalled the time when the society meeting took the part in chronicling advance in medicine which has unhappily been largely transferred of late years to the custom of publication without the opportunity for free discussion of the questions dealt with.

On some occasions during the war a virgin subject came under consideration, and during my whole professional life I have never attended a meeting of such interest as that devoted to the subject of "poison gas," at which the results of the use of "drift" chlorine gas was first discussed. Each speaker dealt with a theme absolutely novel to his experience, and from direct personal observation alone, and for once a subject was available in which the possibility of tracing the course of cases from the beginning to their termination was present.

Opportunities also arise for the consultant to exercise still more directly his powers as a teacher. The exigencies of warfare necessitate the inclusion in the staff of any definite unit a number of young officers who have but recently entered the service, quite unfamiliar with the class of work they may have to undertake or of the conditions under which it may have to be performed. Under ordinary circumstances these new-comers could only gain the necessary experience by observation of the work of the officers with whom they were associated at a time of storm and stress particularly unsuitable for the impartation of individual instruction.

To meet this difficulty the Directors of Medical Services of the Armies set up schools of instruction, in which during periods of comparative quiet every officer was able to acquire familiarity with the methods employed. In connexion with these schools many of the consultants rendered valuable aid by delivering lectures, initiating discussions, and giving practical demonstrations.

At a later date similar schools were organized at the penultimate base, and the experience gained showed how valuable they would have been had it been possible to provide them at an earlier date, an ideal which the

continuous shortage of medical officers had rendered impracticable.

5. *The initiation and co-ordination of research.*

From the purely clinical aspect the consultant has unusual opportunities of initiating or introducing methods of treatment, and exceptional advantages for observation of the results of their application, because it is within his power to arrange that a large number of cases should be placed under the charge of the same medical officer, and thus form an opinion as to how far any method is one only suited to employment by men of peculiar technical ability, or unsuitable except under ideal conditions.

In the late war, however, the consultant has been under far more favourable conditions than even these, since by the wisdom and foresight of those responsible for the working of the Medical Services, a number of workers in the different branches of pure science were also called in to take their part in the great task. Thus the consultant was in the happy position of possessing colleagues ready and anxious to do their best to solve any problem which might arise. These latter, moreover, were in unusually close relation with both medical officers and patients, and the association forms one of the most striking features of the campaign, and is responsible for a great part of such material advance as has been made.

Allocation of Consultants.

I may now turn to some matters more closely connected with the actual performance of the individual consultant's duties.

The first question which arises is, as to where he may most conveniently be located. Two methods of allocation are possible: in the one the consultants work upon concentric lines, one section being attached to the forward units; the other being attached to the hospitals on the lines of communication.

When the duties which have been briefly outlined are considered, the enormous importance of the consultant's function as a "liaison officer" becomes at once apparent, and for this part of the work no doubt can exist that the "radial system" possesses manifest advantage, and it may be added that by "the base" the general hospitals situated at the Channel ports in a war such as we are dealing with should not be meant, but the actual base hospitals in England. Only by acquainting himself with the work being carried on throughout the whole line can he become fully informed and thus render the service to his fellows that is expected from him.

In the recent war the radial system was not adopted in the British army, although it was by the French. The British consultants worked upon the concentric system, one section being confined in their duties to the forward units, the other to the units on the lines of communication. Thus a risk was incurred that no members of the service could become thoroughly conversant with the whole course taken by the cases. The disadvantages of the system were to some extent discounted in two ways: the consultants located with the hospitals at the Channel ports being allowed to make occasional visits to the front units, and in some cases consultants who had served at the general hospitals were afterwards transferred to duty with the armies. One great advantage did, however, obtain to the system, in that the consultant became personally acquainted with all the medical officers within his area, had unusual opportunities of close relationship and gaining the confidence of the administrative officers, and could secure permanent quarters.

Allowing that either system possesses advantages of its own, the difficulty might be satisfactorily met by adopting a slight variation in the method followed in the British army.

After the initial period of the war the two senior of the consulting surgeons were allotted a somewhat different position to the others, liaison duty being the chief feature of their work. If in place of retaining the concentric system these two officers had worked radially, each over a definite area, a more satisfactory result might have been attained, for it must be borne in mind that the information furnished by the liaison officer is not only as to results in general, but also as to those seen in any particular set of wounded men, and as they may be influenced by any special conditions of weather, difficulty of transport, etc.

On a far smaller scale in South Africa I had personal experience of the working of the radial system, and I am convinced that it is the superior if one system alone is to be relied upon; I also concluded from observation of the work of the French consultants that the system is the better of the two.

During the fighting of the Kimberley Relief Force I was with the field hospitals, witnessed and took part in the early treatment of all the wounded men brought in, saw and examined the whole of the patients who were passed down the line in the ambulance trains to Cape Town, and later went down to Cape Town myself, and was able to see the same patients and personally inform the medical officers under whose charge they had come of the earlier history of them all.

It may be said that this was an experience in a very limited field of action, but in the recent war I was in like manner impressed with the fact that the French consultants were able to follow batches of patients down the line, and personally observe the further course of individual patients.

Practical experience appears to demonstrate that a combination of the two systems may retain the advantages of both, the duties of one class of consultant approximating itself to that of a line of communication officer, while the duties of the other would be confined to the definite area or army assigned to them.

How far should the consultant be looked to for the actual performance of operations?

It is obvious that the consultant should be prepared to operate whenever this may be required; in some instances it may be advisable either on account of the importance of the particular patient, in others as a part of his duty in the regulation of the methods to be employed. On the other hand, if he makes a routine practice of operating freely, so much of his time is taken up that his more important duties may be restricted or interfered with.

Personally I found this to be the case in the early part of the war; it was easy to spend the whole day operating in a single unit, and find no time to visit the remainder.

A considerable difference in this respect exists between the duties to be performed by consultants working on the radial and concentric lines, should this distinction be adopted. The former would be principally concerned in the co-ordination of methods and equipment, and in the diffusion of information. The latter, working in a definite area, would no doubt feel that operative work formed a more important part of their function.

During the great war immense advantage was gained by the presence at an early stage of highly skilled surgeons with the army, capable of initiating new methods and variations of technical detail, and the service was fortunate in acquiring men specially competent in certain departments of surgery, such as those of the head, chest, abdomen, genito-urinary system, etc.

What part should the consultant take in the literary work produced?

This is a question of some difficulty. On the one hand we have a body of men peculiarly well fitted to undertake such work, while on the other the consultant holds a position of much delicacy because he is constantly engaged in watching a large number of the active younger men who are bearing the whole brunt of the work of the campaign; he becomes their confidant in the numerous daily consultations which take place, becomes thoroughly acquainted with their views and ideas, and consequently incurs considerable risk of being thought to make use of this experience for his own benefit.

Hence the consultant probably follows the best course in confining his output to some definite subject or subjects, and in the main to concentrate his efforts on exciting others to place their experience on record. In the recent war the consulting surgeons usually followed this course, with a consequent production of a number of valuable contributions to military surgery, and the only comprehensive work that was published was the result of a combined effort by the whole body.

This, the *Manual of Injuries and Diseases in War*, was drawn up by a method which attempted to reproduce the general trend of thought of surgeons working in France. A sketch outline was drawn up by one writer and sub-

mitted to every other member for emendation, addition, or excision, and the final result was then considered by the whole body sitting in committee. In this way a small manual was produced which, if unambitious and not exhaustive in scope, yet reflected general opinion on the subjects dealt with, and proved of definite use to the officers of the service.

A comprehensive military surgery from a single pen prepared in the light of recent experience, embodying the advances that have been made and their relation to older views and methods, is much to be desired; meanwhile, individual consultants are making themselves responsible for various chapters in the medical history of the war, in course of preparation under the auspices of the Medical Research Committee.

Mode of Choice of Consultants.

It is obvious that at the outbreak of any future war certain individuals will have been already earmarked to undertake these duties, but during the progress of any long-drawn-out campaign the number will have to be increased, and changes in the personnel will be necessary.

The majority of the consultants will probably always need to be recruited from the ranks of the civil profession, but there is every reason to encourage officers of the regular service to qualify for these posts. The possibility of holding them offers a great inducement to officers of the regular service to continue to give their main attention to strictly medical work; and, if suitable rearrangement be made, an escape would be possible from the unsatisfactory conditions under which administrative work offers the only road to the highest positions in the service.

With regard to the choice of consultants during the continuance of a campaign, in the recent war the promotion of junior officers who had gained their experience by practical work in the military hospitals proved a great success, and this mode of choice is not only an inducement to capable men to undertake the duty of surgical specialist, but has obvious advantages over the introduction of men who have had experience of civil work alone, however good their professional status.

In making use of this second method of selection, however, the value of the presence with the army of consultants connected with the hospitals and medical schools at home must not be lost sight of. It is to men emanating from this source that the profession must look for the introduction into military surgery of recent improvements in civil work, and again for the introduction into the surgery of civil life of the experience gained as a result of work in the field. Putting purely scientific questions on one side, the acquaintance of the civilian with the many problems of military administration and the manner in which they may be solved will doubtless prove of great advantage in the future. The necessity for thought and prompt action in the provision of the requirements for the performance of successful work under difficulties, and the experience that these necessities will not be forthcoming unless the surgeon bestirs himself to ensure their presence, form a lesson which the civil surgeon accustomed to expect everything found for him almost automatically has surely taken to heart.

What part may the consultant play in strengthening the bond established by participation in a common science between the nations of the world?

Can it be said that science forms a bond between men of different nations strong enough to withstand the forces set free by the outbreak of a war between them? Recent experience has gone far to falsify the utterances with which international congresses have made us familiar. Not only do societies and corporations disclaim connexion with those of enemy states, but individuals also combine in taking similar action.

Yet the bond had seemed a reality, fostered and strengthened by mutual work in foreign schools and laboratories. International meetings held with both scientific and social aims, the diffusion of abstracts of work done in other countries, and perhaps the most important of all, the incorporation in scientific publication of the results obtained by workers in all countries, which have, for instance, made the name of Lister and of Virchow as familiar to the surgeons of each country as if its bearer had belonged to either.

Unfortunately the fact that the great war has found the men of literature and of science amongst the most active and polemical writers on either side, goes to show that the highest grade of mental cultivation has little influence on the elemental characters of man's nature. Thus while the Central Powers have gone so far as to strive to prevent their medical literature reaching their enemies' hands, the conditions of war have furthered a most intimate association between the medical services of the armies allied in the same cause. Not only has a brotherly alliance existed, unbroken throughout by any national jealousy, but the same lines of thought and the same tide of action and reaction in practice has been observable in all. The reports of the Inter-Allied Conference on the Treatment of Wounds furnish an excellent illustration of these facts.

Amongst the surgeons of the allied nations an increased spirit of fraternity and intimate co-operation has certainly flourished. Just as the armies of the different states have placed their resources of every kind at the disposal of each other, so the workers in medical science have pooled their knowledge and growing experience, and readily received and adopted variations or advances from whatever source they might emanate.

Those who were privileged to take part in the recent campaign will at once recognize that although omissions have no doubt been made in sketching this outline of the duties of the consulting surgeon, yet it embodies in the main what has been the practice in the British army, and a system which has been appreciated and even imitated in the armies of our allies. Still, as far as I am aware, the system remains founded upon usage during the war; it has resulted from a process of development in successive steps, and it is no doubt capable of further regularization and organization.

Conclusion.

The authoritative pronouncement of Sir Alfred Keogh in the *British Journal of Surgery* (vol. iv, No. 13, pp. 3-4, 1916) affords sufficient grounds to absolve me of any intention of wishing to magnify the office of the consultant, either at the expense of the regular service or of the splendid body of men for whom the nation was in the main part indebted for the hard work of the campaign. It should be realized, however, that the position assigned to the consultant with the army corresponds in dignity and importance with that of the professor in a Medical Faculty, and his power of influencing the whole character of the work is equally great. We cannot doubt that the experience gained will be utilized by clearly defining what the status and duties of the consultant will be in the future, but I would submit that these should be laid down while the facts that should decide them are still fresh in the minds of the powers that govern the Army Medical Service.

It is much to be desired that the principle introduced in 1903 of inviting civil consultants to form a part of the staff of the military hospital at Millbank should undergo further development, and be but a step towards the permanent association of civil practitioners with the work of the military hospitals throughout the service. Thus a connexion between the two branches of the profession in times of peace would be established which could not fail to simplify and render more efficient the change which must follow mobilization in the case of any war of magnitude.

These remarks upon the duties of the consulting surgeon cannot be closed without allusion, however brief, to the charms and pleasures of the position. For the first time in his professional career he attains an opportunity of practising surgery for the sake of surgery alone, a position which many a man with the responsibilities of the civil practitioner has longed for as the impracticable ideal. A routine occupation is suddenly transformed into a free and varied existence, with periods of strenuous work, it is true, but also others in which abundant opportunity is found to ponder over the many interesting problems which arise, and, moreover, a wealth of material which allows the acquisition of a practical experience which many years of civil practice would not suffice to acquire.

Lastly, the favourable conditions which are afforded of cultivating a close relationship with colleagues. Happy as the association of the consultant may be with those with whom he works in civil life, they cannot approach the free intercourse of mind with mind which obtains in

life in the field. Freedom of discussion, the constant sharpening of wits in encounters with young and ardent workers eager to assume the position of the pioneer, the social life and the charm of entering on equal terms a society such as brings back memories of youthful days, are but some of the pleasures only to be fully appreciated by those who have enjoyed the privilege of experiencing them.

No less happy are the somewhat novel relations which establish themselves between the consultants, and between the consultants and the officers of the regular service, which it is to be hoped form a presage of the future, a continuing co-partnership founded upon a common aim and mutual appreciation.

THE OPERATIVE TREATMENT OF SIMPLE ENLARGEMENTS AND TUMOURS OF THE THYROID GLAND.

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IN this paper it is intended to consider the surgical treatment of certain simple enlargements of the thyroid gland by a review of fifty cases. Under the heading of simple enlargement the following types of case are included: (a) Colloid goitre, (b) diffuse adenoma; (c) encapsuled adenoma and cysts; (d) inflammatory conditions. Malignant disease and exophthalmic goitre are excluded from the cases under review.

A. COLLOID GOITRE.

This term is used in preference to parenchymatous goitre since histologically the most marked change is increase of colloid with distension of the vesicles. Clinically in early cases the gland shows a diffuse enlargement which is usually symmetrical; the surface of the gland is smooth, and the consistency is soft. In old-standing cases the surface is nodular, and the gland, as a result of fibrosis, is firmer in consistency; differentiation, both clinically and microscopically, from diffuse adenoma may be a matter of considerable difficulty; for this reason only the early "soft" cases are considered under this heading, the more advanced cases being grouped with the diffuse adenomata. A very large proportion of the early cases, where no fibrosis has occurred, are amenable to medical treatment; my usual plan is to give iodine internally, in the form of pil. iodoformi gr. $\frac{1}{2}$ t.d.s.; in many cases regulation of the bowels by means of liquid paraffin is essential, and intestinal antiseptics are often of value. Operation is rarely necessary, and should only be performed for definite symptoms or severe deformity. The symptoms most commonly complained of are due to pressure on or dislocation of the trachea, a condition which is most likely to obtain if the goitre is asymmetrical or partly intrathoracic. Occasionally dysphagia may be a prominent symptom; in one particular case a tongue of thyroid tissue was found passing between the trachea and oesophagus on the right side; removal of the right lobe gave complete relief.

Operations for cosmetic reasons require careful consideration and should only be performed if the deformity is severe and after a prolonged course of medical treatment; in this series I have performed an extirpation for this reason on three occasions only (one male and two female cases). In each case the patient was a servant and could not obtain employment owing to the disfigurement. In two cases the complete thyroid was extirpated with the exception of a small stump at each lower pole; in the third case the left lobe alone was removed as it was more than twice the size of the right lobe.

GROUP A.—Colloid Goitre.

Total operations (males 2, females 5) ...	7
Complete extirpation ...	4
Hemithyroidectomy ...	3
For dyspnoea ...	3
For dysphagia ...	1
For disfigurement ...	3
Average age 18; oldest 27, youngest 14.	
Mortality nil.	

B. DIFFUSE ADENOMA.

The pathology of this condition is a little obscure; some cases are definitely due to the presence of multiple small cystadenomata with little or no capsule to the growths, others appear to be the result of fibrosis in a colloid goitre. (See above under colloid goitre.)

Clinically in this condition the thyroid is firmer in consistency than normally and is irregular and nodular on palpation.

The symptoms are nearly always those of dyspnoea—especially occurring at night and on exertion; very marked dyspnoea with stridor was present in several of the cases under review. The respiratory embarrassment is almost always due to flattening of the trachea by lateral compression together with displacement to one side causing kinking. The enlargement was commonly bilateral but asymmetrical, one lobe being considerably larger than the other. A tongue of thyroid tissue running up to the lower jaw was noted in several cases, necessitating a departure from the usual transverse collar incision.

In my earlier cases the isthmus and the larger lobe alone were removed; some shrinkage of the remaining lobe often followed, but this was by no means invariable, and on two occasions a second operation, two years and four years later respectively, was necessary. It was also observed that the removal of one lobe was liable to be followed by dislocation of the trachea with dyspnoea; this was so marked in one case that an immediate complete extirpation was necessitated, urgent dyspnoea resulting immediately after the removal of one lobe. For these reasons it is now my practice to remove the entire thyroid with the exception of a small stump of tissue at the lower poles; no ill results have been observed from this operation.

Goitres of this type tend to grow to a very large size; no palliative treatment will give any relief—operation is therefore justifiable if the enlargement is marked, even if no symptoms are present.

GROUP B.—Diffuse Adenoma.

Total cases (males 3, females 6)	...	...	9
Total extirpation	...	...	5
Hemithyroidectomy	...	...	4
Urgent dyspnoea	...	...	4
Average age 25; oldest 38, youngest 16.			
Mortality nil.			

C. ENCAPSULATED CYSTS AND SOLID ADENOMATA.

This type forms the most frequent class of case operated on—that is, 32 out of the 50 cases under discussion. Cysts are not infrequently multiple; they may grow to a very large size—in one instance a single cyst had reached the size of a croquet ball, completely filling the space between the point of the chin and the top of the sternum; it was easily enucleated with practically no haemorrhage.

Solid adenomata were met with in 5 cases; histologically these appear to be derived from fetal thyroid tissue, showing masses of cuboidal cells with attempted vesicle formation in places. It was noteworthy that the enucleation of these tumours was likely to be followed by severe haemorrhage from large vessels piercing the capsule of the tumour; for this reason it is now my practice to treat this type of case by extirpation of the affected lobe or portion of the gland rather than by enucleation of the tumour. Single cystadenomata can usually be enucleated with little difficulty or danger, provided the precautions noted in the description of the operation given below are carried out. Multiple cysts are usually best treated by extirpation of the affected lobe.

The usual symptoms are those of dyspnoea; pain or dysphagia may be complained of, but the latter symptoms are rare. Even if no symptoms are present operation is always advisable in these cases if the tumour is of any size, and particularly if it is situated in the isthmus; operation is always urged if the tumour is low down and tending to become retrosternal.

A history of rapid increase in size of the tumour with exacerbation of symptoms was present in five cases. In one the operation had to be performed as an emergency owing to acute dyspnoea; the rapid increase was due to haemorrhage into the cyst in every case.

Serious obstruction to respiration may occur during anaesthesia, and one dramatic case of this nature is worthy of a detailed description.

Case 37.—A girl, aged 18, was admitted into hospital with three cysts in the thyroid—one the size of a plum in the right lobe, one the size of a walnut in the isthmus and reaching down to the top of the sternum, and one quite small in size in the left lobe. There was marked dyspnoea on the least exertion, with orthopnoea at night. The anaesthetic (open ether preceded by omnopon, scopolamine, and atropine) was administered by Dr. Blomfield. About five minutes after induction had commenced urgent dyspnoea set in, and the patient became deeply cyanosed. Thinking that the cyst in the isthmus was the cause of the difficulty I made a median vertical incision and rapidly enucleated the cyst, dividing the isthmus at the same time. Some relief was obtained, but this was by no means complete; further investigation revealed another cyst the size of a golf ball behind the sternum, and apparently connected with the left lateral lobe; this was shelled out, with complete relief of the respiratory embarrassment, so much so that it was possible to continue the operation and enucleate the remaining cysts.

The most difficult and dangerous type of case is where the cyst is partly or completely retrosternal; the symptoms are much more severe, and stridor may be marked. Any intercurrent respiratory disease may easily be fatal in such cases, and sudden death from suffocation occurred in one patient as a result of haemorrhage into the cyst before any operation could be performed.

GROUP C.—Encapsulated Cysts and Solid Adenomata.

Total operations (males 4, females 28)	...	...	32
Treated by enucleation	...	...	20
Treated by extirpation of the affected lobe	...	...	12
Retrosternal cysts (partial or complete)	...	...	9
Average age 34; youngest 16, oldest 58.			
Mortality nil.			

D. INFLAMMATORY AFFECTIONS.

Inflammation of the thyroid is not common and suppuration within the gland is even more rare. Three cases of abscess in the gland have come under my care; the first was in a boy, aged 9, as a sequela of measles; the abscess was situated in the isthmus and was causing considerable dysphagia and some dyspnoea—drainage of the abscess, in which a staphylococcus was isolated, gave complete relief. The second case occurred during convalescence from a perforated gastric ulcer; a small abscess formed in the right lobe; this was drained and it rapidly healed—unfortunately the pus was not examined. The last case occurred in a man suffering from septicaemia, the result of a gunshot wound of the thigh. Death resulted in this case from oedema of the larynx before any operation could be performed.

NOTES ON THE OPERATIONS.

The anaesthetic has rightly been considered one of the chief dangers in thyroid operations, and for this reason local anaesthesia has been advocated by many surgeons. Personally, I have always been fortunate in having the assistance of highly skilled anaesthetists, and all my cases have been operated on under general inhalation anaesthesia. The usual routine is as follows. Three-quarters of an hour before the operation 1 c.cm. of omnopon and scopolamine and $\frac{1}{100}$ gr. of atropine are given hypodermically; the patient's ears are then plugged with cotton-wool, and they are encouraged to go to sleep—this is often so effective that they have no recollection of being moved from the ward to the theatre. The anaesthetic given was in practically every case open ether by the drop method or warm through a Shipway apparatus; in a few cases a small amount of C_2E_2 was required during the induction. Induction is always slow, as the respiration rate is reduced as a result of the preliminary injection. Anaesthesia should be comparatively light throughout, so that the patient rapidly returns to consciousness after the operation.

The Incision.—In the majority of these cases the low transverse collar incision was found the most suitable, giving good access, and, if carefully sutured, a very good scar; the only variations I now make are (a) in small cysts or adenomata of the isthmus, which are often more accessible through a median vertical incision, and (b) where the goitre is large and there is an extensive prolongation upwards towards the angle of the jaw. In such cases the outer portion of the incision requires to be curved upwards in order to avoid excessive dragging and manipulation in delivering the upper pole. The incision should in all cases be free, so as to avoid the necessity of strong retraction; superficial veins should be clipped and ligatured as soon as exposed, so as to avoid too large a number of clips around the wound.

The sterno-hyoid and sterno-thyroid muscles, which are commonly greatly thinned and stretched, can readily be retracted inwards or outwards; there need, however, be no hesitation in dividing them if additional room is required; division of the sterno-mastoid is never necessary. The fascia over the gland is next cleared, the veins in it being at once picked up and ligatured. The gland in its capsule is then isolated and the upper and lower pedicles are identified and freely exposed. This step is essential whether an enucleation or an extirpation is contemplated; if the gland has been thoroughly freed, the enucleation of cysts is easier, and, further, haemorrhage may be readily checked by extroversion of the cavity remaining after enucleation by means of a finger inserted behind the gland.

In an enucleation the true capsule of the gland is incised, all bleeding points being clamped and ligatured at once; the gland tissue is then divided over the cyst and the tumour is enucleated by gentle finger dissection. After enucleation, a gauze plug inserted into the cavity for a few minutes will usually check all haemorrhage. Failing this, the manœuvre described above is of value.

Retrosternal cysts often present grave difficulties from their situation and anatomical relations; the best plan to adopt is to clear the upper part of the cyst as far as possible and then to commence the enucleation from below and behind—that is, away from the inferior thyroid and innominate veins. During the necessary manipulations it is advisable to keep the head raised so as to relax the trachea.

In extirpation it is most convenient to commence by exposing and ligaturing the vessels entering the upper pole of the gland; the middle thyroid veins are then clamped and divided and the gland is turned downwards and inwards so as to expose the inferior pedicle; this is ligatured through thyroid tissue so as to avoid possible injury to the recurrent laryngeal nerve and to leave a small amount of tissue if the whole gland is extirpated.

In cases of hemithyroidectomy I have usually found it best to remove the entire isthmus, any bleeding from the point of division being checked by means of a figure-of-eight stitch of fine catgut. The isthmus may be very adherent to the trachea, especially in old-standing cases or in cases which have been treated by x rays, and considerable care is necessary to avoid injury to the trachea, an accident which occurred in one of my cases which had had extensive x-ray treatment elsewhere; in this case a small slit was made in the trachea, this was sutured with fine catgut with no untoward result. In complete extirpation each lobe is dealt with separately, the isthmus being left undivided so that the gland may be removed entire.

Drainage is required in all cases so as to avoid the formation of a haematoma, as a certain amount of oozing is inevitable even with the most careful haemostasis. Haematomas, in addition to the prejudicial effect on healing, may cause dangerous respiratory embarrassment from pressure on or kinking of the trachea. Experience of all methods of drainage has convinced me that the best drain is a $\frac{3}{8}$ in. soft walled rubber tube with one side perforation near the end. Drainage is maintained for twenty-four to forty-eight hours.

Suture of the incision should be in layers—that is, platysma and skin separately. The platysma is drawn together by a continuous suture of fine soft catgut, interrupted at the point of drainage; for the skin I now use interrupted fine fishing gut stitches in preference to any other method. At the point of entry of the drainage tube two separate fishing gut stitches are inserted; these are left untied, and traverse the skin and platysma obliquely, so that more of the platysma is taken up than skin; they are tied the day after removal of the tube, and with a little manipulation perfect apposition of the skin edges is possible. Stitches are removed on the fourth day, with the exception of those at the point of drainage, which are left to the sixth day. The majority of the patients were up on the fifth day and left hospital on the eighth to tenth day.

Dressing.—A very abundant gauze dressing should be used in the first instance to soak up any oozing from the wound; over this a pad of wool is applied, and the whole is fixed by means of a double figure-of-eight bandage. In order to prevent the wound being infected by any

vomited material the upper edge of the dressing should be sealed down by means of collodion.

After-Treatment.—After the first few hours the most comfortable position for the patient is sitting up supported by a number of pillows. Feeding should be by fluids only for the first two days, after which time ordinary diet may be gradually resumed.

Complications and Sequelae.

Severe bronchitis ensued in three of the cases; this delayed convalescence, but left no permanent ill effects—it was in all probability due to the omission of the preliminary atropine injection in at least one case.

Wound haematoma occurred in four cases, fortunately without ill effect other than delayed healing; this was due to the use of too small a drainage tube.

A persistent mucous fistula, after the enucleation of a cyst, occurred once. This lasted for three weeks, and was probably due to a mild degree of sepsis.

CASES RESEMBLING ENCEPHALITIS LETHARGICA

OCCURRING DURING THE INFLUENZA EPIDEMIC.

BY

J. BROWNING ALEXANDER, M.D.,

LATE MAJOR R.A.M.C.(T.C.).

THE report on two cases of encephalitis lethargica by Brasher, Caldwell, and Coombe in this JOURNAL (June 14th, p. 733) leads me to place on record the following notes, which I wrote, but did not publish, during the influenza epidemic in France in 1918 and early in 1919, because the cases coincide in many points clinically with those reported by them. My object is to emphasize the possible relation between the two obscure conditions—"encephalitis lethargica" and the "influenza" of last winter.

In that epidemic of influenza many cases presenting cerebral symptoms were recorded. These symptoms usually took the form of drowsiness, delirium, melancholia, and, in rare cases, mania. Cases showing such mental disturbances together with transient paresis of groups of muscles have not, as far as I know, been recorded in association with influenza.

In a report made to the Local Government Board in 1918, on an obscure disease to which the name encephalitis lethargica was given, many cases resembling the ones I detail below were described. They differed, however, from them in certain points—namely: (1) The onset, which was more gradual in my series; (2) the short duration with complete recovery in all of my cases; (3) the ophthalmoplegia with marked ptosis, which was a constant feature in the cases of encephalitis lethargica, was not marked in my series.

Marinesco in a few cases observed a diplococcus in the foci of cerebral inflammation, or in their neighbourhood, but himself admitted that these observations required confirmation.

For purposes of comparison with the cases which I describe below I briefly set down here a few of the symptoms met with in encephalitis lethargica:

Early stage: Slight malaise, with increase in temperature, headache, and drowsiness.

Later stage: Lethargy—sometimes going on to complete mental stupor—paresis of muscles or group of muscles, ophthalmoplegia, ptosis, facial palsy. In some cases third or fifth nerve involvement, together with involvement of peripheral nerves—polyn neuritis type.

The main feature in these cases, and the one common to all the cases, was lethargy, and there were always associated with it other nervous manifestations—namely, third nerve involvement, fifth nerve involvement, or polyn neuritis.

The close anatomical association of the efferent nerve fibres bringing environmental impulses to the thalamus with the nucleus of the third nerve and its emergent fibres would explain how any lesion in or around that region would produce probably also a cutting off of these environmental impulses and result in a state of stupor, as well as ophthalmoplegia, and other third nerve involvement noted in these cases. The cases of facial paralysis and other nervous manifestations associated with stupor, but not showing any third nerve paralysis, suggest a lesion near but not actually in the nucleus itself, together with other lesions generally in the nervous system—for example, the pons or spinal cord.

Histologically it was shown by Marinesco that the lesions were of an inflammatory nature, and were characterized by adventitial infiltration of the small vessels, particularly the venules, by plasma cells and lymphocytes.

The five following cases occurring about the same time, and during the period of the influenza epidemic in France, are similar in many respects clinically to the case of encephalitis lethargica reported in 1918.

CASE I.

Pte. W.; admitted to hospital on January 5th, 1919. Onset of illness on December 28th, 1918. History of acute onset; malaise, general pains, headache. Temperature about 100° F.

On admission the chief symptoms were mental dullness, slow cerebation, twitchings of both arms and legs. Slight facial paresis on the left side. Pupils dilated; fundi showed engorgement of retinal veins; *tache cérébrale*; no retraction of head, no Kernig's sign, no pyrexia.

January 15th. Condition improving; facial paralysis gone; mental condition better; cerebation quicker.

January 17th. Condition still improving. He was evacuated to the United Kingdom on January 22nd.

CASE II.

Cpl. J.; admitted January 5th, 1919. Onset of illness December 29th, 1918. First complaint was headache, pain in eyes, diplopia and defective vision in left eye; irregular pyrexia.

On admission he was dull mentally, resented being touched, cerebation was very slow; he answered questions slowly but intelligently. The pupils were dilated, but equal, slight internal squint (L.), and left facial paralysis. Slight choked left optic disc. Marked vertical nystagmus present. No history of ear trouble. No specific history obtained. No head retraction; no Kernig's sign; *tache cérébrale* present; deep reflexes increased.

January 7th. Improving. Mentally better; sees better—still has slight diplopia and vertical nystagmus.

January 11th. A few rhonchi in chest. Mild pyrexia otherwise better. Facial paralysis less marked.

January 17th. Facial paralysis gone; great improvement mentally. Temperature normal and lungs clear. Diplopia and vertical nystagmus still persists.

January 24th. Improving; still in hospital.

CASE III.

Pte. R.; admitted January 7th, 1919. Onset of illness January 2nd. Headache and pains in back; eyes tender, complaints of difficulty in seeing; vomited once; no facial paralysis. On admission he was dull mentally, resisted when touched; cerebation was slow; the pupils were dilated and there was some conjunctival suffusion; fundi showed fullness of retinal veins and some obscuring of optic disc margins. Neither retraction of head nor Kernig's sign was present; the knee jerks were exaggerated, and the plantar reflexes of flexor type. Slight facial paresis (L.). He had attacks of intense drowsiness lasting about an hour in which he could not be roused.

January 18th. Condition improving; sees better, headache less; much brighter; temperature normal.

CASE IV.

Pte. J.; admitted January 7th, 1919. Onset of illness December 21st, 1918. Pain in head and back, cough and some abdominal discomfort; complained of tenderness of eyes. On admission there was no pyrexia; he was dull mentally, listless, and not inclined to answer questions. He complained of headache and eye pains; the pupils were widely dilated; the fundi showed fullness of retinal veins, but the optic discs appeared normal; slight facial paresis left side. A few crepitations and moist sounds throughout both lungs.

January 15th. Much brighter mentally; facial paresis gone; pupils still dilated, but no headache or eye pain complained of. Temperature normal.

January 20th. Appears quite normal. Chest clear.

CASE V.

Cpl. R.; admitted January 7th, 1919. Onset of illness December 11th, 1918. He had severe headache and quickly became unconscious. The pupils were unequal, the right larger than the left. Some weakening of left arm and leg. Incontinent.

On admission he was fully conscious, but very dull mentally. He complained of pain in head and both eyes; the pupils were equal and reacted to light and accommodation. The fundi showed marked fullness of retinal veins and obscuring of the margin of the optic discs. There was paresis of the left side of face, and weakening of the grip of the left hand. Deep reflexes were obtained; plantar reflexes of flexor type. Kernig's sign not present; *tache cérébrale* marked. Lumbar puncture: clear fluid obtained under increased pressure. Cell count 200 per c.mm., chiefly lymphocytes. No growth on legumen agar after forty-eight hours. Growth on blood smeared agar of a small Gram-negative bacillus. Small Gram-positive diplococci were present also. Leucocyte count, 9,500; lymphocytes and polymorphs in usual proportions.

January 17th. Condition improving; facial paresis still persists. Much brighter mentally; answers questions sensibly, but cerebation still slow.

January 20th. General condition improved, facial paresis almost gone. Much brighter mentally.

January 25th. Still in hospital; improving.

In addition to these, three other cases diagnosed clinically as influenza developed well marked unilateral wrist-drop. Another presented definite peripheral neuritis affecting both arms and legs, while in a fifth case there occurred during the influenzal attack a paralysis of the muscles of the upper parts of the pharynx.

All these cases, as in the first five, were marked by mental lethargy. As all recovered nothing is known regarding the actual anatomical lesion which produced the nervous phenomena, but it seems possible that it did not differ greatly from the lesion found in the cases of encephalitis lethargica.

The question which has still to be decided is, What is the nature of the infection?

A CASE OF HYDROPHOBIA EIGHTEEN MONTHS AFTER INFECTION.

BY

SIR PETER J. FREYER, K.C.B.,

COLONEL I.M.S. (R.).

In 1885, when I was Civil Surgeon of Mussoorie, a case of hydrophobia came under my care which made a great impression upon my mind, partly owing to the distressing circumstances which attended so acute a case, partly because I was constantly at the bedside of the patient, and partly because I was able to ascertain that the bite by a rabid dog to which the disease must be attributed had been inflicted eighteen months before the disease developed. The notes of the case were published in an appendix to the annual report of the Army Medical Department for 1884, but in the circumstances of to-day I feel justified in reproducing the story since that publication is not generally available.

The patient was a lieutenant in a Bengal cavalry regiment, aged 24. I was called to see him at 6.30 p.m. on September 27th, because, as he thought, he had been suffering from fever for the previous two or three days. The temperature was normal, the pulse somewhat rapid and weak; he was bathed in cold perspiration, and seemed nervous and depressed. He stated that he had had fever during the whole of the day, and that he was then in the sweating stage; from the general symptoms I had no reason to suspect otherwise, but there was one symptom I noticed at the time as peculiar. Whilst I was speaking to him he suddenly sat up on the couch on which he was lying and complained of a peculiar sensation as if the upper part of his chest was being compressed. I examined the lungs and heart and found them normal, and concluded that the sensation complained of was due to some cerebro-spinal irritation, such as one sometimes meets with in malarial fevers. He also complained of sleeplessness. He made light of his illness, and stated that it was only in deference to his wife's wish that he had allowed me to be sent for. I prescribed the usual remedies for intermittent fever. He had some quinine pills by him, each containing three grains, and I saw him take two of these. He swallowed them dry, not using any liquid to wash them down. I remember his remarking that he preferred taking them without any fluid. There was then no difficulty in swallowing the pills.

At 5 next morning I had the following note from Mr. T.: "It has just occurred to me that I may have hydrophobia, as I cannot touch water. I was bitten by a mad pup about two and a half years ago at Agra, in the right hand. My right arm pained me a few days ago for no apparent reason." When I saw him half an hour later he was suffering from all the symptoms of well marked hydrophobia. He was lying in bed, bathed in cold clammy perspiration. He was extremely depressed and very restless. The pulse was very weak and rapid. The eyes were sunken, wild, and unnatural. Anxiety, distress, excitement and terror were depicted on his countenance. He was extremely nervous, disturbed by any sound or movement. The characteristic paroxysms of laryngeal spasm were well marked, and recurred frequently. They set in with a shivering of the body, which gradually increased in intensity, till the whole frame became violently agitated. He sprang suddenly from the lying into the sitting position, with the head bent on the chest, gasping for breath and foaming at the mouth, or he clutched the bed-head rail and struggled violently with the spasm. He spat out viscid mucus, which accumulated in the throat and mouth. The spasms were accompanied by the peculiar dry, hoarse, sonorous cough which is popularly regarded as resembling the barking of a dog, but to which it has no real resemblance. It is produced by the attempt to get rid of the accumulated mucus in the throat by coughing. All the above symptoms gradually increased in intensity till they reached a climax that was distressing to behold; then they gradually subsided, till the patient fell back in bed exhausted, trembling, and bathed in perspiration.

These paroxysms of suffocation were produced by any attempt to swallow either food or drink; even the suggestion

that he should swallow anything was sufficient to bring them on; and he therefore entreated that no attempts to make him swallow medicine should be made, as they would be both useless and injurious. The paroxysms were induced by various external influences, such as the sight or sound of water, any sudden movement of persons in the room, the rustling of a dress, the creaking of boots, the opening or shutting of a door, a current of air, or rays of light. For instance, as the sun rose in the morning the rays of bright light suddenly passed into the room, through a skylight, and this was sufficient to induce a spasm. Again, he heard the noise of the *bhisti* (water carrier) pouring water from his *mushuck* (water bag) outside, and this brought on a violent paroxysm. On one occasion he complained of a desire to pass urine, but when the chamber utensil was brought to him he was unable to micturate, and a paroxysm was induced. He subsequently passed urine involuntarily. The paroxysms of suffocation also came on spontaneously. He could not bear anyone to approach the bed in which he was lying. It was with the greatest difficulty I managed to feel his pulse and administer medicines hypodermically. The fearful paroxysms of suffocation, accompanied, as they were, by the sudden springing up in bed, were sufficient to unnerve the strongest man, and would, to the unprofessional mind, give the impression that the patient was a violent maniac. But there was no violence exhibited. The patient was rational till shortly before his death. He spoke sensibly about his affairs, recognized the fact that there was no prospect of his recovery, and met his fate with fortitude. There was no delirium or incoherence. He repeatedly assured me that there was no actual pain, merely the distressing symptoms connected with the disease.

He spoke about his case; he said that two and a half years ago he, amongst others, had been bitten by a pup which subsequently died mad. I afterwards ascertained that the period was one and a half, not two and a half years. The wounds were not cauterized at the time, as the pup was not supposed to be mad. For some time after he had a dread of hydrophobia, but latterly, for months, the idea had completely vanished from his mind. He now remembered that the present attack had commenced three days before with pain in the thumb and forefinger that had been bitten. He said to his wife at the time that he could not hold his pen. This pain passed up the arm and fixed itself in the right shoulder for a time, and there was numbness of the whole right upper limb; this he thought was merely rheumatism. These symptoms were followed by slight fever, with lassitude, weakness, and distaste for food and drink. But it was not till the early morning of the day on which he died that the awful reality flashed through his mind, when he found that he could not swallow fluids.

The paroxysms, already described, at first increased in frequency and violence, each leaving him more and more exhausted; but about noon they began to diminish in frequency and force, and he died of exhaustion at about 5 p.m.

I had the advantage of seeing several medical officers in consultation during the course of the day. They all recognized the hopeless state of the patient. It is only when placed face to face with a case of this dire disease that one recognizes the intility of any drug to stay its fearful course. During the day hypodermic injections of morphine in doses of $\frac{1}{4}$ to $\frac{1}{2}$ grain were administered every two hours or so, and to one dose was added $\frac{1}{10}$ grain of atropine. These had the effect of greatly calming the nervous symptoms and allaying the violence of the spasms.

This case involves several points of interest:

1. The unusual length of the period of incubation. From inquiries I made it was established that he was bitten at Agra in the end of March, 1884. This is clear from the statements of his connexions, and that of an officer of the 29th Native Infantry, to which regiment he then belonged. The period of incubation was therefore one and a half years; the ordinary period of incubation in this disease varies from three to six weeks, and authors distrust the accuracy of statements in cases when the disease is alleged to have occurred at lengthened periods after a bite from a rabid animal has been contracted, and think that the disease is confounded with tetanus and other nervous diseases which have some resemblance to hydrophobia.

2. That this was an undoubted case of hydrophobia, however, there can be no question. I have seen several cases of hydrophobia myself; and all the medical officers that saw this case had no hesitation in at once pronouncing it hydrophobia. Indeed, not one typical symptom of that fearful disease was absent.

3. It is sometimes argued that nervous symptoms resembling those of hydrophobia may be induced by fear after a person has been bitten by a rabid animal, and that these symptoms may actually prove fatal through the shock to the nervous system. No such argument can apply in this instance. The history of the case shows that all fear of hydrophobia supervening had passed away, and that the patient had for three days been suffering from the premonitory symptoms of the disease without any suspicion of its existence entering his mind. It is with a view to make this point clear that I have sketched the

history of the case in a somewhat irregular fashion, and not in accordance with the natural sequence of the symptoms.

4. The most important point, however, connected with the case is, fortunately, of a practical nature, and one to which I desire to call especial attention. The history tends undoubtedly to prove that the poison received from the bite of a rabid animal does not, as in the case of snake poisoning, rapidly invade the system, but remains localized at the seat of injury for an indeterminate period; and, maturing there by some peculiar process, suddenly, after the lapse of days, weeks, months, or years, invades the system. On no other theory can we explain the fact that the first symptom in the actual development of the disease was pain in the seat of the bite. The fact that the patient had no suspicion as to the nature of the pain or of the premonitory symptoms, that he did not recognize the fact that he was suffering from hydrophobia till the symptoms were fully developed, is of very great importance; otherwise it might be argued that the pain was the result of imagination.

The history of this case goes to prove that the poison remains localized for a period which varies in different individuals. If this theory be correct the practical lesson is that free removal or free destruction of the part bitten, by excision or caustics or both, should be had recourse to. For this purpose when a person has been bitten by a rabid animal the fleshy parts around the bite should be excised freely as soon as possible, care being taken that the excision should extend beyond the parts touched by the teeth of the animal. Should a surgeon not be at hand, lunar caustic, a live coal, or a hot iron should be freely applied to the parts so as to destroy the tissues around the bite. In all cases of bites from animals, even when no suspicion of rabies exists, cauterization should be had recourse to. Should these precautions not have been adopted at the time or soon after the bite, the cicatrix and surrounding tissues should be excised subsequently, should it be known or suspected that the animal had been suffering from hydrophobia. I believe there are sufficient reasons to suppose that had such excision been had recourse to in the case under review, even shortly before the active symptoms set in, the disease would never have developed itself. The lessons taught by this and similar cases should be brought home to the multitude. I believe if the measures proposed (which are not new) were more generally adopted, saving of life would result. When once the active symptoms of the disease are developed the result is necessarily fatal.

Croonian Lectures

ON

THE SIGNIFICANCE OF THE CEREBRAL CORTEX.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS
OF LONDON, JUNE, 1919.

BY

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LECTURES II AND III.

(Abstract.)

In the primitive vertebrate the olfactory areas in the cerebral hemisphere, and the visual and general sensory nuclei in the thalamus and the mid-brain, are linked by means of numerous tracts to the hypothalamus, which at first is a relatively large part of the brain. In the pursuit of food, as well as in the animal's other vital activities, this large hypothalamic apparatus is thrown into action as soon as the sense of smell excites a response. By means of numerous descending tracts the hypothalamus exerts a widespread influence upon a variety of visceral and vasomotor functions, some of which stir into activity the glands and other structures directly concerned with the processes of swallowing and digestion, as well as other mechanisms which enable the creature to devote the whole energy of its body to the immediate and vital purpose of the pursuit. And when the consummation of the reaction is attained, and the buccal mucous membrane is

itself stimulated, ascending tracts carry to the hypothalamus the effects of this excitation of the taste organs, and through it stir up even more potent effects in the digestive and other visceral systems.

It is something more than a mere coincidence that the pituitary body is developed from a combination of buccal epithelium and hypothalamus, and is an organ which excites (no doubt by very different means) profound effects in the visceral systems, in some respects analogous to that obtained by the neural bucco-hypothalamic connexion.

Thus the hypothalamus represents the mechanism whereby the instruments concerned with the phenomena of consciousness can influence the visceral functions of the body, and express those manifold emotional effects which play so obtrusive a part in many experiences that are strongly charged with affective tone.

In the first lecture emphasis was laid upon the anatomical facts (a) that the cerebral hemisphere was derived from and built upon what in the primitive vertebrate was simply the receptive instrument for smell impressions; and (b) that the olfactory tracts, unlike all the other sensory paths, lead directly to the cerebral cortex without the intermediation of the thalamus. The primitive hemisphere, therefore, must have been the instrument whereby the affective aspect of smell was appreciated—that is, it performed the functions with which the thalamus is concerned for the other senses.

Guided by the sense of smell, the behaviour of the primitive vertebrate is brought under the influence of other "distance-receptors," which secondarily acquire an affective significance or meaning by being brought into intimate relationship with the dominant sense. Specializations of structure and function then develop by the cultivation of these other senses, often at the expense of the sense of smell, and animals like the teleostean fishes are evolved which are guided mainly by vision. This determines a high development of the mid-brain and a retrogression of the cerebral hemisphere. Incidentally such creatures lose the possibility of further advancement in the direction of the higher vertebrates, not merely because they have become specialists, but also because the adaptability of the cerebral hemisphere upon which real progress depends has been sacrificed in the acquisition of visual efficiency.

After discussing other variations that occur in fishes, the momentous changes effected in the brain by the adoption of life upon land and the emergence of the Tetrapoda were next considered.

The new mode of life demanded not only the development of entirely new modes of locomotion, but also a transformation of the distance receptors of the hind-brain, as well as the organs of smell.

For the organ that was evolved to detect slight movements in the water became the organ of hearing, and the olfactory mucosa, which was specialized to respond to very delicate forms of chemical stimulation, now became much more highly sensitive and adapted to appreciate the more subtle effects of minute air-borne particles of odoriferous substances.

The heightened powers of smell, the new powers of hearing, and the necessity for acquiring new methods of locomotion, provided a powerful stimulus to the cerebral hemisphere; and there are reasons for supposing that the earliest Tetrapoda were provided with a brain with a well-developed cerebral cortex. But their surviving amphibian descendants only in part emancipated themselves from the aquatic mode of life, and were satisfied with slow-going clumsy movements of a simple character. As the result their cerebral cortex underwent a process of retrogression, and the amphibia dropped out of the race for vertebrate supremacy.

But one group of proto-amphibians was more progressive. They acquired the power of more rapid movement and of more varied response to the influence of their environment. The sensitivity of touch, smell, vision, and hearing became heightened and the influence of these senses so intimately integrated by revolutionary changes in the cerebral hemisphere as to make possible a much more complex and intelligent behaviour. The increasing significance of vision, hearing, and touch, found expression in the sudden growth of the thalamus and the development of larger tracts of fibres ascending from the thalamic nuclei into the lateral edge of the pallium, which then suddenly expanded and bulged into the ventricle. The great mass of low-grade

pallium, which may be called "hypopallium," thus formed represents the first relatively independent representation in the cortex of the senses of vision, hearing, and touch, at first chiefly of the trigeminal nerve. Then for the first time the cerebral cortex became an instrument whereby these senses played a combined part in controlling behaviour and added their quota to the discriminative side of the animal's consciousness. The reptile thus came to acquire the power of learning by experience from other senses than smell and of correlating the information acquired by touch, vision, and hearing, to perform acts of discrimination in which these several senses took a definite part.

But this hypopallium was an imperfect instrument; and when it became superseded by the development of the higher mechanism of the neopallium, it (the hypopallium) became converted into [the greater part of] the nucleus caudatus, the putamen and the claustrum.

RECONSTRUCTION IN MEDICAL EDUCATION.

BEING THE PRESIDENTIAL ADDRESS DELIVERED TO THE METROPOLITAN COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

BY

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WHEN Peter, in *Joan and Peter*, was asked by his guardian to plan his own school, Peter considered and then said, "I'd like lessons about the insides of animals, and about the people in foreign countries—and how engines work—and all that sort of thing."

This was revolutionary, and, according to the recognized educational authorities, could not be permitted under any circumstances; hence Sydenham's visit to the appointed source of knowledge proved a dismal fiasco, and he was faced with the task of finding a sphere within which "reconstructed" education was really existent. He failed to find it, and by just such a degree Peter failed to secure what such an education would have provided. He was not much the worse for it, but he might have been so much the better had he had it.

The medical schools of Great Britain and Ireland have always had before them one principal object—the training of good general practitioners of medicine—and they have succeeded, for there is no other country in the world where such excellent men and women doctors can be found.

But medicine, surgery, and the allied subjects are always advancing, and the capacity of the human brain finds it difficult to keep pace with the advancement. For this, if for no other reason, reconstruction in medical education is called for.

Let me instance what I mean. When I was a student, not so very many years ago, all the medical out-patient work was done in a poor ill-equipped set of rooms, hidden away in a remote and rather dark corner of the hospital. Now there is a whole suite of rooms, well lit, well equipped, and used solely for its purpose. All the operative work on the surgical side was performed in a single operation theatre not used every day of the week. Now there are thirteen operation rooms of various sizes and for different departments. The entire accommodation for pathology was a poorly furnished room off the physiological department, enough perhaps, as only about half a dozen varieties of bacteria were known. Now the sections of pathology, general, histological, bacteriological, chemical, and research, are housed in a building which cost £30,000; and so it is with every other department.

In the face of these facts how is the student to be taught so that what he learns shall be adequate and sound? This is really the problem of reconstruction in medical education. The old was good, and the good that was in it must not be lost. The new is better, but its very vastness implies a danger. The preliminary and intermediate subjects, all of which are large sciences in themselves, have the possibility that they may be taught from an academic rather than from a practical point of view. Physics, chemistry, and biology—the foundations of a medical

education—must be taught, sometimes sufficiently learnt, at school, but they ought to be taught in their bearing upon the practice of medicine, hence perhaps the value of their being so taught at a medical school. At the public school, even with a modern side, the education in these sciences is apt to be sketchy and subsidiary, and frequently quite apart from their after-relation to medicine. At a university or medical school or science department they may be too elaborately expanded. Physiology and anatomy, the ground floor of medical knowledge, huge subjects and needing to be kept within bounds, must receive their proper and proportionate place. Physiology is the more difficult to handle. It is less concrete, constantly changing, somewhat elusive and uncertain, but the knowledge of all natural and normal functions is essential for a proper estimation of the abnormal as seen in disease. Anatomy, with its solid parts and form, is increasingly important with the expansion of operative procedure. The pure physiologist and the pure anatomist teaches without daily contact with the clinical, and are apt to wander from the practical application of their facts to the everyday practice of medicine and surgery, and in this lurks further danger. To a large extent this can be avoided by closer inter-relations between these teachers and the clinical side. It is helpful to all concerned when the physiologist and the anatomist accompany the physician into the ward or out-patient room and discuss, in the hearing of the students, the bearing of their subjects upon a somewhat obscure nervous lesion. In "reconstructive" plans this "team" work between the intermediate (and even the preliminary) subjects should bear an important part.

In the advanced subjects—medicine, surgery, obstetrics, gynaecology, ophthalmology, and all the allied departments—the enormous strides made in methods of diagnosis and treatment has made the task of the teacher more and more intricate, and the burden on the student of absorbing and retaining what he is taught more and more difficult. Whatever else happens, nothing must occur which shall imperil the splendid bedside and other practical teaching for which British medical education is so famous. It forms the superstructure of knowledge for subsequent practice. It brings the student into personal and close contact with the patient. It develops all that *tactus eruditus* and all that *savoir faire* which should enter so largely into the character and actions of the practitioner. Go where you will, and you cannot find better general practitioners than in our isles and in our empire. But this fact must not blind our eyes to the vision of even better men and women—better equipped, better paid, and better rewarded in the future than in the past.

For all this reconstruction in medical education is surely needed; not revolution but reconstruction, not throwing away the good in the old, but grafting on the better in the recent.

Sir George Newman, to whose recent *Notes** must be ascribed a great up-lift for medical education, has put the finger on the spot when he writes: "There is too little medical teaching of university standard, especially in the final or clinical subjects."

There can be no doubt that it is due primarily to the fact that the clinical teachers when their experience is ripe have not the time, and often have not the inclination, for such teaching. The more the pity, but there is the bald fact. The primary question, therefore, would seem to be. How can this defect be overcome?

A possible solution, and one which will soon be put to the test, is the foundation of units of a professional type in the three chief branches of medicine—surgery and obstetrics and gynaecology. Men (or women) in the prime of life, of proved teaching ability, of ripe experience, with the love of and powers for inculcating a scientific spirit, appointed as whole-time professors or directors of clinic. Associated with them, assistant professors in training for professorships in their own school or elsewhere, and other well-paid assistants, clinical and pathological—the whole unit working together as a team.

They would undertake bedside teaching, possibly upon a series of cases—say of types of anaemia—gathered together in their wards at that time for special research work; out-patient teaching, again perhaps on a group of similar cases,

say types of hernia; super-clinical lectures, thoroughly worked up, with cases, skiagrams, drawings, lantern slides, and even cinema films; and co-ordinated, physiological, anatomical, and pathological teaching. It is hoped that every student will be brought in contact with the professorial unit during some part of his clinical education. Whilst the personnel of the professorial unit are engaged in this teaching of a university character, the other clinical units will continue their sound and essential teaching both in-patient and out-patient, and will have associated with them students of all grades. By this means proper use will be made of the large amount of clinical material that finds its way to a hospital with an attached school.

Such is the vista: much may come of its accomplishment. There are difficulties. The type of men is rare, adequate money is not readily forthcoming, organization is none too easy; but difficulties are there to be overcome, and with perseverance they will be. It is particularly desirable that what we can recognize as bad, or at least poor, in the Continental type of clinical professor should be excluded in our reconstruction, but it is equally necessary that all that is good should be included. The thoroughness, the painstaking, the science of many can be taken, but the inhumaneness, the machine-likeness, and the want of imagination of some can be avoided.

With the end of the war the medical schools are being filled with eager students, many of whom have learnt a wider and finer outlook of life and its responsibilities, and it is only right that they should be provided with an education which will fit them for their life's work, and will give them such a grip of things that they will be a credit to their teachers and become a power in the land.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACRIFLAVINE IN THE TREATMENT OF GONORRHOEA.

IN a memorandum in your issue of June 7th Captain Armstrong cites his experience with acriflavine, in contradistinction to that of Davis and Harrell, as evidence of the divergent views of different observers. May I offer a few suggestions which may enable any who have met with similar difficulties to approximate the clinical results to the laboratory results which are acknowledged?

One must be as confident as it is possible to be that the infection is limited to the anterior urethra before adopting the syringe method of treatment. The main point in this connexion is the number of days since the appearance of the discharge; there must be no increased frequency of micturition, and, of course, neither pus nor blood in the second urine glass. But in spite of careful selection, there will be a considerable percentage of error owing to cases coming under observation during the incubation period of posterior urethritis. For this and other reasons I prefer as a routine treatment the lavation method described in my paper published in this JOURNAL on May 10th.

Acriflavine solution 1 in 1,000 may be irritating to the urethra, if used frequently and freely, or if unfiltered. When using the syringe method I prescribe a strength of 1 in 500 acriflavine in 1.6 per cent. sodium chloride solution, which is filtered by the dispenser, and in use is diluted with an equal quantity of warm water. The directions are that the syringe is to be used three times a day, and once in the night if occasion serves; the urethra is to be gently filled three times and the solution retained for one minute on each occasion. There is, however, no reason why a weaker solution (say 1 in 2,000) should not be used in a specially sensitive urethra; irritation must never be excited. For lavation 1 in 4,000 should not be exceeded.

The absence of gonococci at the end of three weeks' treatment in 17 of the 23 cases quoted is so far satisfactory. The presence of pus cells and mucus was to be expected in the irritated condition of the urethras which is described. The six cases in which gonococci persisted called for further examination and a fuller diagnosis. There may have been posterior urethritis, a minute cystic gland oozing at intervals, or a long infected duct; any of these call for special treatment.

* *Some Notes on Medical Education in England*. H.M. Stationery Office, 1918, price 9d. See Sir Clifford Allbutt's review in the JOURNAL of August 3rd, 1918, p. 113.

In several thousands of patients treated with acridavine I have never encountered retention of urine, except in three cases of prostatic abscess.

Glasgow.

DAVID WATSON.

CREOSOTE IN PNEUMONIA.

THE article on inunction of creosote in pneumonia and influenza published in the *JOURNAL* of April 19th, by Major Wells, is of great interest to me, although my experience was with much larger doses, but Major Wells does not tell us how often he gives his half-minims in the twenty-four hours.

Some years ago—I am on active service, and so cannot give the date—I published in the *Canada Lancet* a series of 500 cases of pneumonia treated with creosote carbonate, with four deaths. I was led to draw the following conclusions:

(a) There was a marked absence of crisis; the temperature and respiration began to improve within four hours of the initial dose. If not, the case had been seen too late to be helped by any treatment.

(b) If the dosage was stopped there was an immediate return of all symptoms and rise of temperature.

(c) The drug had to be continued for some days (seven to ten) after all fever had disappeared and respiration had been normal.

(d) My best results were obtained with creosote carbonate in doses of min. 15, repeated every three or four hours. Guaiacol carbonate gr. xv did well in the absence of creosote, and better where tubercle was suspected. For children a drop in honey every hour was well borne. As soon as there was an amelioration the interval between doses was gradually lengthened.

The effect of the minute dose as given by Major Wells is a substantial confirmation of my own findings. The drug is excreted by the lungs, and the odour is perceptible in the room of the patient soon after the treatment is begun. I, too, consider it almost a specific.

I shall always regret that I had no opportunity of testing it in the pneumonia of influenza.

ASHTON FLETCHER, M.D., C.M.,
Acting Major R.A.M.C. (Temporary Commission).

INTUSSUSCEPTION ASSOCIATED WITH A FOREIGN BODY: OPERATION: RECOVERY.

A BOY, aged 1 year, was admitted to Savernake Hospital under me, with the history that for fourteen days he had had acute abdominal pain, had vomited three or four times daily, and was unable to keep down any food. There had been no action of the bowels since the onset of the symptoms, but a little slime had been passed by the rectum for the last ten days, and latterly this had been streaked with blood. He was very ill and pale, though not so wasted as might have been expected from the history; the tongue was coated with fur but moist. Little could be made out from examination of the abdomen, as the child screamed continually and the recti were held very tight. It was thought that a tumour could be felt in the right flank, but this was not certain. No tumour could be felt on rectal examination but the right iliac fossa seemed to be unusually empty, and there was blood and mucus on the examining finger. Intussusception was diagnosed.

When the child was anaesthetized a perfectly definite tumour was felt in the right hypochondrium; but after about two minutes it disappeared.

The abdomen was opened through the lower part of the right rectus, and the intussusception found as a large tumour lying below the right lobe of the liver; this was partially reduced before the main mass of the tumour could be withdrawn through the abdominal wound. It was then found that the intussusception was of the ileocolic variety, the whole of the caecum and the appendix, which was 6 in. long, being involved in the middle wall of the intussusception. Reduction, with separation of adhesions, was effected with considerable difficulty. The bowel was examined for polypus or other cause of the trouble; the ascending colon and caecum were found to have an unusually long mesentery, but nothing else abnormal was detected. The colon and upper end of the

caecum were then fixed in their usual position by means of two catgut sutures, and the abdomen closed. The appendix was not removed owing to the child's condition.

Progress was rapid and uneventful for three days; the temperature did not rise above 98° F.; there was no vomiting; nourishment was well taken, and the bowels were open daily.

On the morning of the fourth day the temperature rose to 99° F., and remained between 99° and 99.2° for seven days; for the first five of these days this was accompanied by some diarrhoea, and the child vomited four or five times. There were no other symptoms or signs; the appetite remained good throughout. After seven days the temperature returned to normal.

Three days later the motions were again loose, and the bowels acted four times in the day; the glass eye of a toy teddy-bear, the size of a pea and fixed to a blunt pin 1 in. in length, was passed by the rectum.

The child made a good recovery, and convalescence was otherwise uneventful.

The teddy-bear, minus one eye, was found at home by the mother, and the remaining eye, when removed, was found to be identical with the one which the child had passed by rectum. None of the toys in the hospital had similar eyes, so that the child had evidently swallowed the eye before admission to hospital, and one might conjecture that he must have done so when well, and with a healthy appetite.

Marlborough, Wilts.

A. D. HAYDON, M.B., B.C.

ANEURYSM OF THE ABDOMINAL AORTA.

A WEST INDIAN native, aged 38, in Government employment, was sent to hospital on February 12th, 1919, with a provisional diagnosis of arthritis of the left hip-joint. He complained of pain over the area of skin, in the gluteal region and just above the iliac crest, supplied by the anterior branch of the twelfth thoracic nerve. The pain was persistent and kept him awake at night. He lay with the thigh slightly flexed and had considerable discomfort upon either extension or further flexion. There was no swelling, oedema, or tenderness in the region of the hip-joint nor over the painful area. There was rigidity of the back in the lower thoracic region, but no pain or tenderness there; the patient had not noticed the onset of the rigidity.

A few days after admission a definite fullness in the left iliac fossa could be felt, and, as the temperature was running irregularly up to 100.6°, the possibility of acute myositis of the psoas—a fairly common condition in natives here—was considered.

About a pint of fresh blood was discharged from the rectum on February 27th.

The swelling in the iliac fossa increased, and on March 10th an incision was made above Poupart's ligament into the psoas, and several ounces of destroyed, congested, dark muscle tissue were removed. There was no pus; the wound was plugged. A few days later there was a slight haemorrhage from the wound, and on March 13th a considerable haemorrhage from the bowels, which were open three times in the morning. Seventeen days after operation a more severe haemorrhage occurred from the wound with collapse greater than could be accounted for by the bleeding from the wound; the latter was explored and re-plugged, nothing being found except more broken down muscle. The patient died on March 29th, two days later.

Post-mortem examination revealed an aneurysm about the size of an egg in sacculated form from the back of the abdominal aorta at the level of the twelfth thoracic vertebral body. The aorta appeared normal from the front but was displaced forwards. The eleventh and twelfth vertebrae were eroded to a considerable extent, and the aneurysm was leaking into the psoas major. The whole muscle was disorganized, and the upper half was more clot than muscle, but gradually the proportion of muscle became greater until in its lower part, where opened into, there was a congested, swollen mass of muscle, very dark and infiltrated with blood. There was no leakage outside the muscle sheath. The left psoas was about three times as big as the right.

W. R. PARKINSON, F.R.C.S.

Lagos Hospital, Nigeria.

Reviews.

TEXTBOOKS OF PHYSIOLOGY.

WHEN a textbook of physiology reaches its seventh edition in a matter of thirteen years it is evident that it has met the students' needs, and the seventh edition of Professor HOWELL'S *Textbook of Physiology*¹ maintains the many good points on which so much stress has been laid in the past. Perhaps of all the textbooks on the market to-day it is the best written, but herein lies a very real danger to the ordinary student who does not think enough about what he reads. The drawback to Professor Howell's book is that it is too easily read, the salient points are not sufficiently emphasized, no hard grit is flung into the mental machinery to make it labour and demand the instant attention of the owner driver. It is a matter for regret that Professor Howell has not seized the opportunity, afforded by the cessation of nearly all physiological research, to recast his book, discarding much of the old material. Take the kidney, for example; surely it is time that much of the old experimental investigation on the secretion of the urine should be relegated to the lumber room, catalogued for reference, but not for memorizing, and that the more modern views, so ably discussed by Cushny and others, should be developed. And why, incidentally it may be asked, is the German spelling of Pavlov's name adhered to? "W" is never pronounced "v" or "ff" in the English or American dialects.

The first edition of the *Textbook of Physiology*,² by Dr. FLACK and Professor LEONARD HILL, which has just been published, is, with perhaps one exception, the most individual of all the textbooks now available. "The book," write the authors in their preface, "has been written with the primary object of giving to the student in an easily understandable form the fundamental facts and theories of physiology, bearing in mind the limitations necessary in a student's textbook." It may be ungracious to say so, but the book does not succeed in doing this. Had it been confined to the fundamental facts and theories of physiology, bearing in mind the limitations set, the book could have been very much reduced in size and issued at a lower price, instead of running to 800 pages and costing 25s. Incidentally, very material reduction might have been achieved by cutting out much of the practical work, principally chemical tests incorporated in the body of the book, work given better and more fully in any practical book for laboratory classes. The volume is divided into thirteen books of varying size and quality. As might be surmised, the sections dealing with respiration are among the most practical and original to be found in any textbook of physiology; the section on the circulation is, on the whole, well done, although here, as elsewhere in the book, the text is marred by some rather careless English. The functions of the skin, and the body temperature, particularly the latter, are discussed in a manner both useful and interesting. The same praise cannot be meted out to the chapters dealing with digestion and metabolism. Although they contain much that is interesting and deal more fully with the subject than many other textbooks, there is much that is not merely ill put but actually misleading. The secretion of urine is dealt with reasonably, but why refer to Bowman and Ludwig by name and ignore Cushny? The endocrine glands, in view of their importance, might have been discussed in more detail. Is there not now enough evidence to justify the separate discussion of the thyroid and the parathyroids? The book dealing with the tissues of motion gives a very just picture of the subject, and that devoted to the nervous system, although a little unequal in parts—the treatment of autonomic system, for example, is scanty—deals with the subject in an interesting manner. The final chapter, on reproduction, treats the subject less as the Cinderella of physiology than most books. The illustrations, which are abundant and for the most part well chosen and well reproduced, are an excellent feature of the book. There is a good index.

At least four textbooks of physiology for students have

appeared this year, and they all labour under the same drawback. The average student's textbook is too big and too expensive. The ordinary medical student is not going to become a specialist in physiology, and the enormous amount of detailed memory work demanded is apt to give him a distaste for the subject. There is room for a book which will expound the principles of physiology, underlining the essential facts without deteriorating into a cram book. Such a book would be of real value to the general practitioner also. As it is, at present the medical student cannot separate the wheat from the chaff, the practitioner has neither the time nor the inclination, and the teacher of physiology is between the devil and the deep sea—between the demands of an antique examination system and his intuitive knowledge that he is overloading the brains of his students, brains which should be cultivated, not used as dumping grounds for archaic hypotheses.

TREATMENT OF INJURIES OF THE LIMBS.

THE orthopaedic effect of gunshot wounds will be felt by only too many of our fellow men for many years to come, and therefore a clear and concise account of the best ways of treating them is most desirable. This we think is supplied by Mr. S. W. DAW in his book entitled *Orthopaedic Effects of Gunshot Wounds and Their Treatment*,³ a recent contribution to the series of Oxford War Primers. In a short foreword Major-General Sir Robert Jones writes of the importance of the experience gained in the military orthopaedic hospitals and of the need for the diffusion of the knowledge gained by that experience throughout the country, in order that the maimed pensioner may be well treated. In some introductory notes Mr. Daw properly insists on the differences between orthopaedics in civil life and in the last four years of warfare; the greatest is the general prevalence of sepsis. He well shows how the difficulties arising from this circumstance are to be met, in his opening pages. The treatment of mal-united and un-united fractures, of ankylosis and of other deformities, either by open operation or by manipulations, splints, and so on, is satisfactorily indicated. Injuries of peripheral nerves are discussed and the lines along which success may be sought are clearly set out. An appendix on the treatment of functional disabilities, by Dr. Cuthbert Morton, concludes the book, which is well illustrated.

In a new volume on prosthetic apparatus for the wounded⁴ Dr. DUCROQUET, orthopaedic surgeon to H. de Rothschild Hospital in Paris, has supplemented that on artificial limbs which he wrote in conjunction with Professor Broca. The association of the two surgeons is maintained in the new book, for a preface is contributed by Professor Broca. In it he laments the neglect to investigate the mechanical physiology of the joints and muscles. Medicine, he says, may have benefited by the too great devotion to chemical methods, but surgery has probably been the loser. Before applying curative or retentive apparatus an exact knowledge of the normal is necessary, and this knowledge Dr. Ducroquet has endeavoured to obtain and set forth in his new volume. He begins by considering the available points of fixation on the various segments of the limbs, and the choice of those most suitable for his purposes, illustrating his theses by drawings of various pieces of apparatus. This chapter is short and clear. That on the axes and mechanism of joints is of great value, for the experimental investigations here recorded should prevent orthopaedic mechanicians and limb makers from falling into the too frequent error of misplacing the joints of their apparatus, and thus causing discomfort and dissatisfaction or worse to the patients concerned. A case in point is that of the otherwise excellent calliper splint of H. O. Thomas; in it the centre of movement may be placed so far below that of the natural ankle as seriously to hinder movement when a T strap is used. The principles of construction of various pieces of

¹ *A Textbook of Physiology*. By W. H. Howell, Ph.D., etc. Seventh edition. Philadelphia and London: W. B. Saunders Co. 1918. (Med. 8vo, pp. 1059; 307 figures. 25s. net.)

² *A Textbook of Physiology*. By Martin Flack, C.B.E., M.B., and Leonard Hill, M.B., F.R.S. London: Edward Arnold. 1919. (Med. 8vo, pp. viii + 800; 485 figures. 25s. net.)

³ *Orthopaedic Effects of Gunshot Wounds and Their Treatment*. By S. W. Daw M.B., B.S. Lond., F.R.C.S. Eng., Captain R.A.M.C. (T.F.). With a foreword by Major-General Sir Robert Jones, C.B., and appendix on functional disabilities by Dr. Cuthbert Morton, M.A. London: Henry Frowde, and Hodder and Stoughton. 1919 (Fcap. 8vo, pp. 242 + xi; 46 figures. 7s. 6d. net.)

⁴ *La Prothèse Fonctionnelle des Blessés de Guerre. Troubles Physiologiques et appareillage*. Par Dr. Ducroquet, chirurgien orthopédiste de l'hôpital H. de Rothschild. With a preface by Professor Aug. Broca. Paris: Masson and Co. 1919. (Cr. 8vo, pp. 253; 218 figures. Five francs + 10 per cent. = 53 francs.)

apparatus are described and the details shown in clear illustrations; the manufacture of boots for normal and deformed feet with and without cork is discussed, and there is an interesting chapter upon the normal gait, studied by means of cinematic photographs. The numerous illustrations and the lucid descriptions form a very useful short guide to the study of walking. In addition there are a number of cinematic illustrations of abnormalities of gait due to various deformities. The section on pseudarthrosis contains many useful hints as to the application of apparatus; that on the examination of muscles is equally useful, and the instrumental treatment of nerve palsies is dealt with adequately. The only cutting operation described is that known as the Duroquet-Lammy operation for spasmodic club-foot; it consists of arthrodesis of all the joints of the astragalus except the tibial. The illustrations are clear, and the explanations of them have that quality of sharp-cut precision which we associate with French scientific literature. The little book will be found useful; its equivalent is hardly to be found in the English tongue. Unfortunately it has no index.

AN X-RAY MANUAL.

THE *United States Army X-Ray Manual*,⁵ prepared under the direction of the SURGEON-GENERAL and of the Division of Roentgenology, is intended, without being a complete treatise on the subject, to serve as a guide for those doing the x-ray work in military hospitals.

Commencing with a chapter on x-ray physics, which is dealt with in a practical and lucid manner, and after a short account of laboratory experiments, a description of new apparatus, standard positions for radiography, dangers and protection, and fluoroscopy, there follows a graphic account of localization. This subject is dealt with in a very practical manner, and from the standpoint of the greatest service for the minimum effort, and with the fullest consideration for the patient. The six methods adopted for the army, and fully described, are the two wire, double-tube shift method; the parallel method; the tube shift method with mechanical triangulation; the profundometer; the Hirtz compass with accessory devices; and the cannula and trocar with harpoon. The working directions for all these are plainly indicated in simple language, and their individual value and advantages compared. Nothing essential appears to have been omitted, and with this book as a guide an army radiologist should be furnished with all the technical knowledge necessary for successful and accurate localization of foreign bodies situated in any part of the human anatomy.

From the military point of view the chapter which succeeds this, on bones and joints, is the next in importance, and stress is laid upon the point that in the radiographic examination of fractures the adherence to a routine and established type of technique is of considerable advantage. In addition to dealing with fractures, in this chapter are to be found short, concise paragraphs indicating the x-ray appearances which are to be expected in the various diseases of bones, conditions which are met with in military as well as in civilian practice.

The remaining chapters deal with the sinuses and mastoids, the teeth and maxillae, the thoracic viscera, the urinary tract, the gastro-intestinal tract, and conclude with a description of the measurement of an x-ray dose, and a short account of cutaneous x-ray therapy, including the treatment of syphilis, favus, and ringworm. There is also a reference to the work of Cole and Knox on the x-ray preparation of gunshot wounds for plastic operations.

A distinctive feature is the large number of illustrations which are beautifully reproduced. These consist in the main of the reproduction of diagrams of apparatus, and of photographs taken expressly to indicate the relative positions of individual parts under examination to the x-ray tube. They are well chosen, and serve to visualize the text and render the technical descriptions clear. A number of typical radiographs are also utilized, but, in contradistinction to most books on radiography, these are comparatively few in number.

Taken as a whole, the book forms an admirable treatise on the subject, more especially from the beginner's point

of view, and whilst essentially written as a guide and aid for the newly trained military radiologist, its general scope is such that it should by no means be limited to these workers, and it can be recommended as a textbook invaluable as an introduction to x-ray work to all commencing the study of this branch of medicine, both medical men and lay assistants.

The publication of a manual of this kind is a further evidence of the efficient manner in which the United States set about to organize, from the very beginning of their entry into the war, the medical services; and also of the foresight displayed in the recognition of the very great importance of thoroughly organized x-ray work to the surgeons and to the wounded.

NOTES ON BOOKS.

IT is nearly a quarter of a century since Mr. JOHNSON SMITH first produced his *Medical and Surgical Help*⁶ for the use of masters and officers of the mercantile marine. The aim of the manual was to serve as a guide to the preservation of health on board ship, and to the treatment of injury and disease at sea and elsewhere when professional aid is unobtainable; and also to arouse active interest in the courses of instruction given by ambulance associations. Since that time the work has passed through several editions, thus proving the esteem in which it is held by shipmasters and officers in the merchant navy. The fourth edition, with the exception of the chapters on first aid and other surgical matters, was revised by Dr. Arnold Chaplin, whose position as medical inspector to the Peninsular and Oriental Steam Navigation Company gave him special knowledge of what such a book ought to be. The parts dealing with the causation of disease—especially those due to tropical conditions—were rewritten, and in other respects the work was brought into line with present day needs. A fifth edition has now appeared, and this can be recommended to those for whom it is intended, though strictly speaking it would appear to be a reprint rather than a revised edition.

Those in search of a well written and sound French textbook of diseases of the skin cannot do better than invest in DARIER'S *Précis de Dermatologie*,⁷ now in its second edition. The bulk of the book deals with the morphology of these diseases, the last three hundred pages with their nosology. It is well illustrated and full of first-hand observations and descriptions that render it a most valuable and practical textbook. It may be warmly recommended to medical students and practitioners alike.

Sir JAMES CANTLIE'S *First Aid to the Injured*,⁸ now in its thirty-second edition, is a standard work that must have been studied by millions of readers. There is no better book for the tyro in the art of giving first aid, and we wish it the continued success it deserves.

The forty-first volume of the *Transactions of the Medical Society of London*⁹ contains a number of interesting papers, including one (the presidential address) by Sir St. Clair Thomson on the foundation of the Society, and others on such subjects as "The value and limitations of sanatorium treatment," "The surgical and dental treatment of facial injuries," and "Aviation and medicine."

The *Transactions of the Thirty-ninth Meeting of the American Laryngological Association*¹⁰ contains a number of interesting papers, including one in which is described a series of frozen sections of the thorax in the case of a syphilitic negro with a large aneurysm of the aortic arch, which caused death by rupture into the left bronchus. Eight photographic reproductions of these sections are included, and should be of service to topographical anatomists and pathologists.

⁶ *A Medical and Surgical Help for Shipmasters and Officers in the Merchant Navy, including First Aid to the Injured*. By Wm. Johnson Smith, F.R.C.S.; revised by A. Chaplin, M.D., F.R.C.P. Fifth edition. London: C. Griffin and Co., Limited. 1919. (Cr. 8vo, pp. 372; 2 plates; 82 figures. 6s.)

⁷ *Précis de Dermatologie*. Par J. Darier, Médecin de l'Hôpital Saint-Louis. Second edition. Paris: Masson et Cie. 1918. (Post 8vo, pp. xviii+864; 195 figures. Fr. 18.)

⁸ *First Aid to the Injured*. Arranged according to the Revised Syllabus of the First Aid Course of the St. John Ambulance Association. By James Cantlie, M.A., M.B., F.R.C.S. Thirty-second edition, revised 1917 by a Committee. London: The St. John Ambulance Association. 1918. (4 x 5½; pp. 227; 117 figures. 1s. net.)

⁹ *Transactions of the Medical Society of London*. Forty-first volume. Edited by Hugh Lott, F.R.C.S., and Edmund Cantlie, M.D. London: Harrison and Sons. 1918. (Demy 8vo, pp. liii + 502; illustrated.)

¹⁰ New York: American Laryngological Association. 1917. (Med. 8vo, pp. 390.)

⁵ *United States Army X-Ray Manual*. Authorized by the Surgeon-General of the Army. New York: Paul B. Hoeber. 1918. London: H. K. Lewis and Co. 1919. (Cr. 8vo, pp. 506; 219 figures. 18s. net.)

CHILD WELFARE IN FRANCE AND GERMANY.

A REPORT on the welfare of the children of women employed in factories in France and Germany, prepared by the Intelligence Department of the Local Government Board in England, has been issued.¹ It contains much information which will prove of service to workers in child welfare everywhere. The report was originally prepared for the Welfare Advisory Committee of the Ministry of Munitions, but the coming of the armistice has set it free for general use. It must of course be borne in mind that it was compiled during the continuance of hostilities; and, further, that whilst much of what was being accomplished in France was known in this country already, a veil hung to a great degree over the procedure followed in Germany.

The call for women to perform unaccustomed tasks directly arising out of the war produced very soon an abnormal situation in both countries. Before the great conflict the employment of women in factories had been regulated very closely; night work was prohibited as well as certain kinds of day work, and working overtime was limited. But war came, and "the claims of the future which had prompted these measures had to be sacrificed to the urgent needs of the moment." As month after month passed anxiety began again to be felt regarding the future of the race, and an agitation to reimpose the safeguards in connexion with women workers was commenced. This agitation met with sympathy and with little more; and consequently active efforts were turned rather in the direction of mitigating the evils which have been produced than in that of preventing them altogether. It was felt that till war had ceased palliation was all that could be hoped for.

The Infant of the Industrial Woman Worker.

In the first place measures were taken to enable the woman to be both industrial worker and mother. The question will arise, now that the war is over, whether this is a practicable proposition at all, but during hostilities it was regarded as necessary that with the least injury to the children the practice of this double function should be continued. In both France and Germany there was consequently a large increase in the number of nursing rooms for infants who were at the breast, of crèches for older infants and for those who were not at the breast, and of nurseries for still older children; some steps, although they did not go far enough, were taken to ensure the medical supervision of these nursing rooms, crèches, and nurseries. These things had existed before the war, but in both countries there was a great expansion; more particularly efforts were made to bring the nursing rooms and crèches near to the factories where the mothers were at work. Further, in France a law was passed in 1917 under which employers were required to allow special rest periods to mothers in order that they might suckle their babies, and, under certain conditions, to provide rooms for the infants of the working mothers. In Germany there was no such general legislation, but the Imperial Crèche Association was active, more municipal crèches were established, and voluntary crèches also were set up, but had a short life because suitable fittings and trained medical and nursing staffs were not provided. The crèche associations were alive to the importance of maintaining breast feeding, and in some towns—for example, Barmen, Altenburg—special rooms were provided in which women might nurse their infants, and in others dinners were given to the mothers at the crèches. Some provision was also made for the older infants (of pre-school age) and for the school children out of school hours. These chiefly took the form of day shelters in Germany and of infant schools with playgrounds in France. As the war went on there was a tendency in both countries to extend these advantages to all children, and also to make the movement more a public and less a purely philanthropic and private one. Wide extension of the crèche movement with municipalization of it advanced together, and at the same time the voluntary societies, and especially the general associations, became better organized, faced the problems more fully, exercised more influence on public opinion,

and co-operated with the public authorities more usefully. It is interesting to note that in Germany, in addition to State aid, the invalidity insurance institutions gave assistance, and even in some cases the fire insurance companies did the like, on the ground that children left without care caused fires.

It has to be admitted, however, that all these well-intentioned measures met with opposition, and were with difficulty carried out to the full. The institutions were not, speaking generally, popular with the working mothers, and, possibly on account of defective medical and nursing care, epidemics swept devastatingly through them on some occasions; this increased the disinclination already shown by the mothers to confide their children to them. Again, the workers in the institutions were not very generously rewarded for their services, and trained workers were scarcely to be had, although near the end of the war measures were being taken to train them more thoroughly. The consequence was that in both countries the children of working mothers were still mostly left in the care of relatives (chiefly grandmothers) or neighbours ("boarded out"), although it has to be added that the need for the supervision of such boarded-out children was appreciated and to some extent enforced. Thus, in Mannheim, the homes of such foster children were visited regularly by a nurse, and the children had to be brought periodically for medical examination to a doctor appointed for the purpose. Dortmund recently appointed a doctor to supervise all institutions in which children were cared for, either entirely, or by day or night only; and the Greater Berlin War Committee employed trained welfare workers to inspect all the institutions to which a grant was given out of the committee's funds.

The Working Woman before and after Parturition.

In the second place the report deals with the measures which were taken to help the woman to be a mother, but, of course, with the needs of the children as the primary consideration. These measures in this country (Great Britain) embrace all the various plans for the endowment of motherhood, for the teaching of mothercraft, and, speaking generally, for the mother welfare part of maternity and child welfare schemes. In France, probably on account of the low birth-rate, they seem to have been much more in evidence than in Germany, and they were looked at from rather different standpoints in the two countries. The whole world is indebted to France for the thorough discussion of these subjects, which took place in the Académie de Médecine in 1917. Dr. Pinard, it is true, did not carry his resolution that expectant and nursing mothers should be prohibited from working in a factory until at least six months after confinement, and that they should be paid five francs a day as compensation for loss of wages; but the committee which was appointed to consider Pinard's suggestions and those of Strauss made sundry recommendations regarding pregnant women and their work in factories which were entirely in the right direction. Thus the law of 1913, which had provided for optional rest for women before confinement, was altered so that the rest was obligatory for women employed in war factories, and it was strongly recommended that welfare supervisors should be appointed in all factories where a number of women were employed. In France, also, under the law of 1913 an allowance from the public funds might be received by necessitous mothers for eight weeks in all, of which at least four had to be after childbirth; the war led to an extension of the classes of women who might claim this grant. It has been suggested that some considerable modification of the maternity benefit under the Insurance Act in the direction of the French procedure should be made in this country. No doubt there would be difficulties, but these might be overcome.

In Germany a system of imperial maternity grants was first regulated by a law of December, 1914. The grants are given through the sickness societies to all insured, and therefore to all industrially employed, women. They included (a) a single payment of 25s. towards the expenses of confinement; (b) an allowance at first of 1s. and later of 1s. 6d. daily for eight weeks, at least six of which must be after the confinement; (c) an allowance of 10s. for medical attendance during pregnancy, if needed; and (d) an allowance for breast-feeding at the rate of 6d. per day for twelve weeks after confinement. The financial

¹ *The Welfare of the Children of Women employed in Factories in France and Germany.* Report prepared in the Intelligence Department of the Local Government Board. London: Published by His Majesty's Stationery Office. 1919. Price 6d. net.

arrangements made at certain of the French munition factories were on a still more generous scale. Every woman who had been employed in the factory for more than three months was entitled to full wages during four of the eight weeks of the lying-in period and half wages during the other four weeks. A maternity benefit of 50 francs was granted for each confinement which took place at the end of seven months at least, whether the child lived or not. In the case of twins the benefit was 100 francs. A monthly nursing bonus of 10 francs was allocated at the end of each of the four months following the confinement; and in the case of twins the benefit was doubled. There were various other money grants to encourage breast-feeding.

There are many other interesting facts in this report to which it is impossible here to refer; but in the main the impression left upon the mind is that in both countries, most, perhaps, in France, there was during the war a steadily increasing realization of the dangers due to neglect in the care of child life and an increased effort to meet and prevent these dangers. There was also in France, and to a less extent in Germany, a clear indication that the care of the expectant mother for her own sake as well as for that of her unborn child was now to be regarded as a national duty, as, indeed, a sort of first charge upon the national revenue. In this country we have no reason to be ashamed of the view which the medical profession and the health authorities take of the expectant mother and her rights; but the financial inducements held out to her and the detailed means of caring for her might both be greatly increased and the national exchequer be none the worse, but in the end much the better. After the war, doubtless, few married women will continue to be makers of munitions; but why should the measures for their comfort and safety in child-bearing which were granted to them during the war not be continued in the peace?

NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.

THE fourth annual general meeting of the National Council for Combating Venereal Diseases was held at the Fellows' Rooms of the Royal Botanic Society on June 23rd. The Right Hon. Lord SYDENHAM presided.

Dr. Addison, who had been announced to speak, was prevented from coming owing to a meeting of the Cabinet at the same hour. The annual report of the Council instanced various directions in which the work had been influenced by the change from war to armistice conditions. A special demobilization committee had made recommendations which in the main applied the existing policy of the Council to the conditions of the moment. One new development had regard to the continuous treatment of infective persons, which had been the subject of several conferences with the medical representatives of the Local Government Board. The Executive Committee advocated legislation penalizing a person who failed to continue treatment until he or she was reasonably free from infection. The Local Government Board had also been asked to consider whether some modified form of confidential notification of infective cases could be adopted under existing powers, and whether at a later date fresh powers could be obtained from Parliament.

Lord SYDENHAM said that there were now 148 free clinics in the country, and further facilities for continuous and early treatment would be provided by the Ministry of Health. The relations of the Council with Dr. Addison's department had been drawn closer during the year, and the Council was now regularly employed as the educational medium for that department. The American authorities had been very helpful in supplying information, which the Council had reciprocated, and it would be a most valuable thing if in combating this gigantic evil the two great English-speaking peoples could stand together.

Colonel C. J. BOND, F.R.C.S., described how the problem had been tackled in Leicester. The city council was represented on the branch by five members, and its work was financed by the municipal Sanitary Committee. In that way the branch got the benefit of the advice and co-operation of men concerned in local administration, and also was given a status which it had not in towns where the organization was wholly voluntary. The work in Leicester began by means of conferences with various bodies of townspeople, including employers' associations,

labour organizations, and religious bodies, and in this way a certain public opinion was built up. A series of lectures was next given to school teachers on instruction in sex hygiene, in the expectation that some of those attending might themselves become local lecturers. Leicester was a pioneer in the poster campaign; suitably worded posters, both for men and women, were, with the consent of the employers, put up in the workpeople's dining halls and common rooms. A later effort, started last winter in co-operation with the education authority, was to institute a system of instruction for scholars attending the continuation schools. It was also desired to work in harmony with the parents, and each scholar, therefore, was given the printed scheme of instruction, and told to seek the consent of his or her parent or guardian. During the last few months over one thousand scholars in the continuation schools, boys and girls separately, had received this instruction in sex hygiene. One kind of instruction was given to junior scholars under fifteen and a more advanced kind to those above that year, with whom it was possible to lay more direct emphasis on the problems of venereal disease. With regard to treatment centres, the attendance at the Royal Infirmary rose to 100 on a single evening, and it was proposed to erect a new building, in order that the department and its equipment might be kept entirely distinct from the rest of the work of the hospital. He trusted that in view of this necessity there would be some assurance from the Ministry of Health that the provision would be continued for a period of years. A need had arisen for more thorough classification of patients, especially on the women's side, as, for instance, the separation of the professional prostitute class from the class of women who might have been infected from their husbands. In conclusion, Colonel Bond said that he was anxious that the propaganda against venereal diseases should not suffer, as temperance work had done, from internecine strife. Two rocks ahead were the questions of prophylaxis and notification, but he hoped that wise and discreet judgements would prevail.

Sir MALCOLM MORRIS expressed the indebtedness of the Council for the assistance received from the Local Government Board in the matter of the Council's propaganda. It was due to advertisement in the public press and other channels that the attendances at the clinics were increasing all over the country, and these advertisements would have been out of the question but for money provided by the Government.

The meeting concluded with a vote of thanks to the Chairman, moved by Sir THOMAS BARLOW, and seconded by Dr. WINIFRED CULLIS.

RECRUITING FOR THE R.A.M.C.

WE have received from the War Office an intimation that medical officers for the R.A.M.C. are required to replace those who have urgent claims for demobilization, and also to serve in India at once. It is hoped that newly qualified men and those who have already served will respond to the appeal; the latter are required for India immediately, since they will be ready to go without delay. The newly qualified men are required for any duty, and will receive an outfit allowance. The following are the terms of the contract:

Pay and Allowances for Medical Men who Volunteer for Service with the Armies of Occupation.

Consolidated pay at £550 per annum, inclusive of all allowances except travelling allowance and expenses when travelling on duty.

Issue of rations, or allowance in lieu thereof at current rate when such are not available for issue (at present 2s. 1d. per diem).

Outfit allowance to be granted in the case of officers commissioned for the first time, £37 10s.

Candidates who have served before will be commissioned in their previous rank; and those who have not served before, as lieutenants. The period of engagement is for one year, or until no longer required, whichever shall first happen. Candidates must be fit for general service at home and abroad.

We are informed that the junior ranks of the Territorial Force and Special Reserve will receive the same rates as temporary officers. The total number required is large. Applications should be addressed to the Secretary, War Office, Adastral House, Victoria Embankment, London, E.C.4.

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CONSULTANTS WITH THE ARMIES ABROAD.

SIR GEORGE MAKINS'S Cavendish Lecture, in which he describes and discusses the position and duties of a consulting surgeon with the British armies in France and Flanders, raises many interesting points in medical administration. We believe he is right in thinking that civilian consultants, as such, were first attached to an army in the field during the South African war. The innovation was a matter of accident rather than of design; it arose from the fact that eminent civilian surgeons and physicians had offered their services and became by force of circumstances consultants in the areas in which they worked. The value of such assistance was recognized by the army medical authorities, and soon after the outbreak of the recent war men of high standing in the profession—physicians, surgeons, and an ophthalmic surgeon—were attached to the army in France in a consultative capacity; one physician and one surgeon for duty with the army in the field and the remainder at the bases. From this small beginning there grew up a large consulting staff in all the areas of hostilities. Their duties and responsibilities gradually widened as the value of their work became evident, but were never defined or codified. Consultants were also appointed in the Home Commands, and in their functions also a process of evolution went on; but the conditions at home and abroad differed considerably, and we propose to confine ourselves now to the work of the consulting physicians and surgeons in the principal theatre of war.

The medical administration of a large army in the field makes a heavy call upon the regular officers of the Army Medical Service, whose time and energies are for the most part absorbed in the duties of administration. Hence the purely professional work—whether surgical or medical—must largely devolve on civilians whose duty it will be to advise the administrative officers and guide them in all therapeutic and pathological matters. Thus no man can be regarded as a medical administrator of the first rank who has so neglected to keep himself in touch with the movement of scientific thought and practice that he is incompetent to comprehend the advice given to him. Nor can a consultant attain to his full military value without some knowledge and grasp of administrative principles, because lacking these he will be apt to make impracticable suggestions, losing sight of the needs of an army in contrast with the needs of the individual or of small groups. The primary function of the army consultant is to act as technical adviser to the administrator of the formation to which he is attached, and the greater his acquaintance and sympathy with army ways and needs the more readily will his suggestions be invited and adopted. A happy feature of the past five years has been the absence of friction between the administrators and consultants in the armies abroad, and this harmonious working, due to a proper appreciation of each other's duties, contributed largely to the success of the medical services. Sir George Makins puts the

matter well when he defines the right official relation between consultant and administrator as one of mutual confidence and friendship, and he pays a well deserved compliment to Sir Arthur Sloggett for the example he set and the influence this had in promoting the efficiency of the system throughout France.

The consultant must interest himself in the preventive aspects of medicine and surgery, and here his work will naturally dovetail with that of the pathologist as well as the sanitary officer, in concert with whom must be devised methods for the control of epidemics, for the early detection of contagious disease, and for the prevention of wound infection. Preventive medicine and surgery in military life may be considered to have a very wide scope, and to include consideration not only of the prophylaxis of the enteric diseases, of cerebro-spinal fever, and of venereal disease, but also of the minor ailments that lead to so much wastage—for instance, affections of the ear, skin, and teeth, and the devising of methods for checking their incidence.

In the practice of military medicine and surgery certain broad principles of treatment must be defined with regard to the possibilities of the situation of an army in the field, which change with the character of the operations, the season of the year, the nature of the country, and the facilities for evacuation. For certain purposes a standardized mode of treatment is essential to secure the greatest good to the greatest number of men. Thus, for example, an individual surgeon may be able to treat a compound fracture of the femur in a way which is very successful, but his method may not be applicable to the mass of cases. Here the standard method (in this instance the Thomas splint) gives the best results all round, and, as a result of the representations of the consulting surgeons, was eventually adopted. So also it was considered wise at one period to issue instructions as to types of chest wound on which alone operations should be performed. It is obvious from these illustrations, which might easily be multiplied, that the dissemination of recent knowledge and information among scattered workers is an important function of consulting officers. Even in France medical units perforce worked in circumscribed areas, and the officers had little opportunity of hearing what others were doing. The consultants, acting as liaison officers, were able to take from area to area the news of fresh methods that were being effective, and so to spread rapidly information of vital consequence. To take one example: the surgeons at the casualty clearing stations were anxious to know the state in which patients they treated arrived at the bases, and whether the methods which seemed to them the best were in fact the most appropriate, having regard to the inevitable train journey which had to follow. Through the consultants, also, and the conferences they and other selected officers attended from time to time in Paris, information of great value was gleaned from the armies of our allies, and we in turn were able to help them. Further, by watching current medical literature—often unobtainable by medical officers in the field—consultants were in a position to furnish the workers in their areas with the latest news of technical advances. Again, by such means as giving lectures at schools of instruction, by fostering medical societies, and by holding conferences for the medical officers of armies, and of divisions during periods of "rest," new knowledge was spread, clinical interest was maintained, and discoveries in war medicine and surgery were made known generally. Sir George Makins lays particular stress on the value of the medical meetings promoted by consultants. Another constant

duty was the nomination of suitable medical officers for specialist duties—that is, the fitting of the round peg into the round hole. With the growing demands on medical men this became a harder task, and the balancing of conflicting needs required much thought. From the nature of his work and training the consultant must be in a better position than anyone else to advise in the selection of individual medical officers for particular posts, with due regard to efficiency and economy of personnel. This truth was year by year more fully recognized by the Director-General and the Directors of Medical Services of the Armies in France. It is an important principle of sound military administration which we hope will not be forgotten by the Army Medical Service.

The investigation of new or newly recognized diseases and the institution of appropriate methods of treatment formed a considerable part of the work of the consultants. In this—in France at least—they were closely linked with the adviser in pathology, and much of the grouped research work carried out was due to the close co-operation between him and them. The enthusiastic investigator is apt to immerse himself in an attractive field of research, and it needed stern discrimination to hold back eager workers from a problem of fascinating clinical interest which yet from its small numerical incidence might be unimportant to an army at war. A sense of proportion was no less necessary in deciding how far the consultant should give help in individual cases. In war the needs of the individual must be subordinated to those of the mass, and he who spent his time in running hither and thither from one patient to another, or in operating at a single unit, had none left to grapple with the larger problems of the army to which his energies might more usefully have been devoted. As the war went on and consultants became more numerous it was felt necessary to have more frequent meetings to discuss difficulties. Informal gatherings of those interested in special topics were held, and the outcome of these consultations—surgical, medical, or pathological—was forwarded to the Director-General. At times he also called together a full meeting of his consultants to discuss with them some matter of general principle on which their advice might be helpful, and the conclusions reached were promulgated through the armies as general instructions.

Such, in broad outline, were the duties which gradually became assigned to the appointment of consultants in general. The special functions of the consulting surgeon are discussed more fully by Sir George Makins, whose suggestions for the future are drawn from the wealth of an experience gained in two wars. Not being invested with administrative powers—and wisely so, in our opinion—the consultants had to carry out their work by advisory methods. It must be conceded that the difficulties were considerable. In their relations with the administrative branch they had to refrain from any attempt to interfere with routine administration. In their dealings with the medical officers they had to avoid the appearance of an intention to spy on their work, or to criticize unduly, and to make it plain that their object was rather to establish a bond of mutual regard and comradeship in effort. That those who filled the responsible posts of consultants did in very large measure succeed in attaining these objects is a matter on which they may pride themselves. If comparatively little has appeared in medical literature from the pens of most of our consultants, this must not be taken to indicate that they have observed little of interest, or have had little work to do; it may

rather be held to show that they have preferred to remain silent, in order that the younger men who were doing the actual work might record their own results; much of this work probably owes its inspiration to the interest or the suggestion of some consultant. Certainly the war did in the different theatres of war build up a brotherhood of men, old and young, working together for the common good.

THE R.A.M.C. MEMORIAL SERVICE.

THE service in memory of all ranks of the Royal Army Medical Corps who gave their lives in the service of their King and country in the war of 1914–18, was held in St. Paul's Cathedral at noon on Wednesday, June 25th. There was a large congregation, including officers and men of every rank, many nursing sisters, and relatives and friends of those who had fallen. Beautiful music was provided by the band of the Grenadier Guards. The printed Order of Service was prefaced by a statement of the numbers of officers, warrant officers, non-commissioned officers and men who have been killed in action, or who have died of wounds or disease during the war, arranged according to the seven theatres of war. The number of officers who lost their lives is 563, and of these 400 were killed in action or died of wounds; in the other ranks 4,634 gave their lives, of whom 3,126 were killed or died of wounds. The statement of the number of those in whose memory the service was held was headed with these lines:

Blow out, you bugles, over the rich Dead.
There's none of these so lonely and poor of old
But, dying, has made us rarer gifts than gold.

The congregation joined in the first hymn, "The Son of God goes forth to war"; then followed passages from the Burial Service, the twenty-third Psalm, and a Lesson from the seventh chapter of Revelation, read by the Dean. The memorial to the dead was spoken from the chancel in these words: "Let us remember with thanksgiving and with honour before God and men, all ranks of the Royal Army Medical Corps who have died giving their lives in the service of their King and country." Then Spohr's anthem "Blest are the departed" was sung by the choir. After short prayers and two further hymns the congregation stood while the Dead March in "Saul" was played. This was followed by the haunting notes of the "Last Post," played by buglers of the R.A.M.C. stationed near the west door; next there came a roll of muffled drums, and, as the sun burst through from a cloudy sky, lighting up the Cathedral, buglers in the chancel blew the "Reveille." Then the National Anthem was played, and the short and impressive memorial service came to an end. The service was attended by Princess Louise Duchess of Argyll and Princess Beatrice, and by Princess Helena on behalf of Princess Christian. Queen Alexandra was represented by Colonel Sir Arthur Davidson, and the Duke of Connaught (Colonel-in-Chief of the Corps) by Colonel Sir Edward Worthington. The Lord Mayor and Sheriffs attended in state. The Council of the British Medical Association was represented by Sir T. Jenner Verrall, Lieut.-Colonel Sir James Barr, and Lieut.-Colonel D. G. Thomson.

THE MINISTRY OF HEALTH.

THE King has approved the appointment of the Right Hon. Christopher Addison, M.D., M.P., to be the first Minister of Health. Orders in Council will be issued at once formally setting up the Ministry of Health for England and Wales and for the creation of Boards of Health in Scotland and Ireland to correspond with the Ministry of Health for England and Wales. The functions and staff of the Local Government Board for England and Wales are being handed over to the Ministry of Health, and the Board will cease to exist on July 1st. The powers and duties of the Insurance Commissioners have also

been handed over to the Ministry of Health. Although all the powers of the Local Government Board are transferred to the Ministry of Health, the Act, as is well known, provides that some of the powers thus transferred shall subsequently be handed over to other departments, while some of the powers of other departments, such as those affecting school children and expectant and nursing mothers, will eventually be transferred to the Ministry of Health. Orders in Council making these further changes will lie on the table of both Houses of Parliament for thirty days before they become operative. The first step to be taken by the Minister of Health will be to set up four consultative councils—for medical and allied services, for national insurance (approved societies' work), for local health administration, and for general health questions. Each council will consist of not more than twenty members, who will hold office for three years, but will be eligible for appointment for a further term. The Minister will be the president, and the Parliamentary Secretary to the Ministry the vice-president, of each council; but the Minister will appoint a chairman who will preside in the absence of the president and vice-president. A council will meet not less often than once a quarter; the Minister will appoint the secretary; ten will be a quorum. In a statement made on June 24th, Dr. Addison expressed the hope that some large proposals would be got ready this year. This may point to a bill this session for the reform of the Poor Law. But, apart from the legislative programme the Ministry has in hand, it would, he said, be possible to push on rapidly with changes which can be carried through by administrative action. It is intended to set up many more maternity and child welfare centres; additional centres for venereal disease must also be established; the problem must be faced of how to conduct them so that the people for whom they are provided shall be ready to make use of them. The Canadian Red Cross has presented its hospital at Bushey, which was on Crown land, to the King, who is handing it over to the London County Council, and its large hospital at Taplow to Dr. Addison, who has arranged for removal to a suitable site near Birmingham, where it will be maintained by the corporation of that city. Both will be used as hospitals for children; together they will provide accommodation for between seven and eight hundred children. Dr. Addison spoke hopefully of housing; the prospects, he said, were improving, and some thousands of houses were already in process of construction. That was more than he had expected, for delay had been inevitable, owing to the fact that the vast majority of local authorities had been without any staff to prepare plans, outlays, and specifications; many of them had not yet obtained an adequate staff, and as some had had no experience in building, or very little, it was necessary that they should take time to consider the matter and to obtain adequate staffs. Some local authorities which had not yet been able to start building had begun work in laying out the sites and making streets. More material was, he said, available than could be used for some time, owing to the shortage of labour in the building trade, which, he feared, was likely to become more acute this autumn. He announced later that the Council of the Building Trades Federation will shortly be called together to arrange a scheme which would be accepted by both employers and workers.

GRANTS TO UNIVERSITY INSTITUTIONS.

THE Estimates for this year, as was mentioned a couple of months ago, contain a vote for one million to cover grants in aid of the expenses of universities and colleges in the United Kingdom and of the expenses under the Welsh Intermediate Education Act. The deputation from the universities of the United Kingdom, received last November by the Chancellor of the Exchequer and the President of the Board of Education, convinced the Government that the existing provision for aiding university

education must be increased, and it is intended that in future the sum of one million annually shall be apportioned between university institutions in England, Scotland, and Ireland. This year Parliament is being asked for a special additional vote of half a million to assist universities, colleges, and other similar institutions, including medical schools, which are in need of special assistance, in order that they may resume their full work under favourable conditions and may not be hampered by the extraordinary expenditure which has been caused by the prolonged interruption of their activities and development brought about by the war. The Treasury, after consultation with the President of the Board of Education, the Secretary for Scotland, and the Chief Secretary for Ireland, has appointed a Standing Committee "to inquire into the financial needs of university education in the United Kingdom, and to advise the Government as to the application of any grants made by Parliament towards meeting them." The chairman of the committee, which will be known as the "University Grants Committee," is Sir William M'Cormick; the other members are Mr. William Bateson, F.R.S., formerly Professor of Biology in Cambridge; Sir Dugald Clerk, until recently Director of Engineering Research to the Admiralty; Sir J. J. Dobbie, F.R.S., Principal of the Government Laboratories, London; Miss S. M. Fry; Sir F. G. Kenyon, K.C.B., Director and Principal Librarian of the British Museum; Sir Stanley Leathes, a Civil Service commissioner; Sir William Osler, F.R.S., Regius Professor of Medicine in the University of Oxford; and Sir J. J. Thomson, President of the Royal Society. The appointment of such a committee is a new departure. It will be directly responsible to the Treasury, and will in future determine the allocations from the annual vote by Parliament. It is intended that the annual grants allocated to the different institutions shall be inclusive block grants, to be expended at the discretion of the governing bodies, and that they shall remain fixed for a prescribed period of years, subject to revision at the end of each prescribed period. It is also intended that the method of distribution shall be such that the individuality of each institution shall have free play and that the legitimate interests of university autonomy shall be safeguarded.

A FLOATING SCHOOL OF TROPICAL MEDICINE.

DR. LOUIS SAMBON on June 14th delivered a lecture, on the sanitation of tropical lands, before a large audience at the Royal Society of Medicine. The suggestions he put forward were founded upon a five months' visit to the West Indies in 1913, and the lecture was given by arrangement with the West India Committee. Dr. Sambon recalled the fact that in 1897, in the columns of this JOURNAL, he contested the belief that the white man could not be acclimatized in tropical countries, maintaining that it was not climate but disease which opposed tropical colonization, and that the diseases of tropical countries were due to parasites. On this theory acclimatization became simply a matter of active and intelligent hygiene. This view was supported at the time by Sir Patrick Manson and Sir James Cantlie, and the eminent geographer Sir Harry Johnston, but was opposed by other authorities. One object of his visit to the West Indies was to investigate further his hypothesis that pellagra was an insect-borne disease. Each of the islands had its own geological structure, its own flora and fauna. In one island would be found a disease from which another island was exempt; in Barbados, for example, there was no malaria; yaws also, which at one time was a plague on this island, seemed now to have disappeared. But Barbados had three terrible scourges—elephantiasis, leprosy, and pellagra. The islands of the Lesser Antilles altogether offered opportunities for the study of tropical diseases such as might be impossible in vast forest-covered continental areas. The medical men now practising there were most zealous, but they suffered from lack of laboratory

equipment and were miserably paid, some of them having to add to their income by cultivating the sugar-cane or by rearing cattle. The hospitals offered rare opportunities for clinical investigation, but owing to difficulty of access to current medical literature, many things went unpublished because those in whose way they came had no idea whether or not they had been published already. In the matter of sanitation the profession in the West Indies was not adequately supported by the lay authorities. Dr. Sambon suggested that there was here a great opportunity for a school of tropical medicine of a new order—a floating school which would bring the students periodically into the tropics. If once or twice a year such a trip, perhaps under international auspices, could be arranged, the students would benefit by actual contact with the diseases in their natural habitats, and regular visits of students and teachers would stimulate sanitation in the parts visited. A pathological survey of the Lesser Antilles should be made, and one of the islands—Barbados lent itself particularly well to the experiment—might be made perfectly clean, in the same way as Havana and Panama had been cleaned by Gorgas. It was a reflection upon the British Empire that elephantiasis, leprosy, and pellagra should still be so widely prevalent in these possessions in the Caribbean Sea, especially the first of the three diseases, in view of the knowledge as to its mode of transmission. By effective measures the disease could be stamped out in a few months. Dr. Sambon added that he had had the opportunity of bringing forward this suggestion for a mobile school both in France and Italy. In Italy it had secured the enthusiastic support of the Italian Government and the Colonial Institute of Naples. In Paris the Faculté de Médecine acclaimed the proposal, and it was stated that it would receive assistance from the French Government. The present suggestion was that an experimental journey be undertaken next summer to determine what could be done later on a larger scale.

THE ROYAL SOCIETY'S CONVERSAZIONE.

MANY of the demonstrations given at the first summer conversazione of the Royal Society on May 28th (as noted in the JOURNAL of May 31st, p. 682) were repeated at the second on June 25th. Dr. J. S. Haldane, F.R.S., and Dr. J. G. Priestley demonstrated an army form of apparatus for continuous oxygen administration; by means of a reducing valve and graduating tap a constant stream of oxygen of the necessary amount is delivered into a small bag attached to a face-piece, the bag being emptied at each inspiration and none of the oxygen wasted. With the apparatus oxygen can be administered for several days, if required, without waste. They also showed an apparatus for the continuous recording of the frequency and depth of breathing. Mr. Joseph Barcroft, F.R.S., demonstrated a model of a small hospital for the treatment of chronic cases of gas poisoning by means of continuous inhalation of oxygen. Professor Dreyer of Oxford showed an apparatus extensively used by the Air Force in the later part of the war for automatically administering to aviators the amount of oxygen necessary at any altitude. Professor Leonard Hill, F.R.S., gave a very interesting demonstration on the effect of strong winds in retarding the growth of plants. Mustard seeds were sown on moist lamp wicks placed in a glass cylinder through which a current of air was drawn at the rate of about 5 metres a second; the seeds were inhibited from growing, though they were kept moist, whereas in a control cylinder normal growth took place. The failure was thought to be due to failure of the seeds to swell in spite of being kept moist. Mr. A. Chaston Chapman exhibited the "mineral yeast" used in Germany during the war for human food. The organism is not a true yeast, but grows freely on nutrient media at blood heat, producing a full crop in about thirty-six hours. It does not produce alcohol. The separated organism contains 50 to 55 per cent. protein and about 5 per cent. of fat. It is entirely free from bitterness and has a pleasant flavour suggestive of cream cheese;

it could take its carbon from glucose, molasses, or the conversion products of sawdust, and its nitrogen from ammonium salts. It was manufactured in Germany in considerable quantities as a useful adjunct to the bread ration. Sir Almoth Wright, F.R.S., Mr. L. Colebrook, and Mr. A. Fleming gave a demonstration on the parts played by white blood corpuscles and body fluids, and on the destruction of microbes, similar to that given at the first conversazione. Specimens were put up illustrating the growth of anaerobic organisms under aerobic conditions, such substances as minced meat, sand, plaster-of-Paris, cotton-wool, paper and cork being added to the media; the explanation given was that the effect was produced by the minute capillary spaces in these substances. Dr. A. O. Rankine demonstrated the possibility of transmission of speech by light. The receiver consists of a selenium cell (Fournier D'Albe pattern) in series with a battery and telephone receivers. Upon the selenium cell is concentrated, by means of a lens, some of the light sent by the transmitter. The transmitter is a device for causing the intensity of a beam of light to fluctuate in accordance with the vibrations of speech. This fluctuating beam causes the current in the selenium (and therefore in the telephone receiver also) to vary in the same manner, so that the speech is reproduced. Transmission is entirely cut off by interposing an obstacle in the way of the beam. Mr. A. A. Campbell Swinton, F.R.S., showed an apparatus by means of which it was possible to magnify weak wireless signals and to dispense with the usual large aërials and substitute a small flat coil of wire for them in wireless telegraphy. A siphon recorder was at work taking down messages sent from the Eiffel Tower. Mr. A. Mallock, F.R.S., showed a very simple form of cinematograph in which there was an absence of flickering on the screen, and by means of which the rate of speed of the film could be regulated at will. The cinematograph film passes as a belt over part of the circumference of a wheel. At half the radius of this wheel a number of plain mirrors are placed so as to form a polygonal cylinder about the axis. The virtual images of the film pictures in the mirrors are at the axis, and therefore, being stationary, can be projected on the screen by means of a fixed lens. Not without interest to medical men at the present time was a portrait exhibited by Mr. George H. Gabb of Dr. John Jeffries, who was the first man to cross the Channel in a balloon, on January 7th, 1785. That adventurous voyage created as much excitement as the successful and unsuccessful Atlantic flights, and was held to be as epoch-making.

SINCLAIR WHITE OF SHEFFIELD.

MR. SINCLAIR WHITE, senior surgeon to the Sheffield Royal Infirmary, has retired from the active staff of that institution. This announcement was made at a quarterly meeting of the Court of Governors last week, when the chairman said that during the twenty years of Colonel Sinclair White's connexion with the Royal Infirmary he had been its zealous, able and judicious supporter. Sir William Ellis, a member of the board for many years, in seconding a resolution appointing Colonel Sinclair White to be consulting surgeon, spoke warmly of the great value of Colonel White's services to the institution. He had brought enterprise to the work, had advised the board wisely on many occasions with regard to extensions, and had always been an influence working for harmony. Colonel A. M. Connell, who succeeds Colonel White as senior surgeon, said that during the twenty years they had worked together Colonel White had transformed the infirmary, and had introduced into it all the modern methods of surgery, so that to-day it would compare with any other hospital in the kingdom. Mr. Sinclair White, it will be remembered, was general secretary of the annual meeting of the British Medical Association at Sheffield in 1908, and on the death of Mr. Simeon Snell, the President of the Association, succeeded him in that office.

for the remainder of the period, and inducted his successor, Sir William Whitla, at the annual meeting in Belfast in 1909. At the outbreak of war Lieut.-Colonel Sinclair White was surgeon *à la suite* to the 3rd Northern Territorial General Hospital, and during the first years of the war devoted himself, with a zeal and assiduity which made serious calls upon his strength, to the surgical work of that hospital, which soon underwent great enlargement. About a couple of years ago he succeeded Colonel Connell as commandant of the hospital, a post which he had occupied before the war and still retains. In the last honours list he received the C.B.E. in recognition of his military services. Mr. Sinclair White, before he became attached first to the Royal Hospital and afterwards to the Royal Infirmary, Sheffield, was M.O.H. for the city, and in that capacity made a remarkable report on the action of soft moorland waters containing humic acid on the lead piping of domestic supplies. Since he gave the whole of his attention to surgery he has achieved a commanding position as one of the most progressive and skilful of English surgeons. His sterling qualities, his upright character, and sound judgement make him a power in Sheffield and a great influence in the profession in the districts around.

OXFORD OPHTHALMOLOGICAL CONGRESS.

The chief event of the Oxford Ophthalmological Congress, to be held in the week after next, will be the discussion, on July 10th, following the Doyne Memorial Lecture on preventive ophthalmology by Colonel J. Herbert Parsons, consulting ophthalmic surgeon to the forces. Colonel Parsons will consider the subject under two heads—the prevention of damage (1) to the individual, and (2) to others. Under the first head is included prevention of damage to the eyes from accidents, defective illumination, deleterious rays, and organisms, and prevention of damage to health from headaches, accidents, and fatigue; under the second head will be considered regulations for the prevention of the transference of contagious diseases and the regulations for public services, involving *inter alia* standards of visual acuity, colour vision, and judgement of distance. It will be pointed out that since preventive ophthalmology calls for collective action, consideration of the means of organizing such action is of predominant importance in the present period of reconstruction. For the prevention of accidents to the eyes in factories the necessary education of workmen may be carried out partly by welfare workers and partly by "safety first" propaganda. If necessary these means must be reinforced by penalties such as the release of employers from liability. A scale of awards for compensation, founded upon scientific principles, is urgently needed, and the institution of adequate regulations for the public services will demand a widening of the basis of education of ophthalmologists, co-operation between ophthalmologists and other experts, and improvement in the methods of examination of candidates and the selection of examiners. The lecture will be given at noon, and the discussion, in which a number of speakers have already intimated their intention of taking part, will be continued in the afternoon. On Friday a number of papers will be read. Among those taking part in the Congress will be ophthalmologists from the United States and Canada. An exhibition of scientific and commercial objects is being arranged. Further particulars of the Congress can be obtained from Mr. Bernard Cridland, Salisbury House, Wolverhampton.

SIR WILLIAM OSLER.

On Friday, July 11th, Sir William Osler, Regius Professor of Medicine in the University of Oxford, whose 70th birthday occurs on the following day, will be presented by some of his pupils, colleagues, and friends with a collection of essays. The presentation will be made by Sir Clifford Allbutt, Regius Professor of Physic in the sister University of Cambridge. The ceremony will take place

at the house of the Royal Society of Medicine, 1, Wimpole Street, London, at 5.15 p.m. All members of the medical profession will be welcome. The contributions to the presentation volume have been collected by a joint committee. Dr. William H. Welch has acted as chairman, and Dr. Casey A. Wood as secretary of the committee; the other American members were Drs. Harvey Cushing, Charles L. Dana, Fielding H. Garrison, A. Jacobi, G. E. de Schweinitz, Henry Barton Jacobs, Francis J. Shepherd, and Horatio C. Wood. The British members were Colonel J. G. Adami, C.A.M.C., F.R.S., Dr. Raymond Crawford, Sir Bertrand Dawson, G.C.V.O., Sir Walter Fletcher, F.R.S., Professor Arthur Keith, F.R.S., Sir Andrew Macphail (McGill University, Montreal), Sir D'Arcy Power, K.B.E., Sir Humphry Rolleston, K.C.B., and Dr. Charles Singer, of Exeter College, Oxford, who has acted as secretary of the English section. The essays form two large octavo volumes, of over 700 pages each. The frontispiece is an engraved portrait of Sir William Osler, and the articles are illustrated by numerous plates and drawings in the text. The intention has been that the volumes shall present the finest work of printers and binders, and we are told that this aim has been fully attained. The contributors appear to be drawn in about equal proportions from the leaders of medicine in the United States of America and in the British Empire. Their contributions cover a very wide field—the history of medicine, medical education and research, and pathology and therapeutics—thus reflecting the many-sided interests of the great physician the volumes are intended to honour.

MR. N. BISHOP HARMAN, F.R.C.S., has been appointed ophthalmic surgeon to the National Institute for the Blind.

Medical Notes in Parliament.

On June 24th the House of Commons resumed its sittings after the Whitsuntide recess, and the expectation is that the session will be continued far into August and then adjourned until November. There has been talk in some quarters (particularly amongst the Labour group outside Parliament) of a General Election in the autumn, but at Westminster the prevalent belief is that this will not occur, unless a split in the Coalition Party should take place on matters of policy, and adequate support should not be available to sustain a reorganized Government. Mr. Lloyd George has already intimated that so soon as opportunity allows he will restore the Cabinet system. The War Cabinet will be replaced by a larger one, but not so large as in recent years. The immediate issue for which the present House of Commons was elected—the successful conclusion of the war—having been attained, other big questions, involving policy for the future, will come up, and many members not being definitely committed upon them, there will be a revival of controversy and of interest in Parliament. The report of the Coal Commission raised, for example, the issue of coal nationalization; the fiscal policy of the Government has to be defined for the future; and some decision may have to be taken in regard to Ireland, the operation of the Home Rule Act, which nobody thinks applicable in its present form, having been suspended only for a limited time.

It was intended to take the Transport Bill on report from Grand Committee on June 24th, but it is the subject of a good deal of contention, and as Mr. Law had to be away in Paris its consideration was postponed. There is some probability that Mr. Lloyd George may, early next week, make a statement on the Peace Treaty, and that a short debate may ensue.

Tuberculosis in the Navy.—Lieutenant Commander Kenworthy asked the Pensions Minister, on June 24th, whether a decision had been reached with regard to men invalided for tuberculosis from the Royal Navy before the war; and whether he would consider granting a pension to these men in view of the additional medical evidence on this disease brought to light during the war. Sir James Craig said that the Minister was not prepared to revise the findings of the Admiralty in the case of men invalided from the Royal Navy before the war, nor was he aware of any additional evidence that would justify him in doing so.

BIRTHDAY HONOURS.

THE following completes the list of honours conferred on the occasion of the King's birthday.

O.B.E.

Temporary Captains: Francis J. Allen, M.C., R.A.M.C., Ernest F. Bashford, R.A.M.C., George W. Beresford, R.A.M.C., Adam Brown, R.A.M.C., Claude G. Colyer, R.A.M.C., Colin McK. Craig, R.A.M.C., John G. Craig, R.A.M.C., Thomas D. Cumberland, R.A.M.C., Norman G. W. Davidson, R.A.M.C., Roy S. Dobbins, R.A.M.C., Percy W. Dove, R.A.M.C., James D. Driberg, M.C., R.A.M.C., Cuthbert Dukes, R.A.M.C., Aubrey Goodwin, R.A.M.C., Charles B. Goulden, R.A.M.C., Andrew Grant, R.A.M.C., James N. J. Hartley, R.A.M.C., John Jardine, R.A.M.C., William C. Jardine, R.A.M.C., George L. Leggat, R.A.M.C., Thomas P. Lewis, R.A.M.C., Walker S. Lindsay, R.A.M.C., Peter Lornie, R.A.M.C., Norman P. L. Lumb, R.A.M.C., Francis C. MacDonald, R.A.M.C., Ronald MacDonald, R.A.M.C., William MacEwen, R.A.M.C., Archibald MacMillan, R.A.M.C., Rom Charndr Malhotra, I.M.S., Octavius de Burgh Marsh, R.A.M.C., Octavius S. Maunsell, R.A.M.C., Edward T. C. Milligan, R.A.M.C., Robert Foster Moore, R.A.M.C., John T. Morrison, R.A.M.C., Everitt G. D. Murray, R.A.M.C., Stuart Murray, R.A.M.C., William A. Murray, R.A.M.C., Gordon L. Neil, R.A.M.C., George C. Neilson, R.A.M.C., Frank Newey, R.A.M.C.(T.F.), Alexander C. Palmer, R.A.M.C., Alfred C. Pickett, R.A.M.C., Albert E. Pinniger, R.A.M.C., William A. Rees, R.A.M.C., John W. Robertson, R.A.M.C., Robert C. Robertson, R.A.M.C., Herbert P. Shackleton, R.A.M.C., William Stirling, R.A.M.C., Adrian Stokes, D.S.O., R.A.M.C., James R. Stott, R.A.M.C., Edward J. Stuckey, R.A.M.C., Cedric R. Taylor, R.A.M.C., John Robert K. Thomson, R.A.M.C., Eustace Thorp, R.A.M.C., Arthur T. Todd, R.A.M.C., Charles W. Wanklyn-James, R.A.M.C., James W. Wrook, R.A.M.C., Henry H. Weekes, R.A.M.C., Maurice H. Whiting, R.A.M.C., Ernest U. Williams, R.A.M.C., John Alexander Wilson, R.A.M.C., Francis A. Winder, R.A.M.C., Ernest B. Wortley, R.A.M.C., Henry Yellowlees, R.A.M.C., Ernest William G. Young, R.A.M.C., Frederick H. Young, R.A.M.C.

Dr. Cecil H. Elmes, officiating Health Officer, Port of Calcutta.

Dr. James G. Johnstone, Lingah, Persian Gulf.

Dr. Elsie J. Dalyell, R.A.M.C.; Dr. Elizabeth H. Lepper, R.A.M.C.

Lieutenants (temporary Captains) Oswald Duke Jarvis, R.A.M.C., John Smith Sloper, R.A.M.C.

M.B.E.

Lieut.-Colonels: Philip Barnett Bentliff, Royal Jersey Medical Corps, Edwin Quayle, R.A.M.C.(Lancs. Volunteers).

Temporary Lieut.-Colonel John Keay, R.A.M.C.

Major and Brevet Lieut.-Colonel David Rennet, R.A.M.C.(T.F.).

Majors: Richard Brodie, R.A.M.C.(T.F.), William H. Pettit, N.Z.M.C., Henry S. Webb, R.A.M.C.

Temporary Majors: Albert B. Barnett, Special List, R.A.M.C., Archibald Stodart-Walker, R.A.M.C.

Captain (temporary Major) Walter E. Squire, R.A.M.C.

Captains (acting Majors): Cyril Armstrong, R.A.M.C.(S.R.), Eustace N. Butler, R.A.M.C.(T.F.), Charles H. Caldicott, R.A.M.C.(T.F.), James H. Crane, R.A.M.C.(T.F.), Bertram M. Footner, R.A.M.C.(T.F.), Oswald C. G. Shields, R.A.M.C.

Lockhart J. Spence, R.A.M.C., Frederick J. Thorne, R.A.M.C.

Chapains: Arthur G. Atkinson, R.A.M.C.(T.F.), Ernest P. Carmody, R.A.M.C., John Chambre, Gerald S. Coghlan, R.A.M.C., Robert D. A. Douglas, S.A.M.C., John I. Greig, R.A.M.C., David N. Isaacs, N.Z.M.C., Edward C. Lowe, N.Z.M.C., Stuart M. McPherson, S.A.M.C., Archibald G. H. Smart, R.A.M.C., Herbert V. Stanley, M.C., R.A.M.C., Douglas S. Stevenson, Arthur Henry Thomas, R.A.M.C., Charles R. Woodruff, R.A.M.C.(T.F.).

Temporary Captains (acting Majors): Stanley Brown, R.A.M.C., Charles M. Kennedy, R.A.M.C., Henry F. Mullan, R.A.M.C.

Temporary Captains: George G. Butler, R.A.M.C., James B. Butler, R.A.M.C., Andrew Crawford, R.A.M.C., John C. Ferguson, M.C., R.A.M.C., Andrew Grant, R.A.M.C., Walter Groome, R.A.M.C., Worsley J. Harris, R.A.M.C., Reginald Johnson, R.A.M.C., Edward J. J. Quirk, V.A.M.S., John Howard Slayter, C.A.M.C., James B. Wilkie, R.A.M.C.

Honorary Captain Rivers Thomas Rodgers, I.M.D., Superintendent I.M.D., and Central Jail, Jubbulpore, Central Provinces.

Lieutenants: Frederic Evans, R.A.M.C.(T.F.), William Jack, N.Z.M.C., Joseph (Prince) Mussanji Walugembe, Afr. Nat. Med. Cps.

Temporary Lieutenant Joseph A. Anastasi, R.A.M.C.

Miss Rose Govindarajulu, Lady Medical Officer, Mysore Maternity Hospital, Bangalore.

NAVAL HONOURS.

The following distinctions have been conferred in recognition of services during the war:

C.M.G.

Surgeon Commander Joseph Chambers, R.N., for valuable services as operating surgeon at the Royal Naval Hospital, Othatham, since December, 1915.

O.B.E.

Surgeon Commander Robley Henry John Browne, R.N., for valuable services as Principal Medical Officer on the staff of the Vice-Admiral Commanding the Battle Cruiser Force.

Surgeon Lieutenant Commander Charles Samuel Brewer, R.N.V.R., for valuable services at the dépôt for mercantile marine reserve ratings at Liverpool.

Surgeon Lieutenant Commander Paul G. Fildes, R.N.V.R., for valuable services on research work at the Royal Naval Hospital, Haslar.

Surgeon Lieutenant John Arnoux Prendergast, R.N., for valuable services in H.M.S. *Greenwich*, dépôt ship of the 14th destroyer flotilla.

D.S.C.

Surgeon Sublieutenant Annesley George Lennon Brown, R.N.V.R., for the gallantry and devotion to duty displayed by him on the occasion of the torpedoing of H.M.S. *Patton* by an enemy submarine on May 20th, 1917.

FOREIGN DECORATIONS.

The following foreign decorations have been conferred for distinguished services rendered during the course of the campaign:

By the President of the French Republic.

Croix de Guerre.—Colonels: John D. Alexander, D.S.O., Harold V. Prynn, D.S.O., A.M.S., Robert P. Wright, C.M.G., D.S.O., C.A.M.C. Brevet Colonel (temporary Colonel) Henry E. Manning Douglas, V.C., C.M.G., D.S.O., R.A.M.C. Lieut.-Colonels (temporary Colonels): William Beunett, D.S.O., R.A.M.C., Longford Newman Lloyd, C.M.G., D.S.O., R.A.M.C., Horace S. Roch, C.M.G., D.S.O., R.A.M.C. Brevet Lieut.-Colonel (temporary Lieut.-Colonel) Elliott Beverley Bird, D.S.O., R.A.M.C.(T.F.). Majors (acting Lieut.-Colonels): Francis L. Bradish, D.S.O., R.A.M.C., Donald de Courcy O'Grady, R.A.M.C. Major George G. Greer, M.C., C.A.M.C. Captains (acting Lieut.-Colonels): William R. Gardner, D.S.O., R.A.M.C.(S.R.), Edward Phillips, M.C., R.A.M.C. Captains (acting Majors): Peter J. Ryan, M.C., R.A.M.C., J. R. N. Warburton, M.C., R.A.M.C.(S.R.). Captains: Robert Burgess, D.S.O., M.C., R.A.M.C.(T.F.), Charles Frederick Hacker, M.C., R.A.M.C., William John Knight, M.C., R.A.M.C. Temporary Captain (acting Lieut.-Colonel) Lawrence D. Shaw, D.S.O., R.A.M.C. Temporary Captains (acting Majors): Lewis Anderson, D.S.O., R.A.M.C., Trevor A. Lawder, R.A.M.C., Arthur J. Blake, M.C., R.A.M.C.(T.F.), Arthur W. S. Christie, R.A.M.C. Temporary Captain James C. Ogilvie, M.C., R.A.M.C., attached Border Regiment.

Médaille de l'Assistance Publique (en Argent).—Captain (acting Lieut.-Colonel) Joseph H. Ward, D.S.O., M.C., R.A.M.C.; Captain John K. Gaunt, R.A.M.C.; Temporary Captains Vivian Gray-Maitland, Allan D. Low, Walter J. Paramore, Robert Thomson, R.A.M.C.

By the King of the Belgians.

Ordre de Leopold.—Commandeur: Lieutenant General Sir T. H. John C. Goodwin, K.C.B., C.M.G., Director-General, A.M.S. Officier: Brevet Colonel Sir Edward S. Worthington, K.C.V.O., C.M.G., R.A.M.C.

Ordre de la Couronne.—Officier: Major (acting Lieut.-Colonel) Thomas B. Moriarty, D.S.O., R.A.M.C.

By the King of Serbia.

Order of St. Sava, 5th Class.—Captain Fleet F. Strother Smith, I.M.S.

Cross of Mercy.—Captain (temporary Lieut.-Colonel) Sir Thomas Crisp English, K.C.M.G., R.A.M.C.(T.F.), attached R.A.M.C.

By the King of the Hellenes.

Greek Medal of Military Merit, 2nd Class.—Surgeon Commander Thomas W. Myles, R.N.

Dr. J. R. B. Dobson, late Captain R.A.M.C., has received the *Médaille de Sauvetage en Argent*, awarded by the Ministère de la Marine (French Republic).

MENTIONED IN DISPATCHES.

A series of special Supplements to the *London Gazette* were published on June 5th containing the names of officers, warrant and non-commissioned officers and men mentioned by the commanders-in-chief for services rendered in various theatres of war. The number of officers of the Army Medical Service and Royal Army Medical Corps, including Special Reserve and Territorial, and of the Colonial Medical Services, mentioned by Sir E. H. H. Allenby, Commander-in-Chief, Egyptian Expeditionary Force, is 184. Lieutenant-General Sir W. R. Marshall, Commander-in-Chief, Mesopotamia Expeditionary Force, mentions 68 officers of the A.M.S. and R.A.M.C. (Regular, Special Reserve, and Territorial), 32 of the I.M.S., and 7 of the Assistant Surgeons Branch of I.M.D. Lieutenant-General Sir G. F. Milne, Commanding-in-Chief, British Salonica Force, mentions 78 officers of the A.M.S. and R.A.M.C. (Regulars, Special Reserve, and Territorial) and 5 officers of the I.M.S. Lieutenant-General Sir J. L. Van Deventer, Commanding-in-Chief, East African Force, mentions 17 officers of the R.A.M.C., including Special Reserve and Territorial, 2 officers of the Indian Medical Service, 17 of the South African Medical Corps, 2 of the Uganda Medical Service, 1 of the East Africa Medical Service, and 3 of the Assistant

Surgeons Branch of the I.M.D. Major-General Sir L. O. FitzM. Stack, Acting Sirdar of the Egyptian Army, mentions 2 officers of the R.A.M.C. for services in connexion with the military operations in the Sudan; General the Earl of Cavan, Commander-in-Chief of the British Forces in Italy, mentions 44 medical officers; and Major-General W. E. Ironside, Commander-in-Chief, North Russia Expeditionary Force, mentions 7.

Canada.

ONTARIO MEDICAL ASSOCIATION.

THE annual meeting of the Ontario Medical Association in Toronto was attended by delegates from England; they included Sir Shirley Murphy, K.B.E., appointed by the British Government; Surgeon Rear Admiral E. R. Dimsey, D.S.O., R.N., by the British Admiralty; Sir StClair Thomson, by the British Medical Association; and Major Hey Groves, by the Royal College of Surgeons of England.

President's Address.

The president of the meeting was Dr. G. Stewart Cameron, of Peterborough, Canada, who gave an address, in the course of which he stated that 50 per cent. of the men examined under the provisions of the Canadian Military Service Act had failed to pass in the first class, the disabilities which prevented them from attaining the standard being in a large proportion of cases traceable to preventable causes. He urged that the public should be better informed on matters affecting maternity and child welfare, and should have a fuller understanding of the basis upon which the physician made his diagnosis. He spoke strongly on what he described as an organized assault by irregular practitioners, patent medicine manufacturers, and health cranks of one kind and another upon the medical profession, and called upon the State to exercise more efficient control. He also advocated the establishment of post-graduate courses. In this connexion Sir StClair Thomson took the opportunity of informing the public and the profession in Canada with regard to the Fellowship of Medicine, the emergency graduate course it had established in London this summer, and its scheme for the permanent establishment of courses in the future.

Sir StClair Thomson on Shakespeare's Medicine.

Sir StClair Thomson delivered an address at the conference on the medical lore of Shakespeare, who, he said, had an almost uncanny knowledge of the ills and needs of humanity out of all proportion to the wisdom of his time; the poet lived in a period when witchcraft was as firmly believed in as osteopathy was to-day, and potions, spells, charms, and incantations were as freely used as modern patent medicines, yet in spite of this environment of superstition he showed an understanding of the legitimate practice of medicine that was astonishing. His appreciation of the physician's need for taking notes was illustrated by reference to the Scottish practitioner who attended Lady Macbeth and took copious records of her ravings with which to refresh his memory while diagnosing her condition. Again, King Lear endeavoured to find a pathological reason for the ingratitude of his daughter. In King John's last illness fresh air treatment was used on the sinking monarch with excellent results, and the good leech in "The Comedy of Errors" must have had the true bedside manner—albeit he was an "irregular"—for upon visiting his patient for the first time he said: "Come, give me your hand and let me feel your pulse." Treatment by mental suggestion had also been thoroughly appreciated by the bard, who had said: "They'll take to suggestion as a cat laps milk." Finally Sir StClair Thomson quoted the famous speech of the melancholy Jaques describing the seven ages of man, and declared that it epitomized the whole gamut of life as truly and conclusively as any medical work full of long scientific phrases.

MEDICAL SCHOOL OF MCGILL UNIVERSITY.

Dr. S. E. Whitnall, who graduated M.B., B.Ch.Oxon. in 1908, has been appointed professor of anatomy, McGill University, Montreal, in succession to Sir Auckland Geddes, who has been appointed principal, and will, it is understood, take up the duties of that office next year. Dr. Whitnall is university demonstrator of human anatomy

at Oxford, and holds a commission as captain R.A.M.C. Territorial. Dr. John Tait, who graduated M.D.Edin. in 1906 and D.Sc. in 1907, now lecturer on experimental physiology in the University of Edinburgh, has been appointed Drake professor of physiology in McGill. The appointment of Professor Adami to be principal of the University of Liverpool has created a vacancy in the chair of pathology at McGill, so that when the medical school begins its work next session there will be new professors in the three chief subjects of the institutes of medicine.

England and Wales.

THE WELSH UNIVERSITY AND THE WELSH NATIONAL MEDICAL SCHOOL.

THOUGH nothing has yet been definitely decided, considerable progress has been made by way of discussion in arranging for the reorganization of the University of Wales. Particular attention has been given to the position of the Welsh National Medical School. The Royal Commission recommended that the School of Medicine should be separated from Cardiff University College and erected into an independent constituent college of the university. The University Court, however, desires to preserve the organic connexion which has hitherto subsisted between the two institutions. Principal Griffiths before laying down his office put out a statement on the future of the medical school, in which he gave an account of its short history. It was opened in 1894; for twenty-three years it has provided instruction in the first three years of medical study and during the last ten years post-graduate tuition for the diploma in public health. In 1906 the University of Wales obtained a supplementary charter authorizing it to confer degrees in medicine, and through the generosity of local benefactors institutes of physiology and public health, with fine laboratories, are being established in Cardiff. The conditions of these benefactions supplied Principal Griffiths with arguments for his conclusion that the medical school should be a part of the Cardiff College, but his argument rests mainly on larger considerations. In the first place he insists that one of the highest functions of a university is to help its students to prepare themselves for social life, and from this point of view the advantage of the mixing of those who are entering upon different professions and paths of life is obvious. Again he observes that the union between medical progress and pure scientific investigation is becoming closer with every succeeding year; to ensure advance research must be founded on this union, and for this the constant intercourse of colleagues is essential.

"Men," he writes, "cannot make real advance in watertight compartments. From my own experience at Cambridge I can testify to the value of such intercourse, and this is likely to be far more intimate when all the members of the staff feel that they are united in one body; that they can claim, not only as a privilege but as a right, the assistance of their colleagues; that, in fact, they are members of one regiment rather than of different armies. All who have had the interest of the medical school at heart have laid emphasis on the importance of its becoming the centre of research. Its proposed severance from our scientific departments, so far from promoting, will be a serious impediment to advance."

It is proposed that the College Council, subject to the supremacy of the University, shall be the chief governing authority of the School of Medicine, but that it shall delegate to the Board of Medicine wide administrative and executive functions and powers. The constitution of the Board of Medicine under this scheme would be almost identical with that proposed by the Royal Commission, but two additional representatives would be given to the University of Wales, and two representatives to the Cardiff and County Public Health Laboratory Committee. Owing to the close co-operation of this committee in the work of the department of public health and school of preventive medicine. Provision is also made for the representation of county councils and of women. The faculty of medicine would be represented on the Board of Medicine by three members out of a total of thirty-six, but the council of the University would have four members, and the council of Cardiff College ten; the council of the colleges at Aberystwyth, Bangor, and Swansea would have two each. The faculty of medicine would consist of the professors of

(1) medicine, (2) surgery, (3) pathology and bacteriology, (4) obstetrics and gynaecology, (5) preventive medicine, (6) pharmacology, (7) anatomy, (8) physiology, and (9) physics, chemistry, zoology and botany. There would also be one professor in one of the four last-named departments from each of the colleges at Aberystwyth and Bangor.

HOSPITAL FOR DISABLED SOLDIERS AND CIVILIANS.

The mansionhouse of Rookwood, which stands in a park of some thirty acres, on the outskirts of Cardiff and Llandaff, was opened last week as a hospital for disabled men, by Mrs. Lloyd George, who said that it was proposed to proceed at once to provide accommodation for 200 orthopaedic cases among pensioners, but it was hoped that in the future the institution would become a valuable adjunct to the Welsh national medical school. The estate is the gift of Mr. and Mrs. Laurence Philipps, and Colonel Sir John Lynn-Thomas, expressing the thanks of the Welsh nation to them, said that while the first object of the place was for the benefit of disabled pensioners it was hoped that its usefulness would presently be extended to civilians.

Major-General Sir Bertrand Dawson spoke strongly in support of the policy of the scheme. It showed, he said, vision, generosity, and the courage to achieve. Its actualities were great, but it was the beginning of a wider scheme which would be an example to the rest of the country. He looked forward to the erection there of a maternity centre, a school clinic, and a building for physical culture, and what they were just beginning to think of—a hospital for the early treatment of cases. The needs of the nation had outgrown the hospital provision. No one building a hospital to-day would dream of putting it in the centre of a great city. So overburdened were the hospitals that no further work could be put upon them, and wisdom was shown there in making separate provision for the treatment of war pensioners. With a waiting list of patients extending over three or four months before they could be treated at the hospitals the state was suffering a great loss, for prompt treatment of cases in their early stages meant early recovery before the complaint was able to develop.

Scotland.

STILLBIRTHS AND NEONATAL DEATHS IN EDINBURGH.

In the JOURNAL for May 3rd (p. 560) the stillbirths statistics for Edinburgh for the months January, February, and March were given. The stillbirths rate for these months was 30.43, 18.18, and 37.03 per 1,000 respectively. The health authorities have again furnished our correspondent with the figures for the past two months. The number of births notified in Edinburgh during April was 432; of these 15 were stillbirths, giving a rate of 32.87; whilst in May the births, including 21 stillbirths, numbered 519, showing therefore a stillbirths rate of 40.46. Evidently the stillbirths rate tends to vary considerably from month to month, a result possibly due in part to the comparatively small numbers dealt with. As was stated before, the numbers are obtained from the notifiational returns, and will not, therefore, be found to correspond with the registrational numbers of births for these months. The officials in the Public Health Office had a pleasant surprise when they came to calculate the neonatal death-rate for May. There were only five deaths during the month of infants under one month in age, and this gave a neonatal rate of 10.5 per 1,000 live births. The neonatal death-rate in the corresponding month of 1918 was 44.8 per 1,000. For the five past months the neonatal rate in 1918 and 1919 is given below in tabular form.

Neonatal Death-rate in Edinburgh.

	In 1918.	In 1919.
January	37.2	67.4
February	41.6	62.3
March	35.3	38.9
April	31.5	28.1
May	44.8	10.5

The neonatal rate for the whole of 1918 was 40.3. Obviously this rate, like the stillbirths rate, varies much in successive months.

HIGHLANDS AND ISLANDS MEDICAL SERVICE BOARD.

The annual report (the fifth) of the Highlands and Islands Medical Service Board has just been issued; it deals with the year 1918. The Board states that the scarcity of medical practitioners and nurses increased during 1918, and the effect of demobilization was not felt before the end of the year. In the last quarter influenza had become prevalent, and at no previous time had practitioners conducted their work under greater difficulties. A number of them had, through illness, to give up their duties entirely for a time, and many more endeavoured to cope with the enormous amount of additional work up to the verge of complete breakdown. The Board takes the opportunity "of expressing their appreciation of the high sense of duty displayed by the doctors and nurses in the Highlands and Islands in circumstances of great difficulty." The Board was able to provide assistance in a number of cases during the illness of the doctor, but the demands for medical attention and nursing were not less insistent in other parts of the country, and it was a matter of much difficulty to make even emergency arrangements.

The scheme for a medical service at modified fees to certain classes has been in operation for three years throughout the Highlands and Islands, save in a few parishes. The essential point is that the fee paid by the patient shall be the same whatever the distance from the doctor's place of residence. The report states that the scheme is undoubtedly fulfilling the purpose for which it was designed, bringing an adequate medical service within the reach of persons of limited means, and providing reasonable remuneration for the medical practitioners. That persons eligible to participate in the benefits of the scheme are increasingly taking advantage of it appears to be shown by the statistics for 1917-18. Taking the whole area the number of miles per practice travelled showed in 1918 an increase of 6.6 per cent. on 1917, and the number of visits an increase of 20.8 per cent. In 1918, as compared with 1917, there was a slight decrease (1.4 per cent.) in the visits and travelling in respect of Poor Law patients, coinciding with a diminution in pauperism, of some 6 per cent. Visits to patients treated under arrangements with various public bodies such as school boards, public health authorities, and the lighthouse commissioners, also showed a slight decrease, but there was a slight increase in visits and travelling for insured persons and club patients. There was a marked increase, of over 4 per cent., in travelling and visits to patients coming within the scope of the Board's scheme, the nature of which has been noted above, and a corresponding decrease in respect of purely private patients. On this point the report contains the following:

This adjustment as between "Board's" and private patients is due largely to a new classification of certain patients following on the increase in private fees recently adopted by many practitioners. Persons of the classes defined in the Board's scheme of modified fees residing near the doctor were usually attended at low uniform fees before the introduction of the scheme. They did not participate in the benefits accruing under the scheme to patients living at a distance, and consequently were classified as private patients. The fees chargeable to them have not been increased, but in virtue of that fact they have now come within the category of "Board's" scheme.

After reviewing the various forms of practice the Board makes the following statement:

On a consideration of the figures for 1917 and 1918, it is, the Board thinks, safe to say as regards the work of the practitioners with whom they have entered into agreements—that is, practically all the members of the medical profession in the Highlands and Islands outside the Burgh of Inverness and the Mainland District of Orkney—that, on an average, only 20 per cent. of the total travelling and 30 per cent. of the total number of visits are applicable to private practice. The balance (80 per cent. of the travelling and 70 per cent. of the visits) is under the auspices of some form or other of public service. In other words, over the whole area administered by the Board, about four-fifths of the entire medical service rendered to the population is subsidized or maintained from public sources. In many parts of the area the proportion is greater. When it is recalled that within the Highlands and Islands there are certain districts that are really, as regards general economic conditions, on the level of the Lowlands, it can be readily realized that in some of the poorer districts the amount of purely private practice is almost negligible. This is not a condition that has arisen through the operation of the Board's scheme of modified fees. On the contrary, one effect of the scheme has been to render it possible for practitioners assisted by the Board to develop their purely private practice to the utmost. Nevertheless the

information supplied to the Board and summarized in this report shows clearly that the volume of practice provided or assisted from imperial sources or from local public funds constitutes by far the larger proportion of the doctors' work and occupies the greater part of their time. Moreover, the figures for the two years, which the Board are now in a position to publish, indicate clearly that the work applicable to what may be described as "appointments" is increasing, and that there is no corresponding increase in purely private practice. In a sense it is true that, in the Highlands and Islands at least, there tends to develop a form of a medical service which, being for the most part a spontaneous growth, combines in certain districts the efficiency of a private or competitive service with the stability of an official service provided by the State. In single practice areas, where the competitive element is eliminated, the form of service approximates more closely to that of an official service resting entirely on public appointments; but there is in every practice a proportion—even if in some instances it is a small one—of private practice; thus in most cases the doctors' emoluments depend to some extent upon this private practice, and also to a much larger extent upon the volume of the work actually done by them for the Board.

With regard to the remuneration of practitioners, it is stated that the total ordinary grants under agreements with practitioners amounted in 1918 to £21,900, and under the supplementary scheme in respect of war conditions to £10,000, making a total of £31,900. The Board repeats the statement made in its report for last year, that it may in the future be necessary to make certain modifications both as regards the classes eligible to participate in the Board's scheme of modified fees, and as regards the area in which the scheme should operate. Modifications, the Board considers, will be necessary in the near future unless additional Exchequer grants can be made available for medical and kindred services in the Highlands and Islands.

With regard to the nursing service, the Board again expresses the view that it should be organized on a county or county district basis, in order that there may be provided under one central organization for each county or district nurses sufficient in number and with the necessary qualifications to enable them to give assistance in specialized schemes of public welfare as well as to undertake the general nursing work in their areas. The transference of the functions of the secondary education committees and the old school boards to the new education authorities set up by the Act of 1918 will, it is believed, help the unification of the nursing service. Grants are made by the Board to thirty-eight nursing associations; the number of nurses employed was 98, of whom 49 were fully trained. These receive an inclusive salary of £130 or £135; the salaries of midwives and nurses with intermediate qualifications have been raised from about £50 to an average of about £80. The Board makes certain grants towards the maintenance of hospitals; the total so expended in 1918 was £338. Expenditure to the amount of about £60,000 is in contemplation for the enlargement and improvement of hospitals, the provision of ambulance services, and the erection or improvement of houses for doctors and nurses.

Correspondence.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

SIR.—The long lists, published during the last few weeks, of subscribers to the Fund for presenting Sir Clifford Allbutt with his portrait prove that the profession welcomes the opportunity of testifying the esteem and affection with which he is regarded.

It had been intended shortly to close the Fund, but I have been asked to keep it open until July 31st. I would request all those who wish to take part in the presentation, but have not yet notified their intention, to send their subscriptions without delay. The amount is limited to one guinea. Cheques and postal orders should be made payable to the "Sir Clifford Allbutt Presentation Fund," crossed London County, Westminster, and Parr's Bank, and addressed to the Treasurer of the British Medical Association, 429, Strand, London, W.C.2.

I may add that it is intended after the portrait in oils has been painted to commission a mezzotint engraving

from it which subscribers to the Fund will be able to purchase for their own collections.—I am, etc.,

G. E. HASLIP.

British Medical Association, 429, Strand, W.C.2.

SUDDEN DEATH UNDER AN ANAESTHETIC.

SIR.—Credit is due to Dr. H. S. Gabbett for his endeavour to elucidate the grave problems that demand full and careful consideration in regard to (1) the dangers of anaesthetics in tonsil and adenoid operations; (2) the relative dangers of tonsillectomy and complete enucleation. The discussion elicits the fact that chloroform anaesthesia is still being employed for these operations, and we feel convinced that the simplest way of persuading doubting anaesthetists of the suitability of open ether in such cases is to induce them to employ the two-bottle method—the Bristol method, as it has been designated—in which chloroform and ether are used from separate drop bottles. In our hospital—the Bristol Royal Infirmary—this procedure led to the adoption of open ether as far back as 1896, as reported by one of us (A. L. F.) in a paper on open ether read at the meeting of the British Medical Association in 1910 (*BRITISH MEDICAL JOURNAL*, September 17th, 1910, p. 767). One point which was then particularly emphasized was the diminished tendency to haemorrhage with "open ether" as compared with the "closed ether" anaesthesia. This two bottle method is referred to in Sir F. Hewitt's *Anaesthetics* (fourth edition, p. 506).

We have been fortunate in having no fatality in the course of a very large number of cases of tonsillectomy, enucleation of tonsils and adenoid operations, but prior to the routine adoption of ether, either as the sole or at least the predominant anaesthetic, the use of chloroform was at times the cause of great anxiety.

We have advocated the adoption of the open ether method for years as in our opinion the safest and most efficient prolonged anaesthetic, especially in the operations now under discussion, because we feel that there are dangers which are peculiar to operations on the upper respiratory tract, apart altogether from the obvious dangers from blood clot or pieces of removed tissue passing into the glottis. We refer to the apparent cardio-inhibitory influences of excessive stimulation of the nasopharynx, which we believe due to communications in the medulla between the gelatinous substance of Rolando and the motor nucleus of the vagus (see Cajal's section illustrated in *Histology*, p. 35, Watson-Williams). For this reason a cautious spraying of the nasal passages with a weak solution of cocaine lessens the discomfort, and only adds to the safety of the subsequent anaesthesia. Though not essential, a hypodermic injection of $\frac{1}{150}$ grain of atropin sulphate a half to one hour before the anaesthesia lessens the secretion of mucus and the stimulation of the vagus endings and undoubtedly aids the operator and the anaesthetist. We find $\frac{1}{150}$ of a grain, suggested in Mr. Tilley's letter, an unnecessarily large dose.

The importance of the careful selection of the anaesthetic for operations for tonsils and adenoids is emphasized by such figures as were collected by one of us (A. L. F.) and reported in the *Proceedings* of the Royal Society of Medicine, December 5th, 1913, showing that of 700 inquests on "anaesthetic" deaths no less than fifty-six were in cases of tonsils and adenoids.

Finally, we may be allowed to state our conviction that in skilful hands there is no greater danger in complete enucleation than in large but incomplete removal of tonsils unless the conditions are exceptional. It is obvious that in cases where previous disease has caused deep and firm adhesion of a tonsil to the tissues in which it is embedded, and where a complete removal requires careful dissection, there is greater danger of injury to the fauces and of troublesome haemorrhage; and in haemophilic patients the larger vessels divided in enucleation are more difficult to control than those divided in removing a slice of tonsil. But with the great majority of cases enucleation with a guillotine may be as safely and quickly performed as taking a slice off the projecting tonsil, which procedure is the right one to adopt in any particular case, although it is, of course, a matter which does not concern the discussion so ably raised by Dr. Gabbett.—We are, etc.,

P. WATSON-WILLIAMS,
ARTHUR L. FLEMING.

Bristol, June 24th.

SIR,—In the interesting correspondence in the JOURNAL of June 21st, arising out of Dr. Gabbett's note in the JOURNAL of June 14th, three features are of outstanding interest.

The first is that the dangers of light chloroform anaesthesia are now becoming generally recognized. For so long we were obsessed with the idea that fatalities only occurred from overdosage, those occurring in patients lightly under chloroform being attributed either to the sudden inhalation of an overwhelming dose during struggling, or to the absorption of such from vapour stored in the lungs in cases of respiratory obstruction. It is to be hoped that this correspondence will meet the eye of, and duly impress, those who have not as yet accepted the modern view. There are still many who believe that with chloroform safety lies in light anaesthesia. I think, however, every practical anaesthetist would admit that the contrary is the case.

The second point is the recognition given by Dr. Rood to the explanation of these fatalities furnished by the experimental work of Dr. Goodman Levy. This recognition will, I trust, soon be universal, and every surgeon and anaesthetist be guided by the principles laid down by him in his contribution to *Heart* (vol. iv, No. 4) and various other papers. Dr. Levy has one advantage over other research workers in this field: he was for a period a practical anaesthetist, being a colleague of mine at the North-West London Hospital.

The third point is the support given by leading authorities on tonsillectomy to the revival of ether induction in these operations. Years ago, when tonsillectomy rather than tonsillectomy was the operation in vogue, the gas-ether-chloroform (Junker) sequence was the common anaesthetic procedure and served very well. With the advent of the more deliberate operation surgeons demanded a much deeper anaesthesia, and chloroform, only, became customary. The method at present advocated is the same in principle as the old one, though carried out with modern refinements and alterations. It has the same advantage of getting rid of all danger during the induction period. But, like it, during the later stages of the operation the dangers of light chloroform are not always entirely eliminated, much if not everything depending on the ability of the anaesthetist.—I am, etc.,

London, W., June 21st.

G. A. H. BARTON.

SIR,—Your correspondents upon this subject agree that open ether is a suitable anaesthetic for the operation of enucleation of the tonsils. By all means let ether be employed whenever suitable, on the score of safety.

Mr. Waugh's series of 18,000 operations under very deep chloroform anaesthesia, with a single death, described as due to exhaustion, is a testimony to the truth of my contention that full chloroform anaesthesia is free from the risk of sudden cardiac failure, and that, furthermore, fatalities from overdosage are of the rarest occurrence; syncope from overdosage is not fatal if promptly dealt with.

The extreme depth of anaesthesia employed by Mr. Waugh for special technical reasons is not requisite generally in order to guard the heart against sudden failure; it is merely necessary to maintain the anaesthesia continually at what is known as the surgical degree. Mr. Waugh says: "To obtain deep chloroform anaesthesia the dangerous zone of light anaesthesia must always be traversed. Modern research has shown how uncontrollable this danger is." I am afraid I am not aware of the research in question; my own researches show that the danger is controllable, and surely Mr. Waugh's own statistics show that the danger of induction was controlled in his series of 18,000 cases. For the safe induction of chloroform anaesthesia it is again only necessary to administer the vapour continuously and of sufficient strength to get the procedure expeditiously performed. This is a common experience in experiments upon cats, which are otherwise peculiarly liable to sudden cardiac failure. I do not think any useful purpose can be served by exaggerating the danger associated with the use of chloroform.

I rather doubt if the administration of a mixture of chloroform and ether can be made perfectly safe, except when the chloroform preponderates. I think Mr. Tilley takes a certain risk in following up an induction by open ether with a relatively short administration of chloroform

from a Junker's inhaler—why not follow on with ether vapour pumped through a tube, if a tube is necessary?

Finally I may again emphasize the value of such clinical records as that afforded by Dr. Gabbett. For every such case reported a hundred are unreported and lost to medical science. Perhaps, some day, we shall see a compulsory clinical report substituted for the effete coroner's inquest.—I am, etc.,

London, W., June 23rd.

A. G. LEVY.

THE TREATMENT OF THE NEURASTHENIC PENSIONER.

SIR,—In your issue of May 31st Dr. James M. Rutherford suggests an alternative method to hospital treatment for the neurasthenic pensioner. On looking closely into his scheme it appears to have several faults:

1. Dr. Rutherford suggests that in different areas a staff of physicians familiar with the treatment of war neuroses should be appointed to treat the pensioner privately. I fear that with the present number of neurasthenics in England sufficient medical men familiar with war neuroses could not be found.

2. He also suggests that the patient's mental symptoms should be analysed, and further suggests a few visits at intervals of a week or two. I am afraid many visits would have to be paid, and much oftener than at intervals of a week or two, if mental analysis is to be successful and completed in a reasonable time.

3. Contrary to Dr. Rutherford's experience, I have found in boarding neurasthenic pensioners that very few are averse to hospital treatment.

4. I have been in charge of this institution for neurasthenic pensioners since it was opened early last year, and I have found the results most encouraging; the patients are happy and contented. Dr. Rutherford's "important point" can be carried out—that is, no suggestion of military conditions.

In hospital there is no time lost on the part of the doctor or patient travelling one to see the other. The doctor is constantly on the spot to hear his patients' trouble and advise them. He can see them daily, and certainly more often than at intervals of a week or two. He can show them similar cases to their own, recovering or recovered; and that most important point in good results can be obtained which cannot be obtained from Dr. Rutherford's scheme—namely, a curative atmosphere.—I am, etc.,

A. D. McMULLAN,
Medical Superintendent.

Leicester Frith Home of Recovery for Neurasthenia,
Leicester, May 31st.

ENCEPHALITIS LETHARGICA.

SIR,—Major Brasher and his colleagues, in their interesting paper upon two cases of encephalitis lethargica (BRITISH MEDICAL JOURNAL, 1919, i, p. 733), say that it does not appear that any connexion was observed (in Vienna, in 1917) between von Economo's cases of "encephalitis lethargica" and an epidemic of influenza. The fact is that "grippe" was prevalent in Vienna at the time that von Economo's cases were observed, but this "grippe" was decided not to be "influenza" because Pfeiffer's bacillus was not found (cf. *Daily Review of the Foreign Press: Medical Supplement*, 1918, July 1st, p. 221). In the same way the epidemic of grippe that preceded (and accompanied) the poliomyelitis in the United States during 1916 was said to have been a "pseudo-influenza" (Capp and Moody and others, *Journal American Medical Association*, 1916).

As a matter of fact, quite a large number of the cases that occurred in London in the early part of 1918 manifested an initial stage that was clinically indistinguishable from influenza. There are, indeed, for these cases, three types of onset. In one an early "influenza" is separated by a distinct but variable interval from the onset of "nervous" symptoms; in another the "influenza" runs into the "nervous" stage; in the third the "nervous" symptoms occur without obvious precedent illness. Laborde, more than fifty years ago, recognized much the same kind of happening in relation to "infantile paralysis"; and, as all the world knows, Draper and others have distinguished similar "types" of onset in "poliomyelitis".—I am, etc.,

London, W., June 16th.

F. G. CROOKSHANK.

INFECTIVE CATARRHS—SO-CALLED "COLDS."

SIR,—In connexion with the question of "the common cold," the following facts may interest your readers. During the past few years I have been giving empirical vaccine treatment for various pathological conditions in addition to those for nasal and bronchial catarrh. I have found that when giving a mixed autogenous vaccine made from the nose or throat for any cause the patients were protected from "colds" during, and for a variable time after, the course of injections. Further, during last winter six patients who were having vaccine injections at regular intervals—two for rheumatism, two for neuritis, one for subacute nephritis, and one for toxic heart symptoms—all except one were in close contact with influenzal cases, but not one of them took the disease.

Whether the explanation is symbiotic, or whether the mucous membrane is made more susceptible to catarrhal infection by the presence of other organisms, a satisfactory line of treatment is obvious—that is, kill the organisms inhabiting the respiratory tract. Personally I think the best way of doing this on a large scale would be to institute chloramine vapour rooms, public and private, where all patients could attend at such intervals as might be found necessary.—I am, etc.,

Oxford, June 21st.

HELEN G. LEYTON, M.D.

THE RURAL PANEL DOCTOR.

SIR,—The rural practitioner has little opportunity of expressing his views on professional matters except through the medical press. Owing to his isolated position and the distances to medical meetings it is impossible for him to take a useful part in the discussions of medical problems, with the result that the rural practitioner has little influence in medical politics and the work is dominated by the town practitioner, and hence it is that our county Medical Committees do little to help the rural panel doctor.

I read that some of the county Medical Committees have recommended the acceptance of the increased income limit for insured persons ordered by the powers that be. It is to be hoped that the elections of Panel Committees now going on will infuse new blood into these fatigued bodies who seem ever ready to adopt every suggestion made by the insurance authorities.

The suggested increase of the income limit will in course of time practically destroy private practice in country districts. Limiting the increase to those workers already insured whose income has increased beyond the present limit, will cause so much dissatisfaction amongst the new workers of the same income that it will be soon abandoned, especially as the friendly societies are always eager to get the better class of workers into their net, and insurance authorities are always ready to assist them without considering the welfare of the medical profession. We should never forget there will be no going back, the income limit will never be reduced, the increased limit will be thrown open to all classes, those voluntarily as well as those compulsarily insured, and with the increased cost of private work in the near future there will be a marked increase of voluntary contributors for the sake of medical benefit, leaving little for the country doctor but panel work.

If we are compelled to accept this 56 per cent. increase in the insured income limit the workman ought to be compelled to pay a corresponding increase in his yearly contribution. He now pays 17s. 4d.; he would then pay 27s. With his present payments 9s. is set aside for medical benefit; at the same proportion of the increased contribution 14s. would be allotted for medical benefit. The increased cost of living and the greatly increased cost of working entitles us to expect at least this amount. Whatever capitation fee is agreed to it ought to be a minimum one, and avoid a repetition of our experience in 1917, when we were guaranteed 9s. and received 7s. per head, so that those of us who work in the country and have to live on small incomes may know beforehand what minimum payment we will receive for our panel work.

The capitation fee should never be at a flat rate for town and country work, for the country doctor should be fully recompensed for the far greater proportionate expense in doing his work, and also be allowed for the longer time spent in visiting his patients.

When the time comes for signing agreements, why

should we not be allowed to have a definite agreement, and given a time limit if it is thought necessary, instead of a one-sided contract whereby the insurance authorities are at liberty, at any time, to issue new regulations which may alter or increase our work, and give us five or six weeks to decide whether we relinquish what may be a large portion of our income?—I am, etc.,

Beckington, June 13th.

W. G. EVANS.

RADICAL CURE OF FEMORAL HERNIA BY THE
INGUINAL ROUTE.

SIR,—I am very glad that Mr. Percival P. Cole has called attention (p. 763) to this method of radical cure of femoral hernia by the inguinal route. I have used it for many years, and my experience has been the same as his—that it appears to be an unfamiliar method to most people. I expect it is many years since Mr. Cole read *Aids to Surgery* (if ever), but he will find it advocated there.

My only regret in reading Mr. Cole's description is that in describing the passage of the sutures he says that below they "pass through the posterior thickened margin of the femoral ring—Cooper's ligament." Now Cooper's ligament is a firm dense white band, and is a very definite structure, and should be seen when passing the sutures, whereas, if this is not definitely laid down, any one unfamiliar with the operation and doing it from a description would probably pass his sutures through the fascia of the pectineus, as it really forms the posterior margin of the femoral canal. I am sure Mr. Cole will agree with this.—I am, etc.,

London W. June 23rd.

JOSEPH CUNNING.

INCOME LIMIT FOR INSURED PERSONS.

SIR,—I have read the account of the deputation on June 2nd (BRITISH MEDICAL JOURNAL, June 7th, p. 715), and I am convinced that abandonment of the income limit to non-manual workers would be a profound mistake, and a calamity to the medical profession. The only attitude to adopt is to resist by all means in our power the proposed increase, because if once raised it will never be lowered again, no matter how the value of money falls. With the proposed inclusion of dependants it means a State service to a very large class of the community. Such a diminution of private practice is a serious consideration for the medical profession, affecting as it does all grades. To the panel practitioner it means a diminution of private practice, and to the non-panel man it means a large proportion of his practice being filched from him by the State, and without compensation. In the Government's explanation the difference between the manual and the non-manual worker is stated to be merely technical, but in the great majority of cases the non-manual worker is paid a yearly salary, whereas the manual worker is paid by the hour, and absence from work means absence of pay. It is also stated that the non-manual worker loses all benefits if his income exceeds £160 per annum; I understand that this is not the case; such a person may continue in insurance by merely paying his own and his employer's contribution, namely, 7d. a week; by paying an additional 4d. a week he can remain under the Insurance Act.

I entirely fail to see how large bodies of employers, trade unions, and many important societies are pressing for this increase. In the case of employers there is no reason why they should complain of being relieved of the necessity of paying 4d. a week for each employee, and from a wide personal acquaintance with the employees I know there is deep discontent with the present form of the Insurance Act.

As to the further argument—that few people will be included who are not already insured—this I am sure is wrong. Increases in salaries are not so general as represented, and the ultimate result will be an increase in the number of insured persons who should never be under this Act.

Lastly, it is a striking display of Government methods when one department opposes any heightening of the incidence of income tax, and another is extremely solicitous to raise the income limit of insured persons owing to

a cause which should operate, if at all, in both cases—namely, the lessened purchasing power of money.—I am, etc.,

Newcastle-on-Tyne, June 17th.

JAS. HUDSON.

INSURANCE TERMS AND CONDITIONS.

SIR,—Having attended meetings in connexion with impending changes in professional affairs, the things which have made the most impression upon me are the apathy of members, as shown by the small numbers present at the meetings, and the marked revolutionary, almost Bolshevik, nature of the schemes suggested.

Not being in general practice, but with many friends who are, it seems to me hard that a man who, either because he is popular or energetic, has obtained a large panel practice, should have his lists limited, the assumption being that the men who wish to restrict their neighbours' lists have not been so successful themselves. After all, the panel practitioner works for what he gets, and has either bought his practice or built it up by hard work. Are these men to be compensated for the loss of capital involved? True, they can get out of the difficulty by taking an assistant or partner, or by reducing their lists for the benefit of those with smaller lists.

Why should men be encouraged to settle in any area by guaranteeing them a living for a couple of years, when the other men in such areas have earned their right to practise there either by starting from nothing and waiting for practice, or by buying a practice?

Why should the present income limit be raised for panel patients? Granted that money has only half the purchasing power it had four years ago; that should be rather an argument in favour of doubling the panel doctors' remuneration than for extending the benefits of the Insurance Act to others than those already insured. If the benefits are to be extended to other people, the whole thing resolves itself purely into one of remuneration, which is the one thing apparently that cannot be talked about at any meeting. Questioners are told that all that will be settled later; but have members forgotten 1913?

The last point is that of special treatment for insured persons. The Act without provision for special work is defective, and clinics should be open for insured persons in the evenings, so that a day's work is not lost to the worker. For six years the maligned specialist has done the bulk of this work for nothing in the hospitals, while the panel doctor has drawn remuneration for looking after the patient. Now that there is a chance of such work being paid for, it is suggested that these benefits be extended to other sections of the community, and that the panel practitioner shall have the opportunity of participating in the treatment, in addition to his ordinary panel work. Nothing has hindered him from so doing before; he had the patients, and could have done his own refractions or operative work; and there can be no logical objection to any one practising a specialty, provided he can do the work. Let them be specialists in the sense that they confine their practice to one thing—to the exclusion of general work, which is what the general practitioner demands at present of the men he sends his work to. They cannot expect to have it both ways, or they may find Nemesis overtaking them in the shape of the present oculist or laryngologist, whose practice has been thus taken from him, being compelled to go on the panel for general work in a district where they have invested money in practices, the newcomer having an income guaranteed at their expense for a couple of years.—I am, etc.,

London, W., June 20th.

SYDNEY TIBBLES.

SIR,—I should like to say that I am heartily in accord with the opinion expressed by Dr. Picton in his letter on pp. 782 and 783 in your issue of June 21st, that the British Medical Association and the Commissioners appear to be working together far too harmoniously. I attended a conference at Plymouth on June 20th to discuss M. 25 under the guidance of the Medical Secretary of the British Medical Association and a Commissioner; and I am compelled to say that as a result of what I heard at that meeting I am more than ever suspicious of the manner in which the interests of the profession are being safeguarded.

Personally I am of the opinion that until the profession can approach the Government as a strongly organized trade

union we shall continue to be treated with the contempt that has been meted out to us in the past; and I consider that the sooner the profession becomes a trade union the better.—I am, etc.,

Bere Alston, June 23rd.

HORACE BROWN.

SIR,—I wish to add my protest to those against the proposals outlined in M. 25, and to the whole tone of the report. The outstanding feeling after perusing it is that we are being absolutely given away by our Association, which, instead of working and holding out for the rights and privileges of its members, is, through its Insurance Acts Committee, apparently agreeing to anything the Government or Commissioners may propose.

All through the report it seems as though the Commissioners' contentions and points of view are supported and upheld and those of the profession ruled out. Who is going to work this scheme—the Insurance Acts Committee or the practitioners? More work in the shape of reports, medical histories, etc., is calmly accepted, more dictation as to whether one shall take midwifery and surgery, more inroads on one's cherished hours of leisure. We are not to be absent from our surgeries without providing a deputy, and, generally speaking, we are to hand ourselves over body and soul to the other party to our agreement, who is still to be our judge.

Is it any wonder members are joining other organizations in the hope of obtaining some help and protection? Personally, I feel I am helping my own undoing by continuing a member of the British Medical Association, and I know I am not alone in thinking so.

Is there to be nothing but a feeble protest, and then, apparently, agreement, *re* raising the income limit for insured persons? Little by little all our private work is to be filched from us, and we are to be cramped and hampered in our work by onerous regulations, restrictions, and dictation, and finally, I suppose, to be nationalized and driven into being servants of a vast bureaucratic machine. Truly an enticing future.

Is it too late to make an appeal to our Association to think and act in the interests of us its members, and through us the wider interests of our patients?—I am, etc.,

Monton Green, June 15th.

ALFRED M. BILLINGS.

SIR,—As delegates of the London Panel Committee we attended the conference called by the council of the Medico-Political Union on June 24th, with the object of discussing "the great changes in panel practice foreshadowed in M. 25 as issued (*sic*) by the Commissioners and the Insurance Acts Committee of the British Medical Association."

At the outset the chairman, Dr. F. Coke (the President of the Union), made the announcement that the conferences of practitioners called by the British Medical Association to discuss M. 25 were only allowed to discuss the summary, and later he made the extraordinary statement that the Insurance Acts Committee had discussed only the summary of M. 25 (their own report).

On the first point on the agenda—namely, "the general nature and purpose of the report," we endeavoured on behalf of the London Panel Committee to clear up these misconceptions and misrepresentations. We asked how the council of the Medico-Political Union could consistently call a conference to discuss M. 25 when the Union, at the annual meeting on June 12th, had prejudged the whole position in adopting the following resolution:

That it is not to the interests of the members of the Union to accept any agreement based upon the Report M. 25 of the Insurance Acts Committee of the British Medical Association,

and at which meeting the secretary pointed out very pertinently, in answer to an inquiry, that the council of the Union were bound by this resolution, but not bound by anything that took place at the conference on June 24th (vide *Medical World*, June 20th, p. 521).

As no explanation was forthcoming, and as we were ruled out of order, though discussing the nature and origin of M. 25, we considered it futile to remain in the conference. The proceedings had been prejudged, and we felt that we could not further compromise our Panel Committee.—We are, etc.,

B. A. RICHMOND.

H. G. COWIE.

London, W.C., June 24th.

MEDICAL DEMOBILIZATION.

SIR,—Since you published a letter from me on June 7th I have received a good many communications from officers who are suffering from prolonged detention. Perhaps the most striking instance is that of a Territorial R.A.M.C. officer, aged 45, who has served since 1914 and is still in France, presumably because, having lost his practice, he has been considered as having no special claim for release.

I should suggest that the Secretary of State be asked in the House of Commons for a return showing the number of temporary S.R. and Territorial medical officers still employed abroad that we may know what the extent of the grievance is. I personally cannot form an estimate, but if the total number is small it ought to be fairly easy to deal with the matter, and if it is large obviously some remedial measure is urgently required.—I am, etc.,

London, W.

HUGH THURSFIELD.

A PLEA FOR A "REFERENDUM" IN IMPORTANT MATTERS AFFECTING THE MEDICAL PROFESSION AND THE MINISTRY OF HEALTH.

SIR,—Numerous meetings are now being held by the Branches of the British Medical Association to discuss the future of the medical profession and the Ministry of Health. These meetings are seldom attended by as many as a third of its members, and therefore do not properly represent their respective districts. Of those who attend a large proportion does not express its views.

The scheme which is being discussed is the outcome of round table conferences between representatives of the Government and medical representatives partly supplied by the British Medical Association.

Many members of the Association claim that the views set forth by their representatives were not the views of the profession as a whole. Many members of the Association who were on active service while the future work of the profession was being discussed and planned have expressed disagreement with the part played by the British Medical Association representatives, and have since left the Association. A rival organization has been formed to look after their particular interests. None of this makes for unity, and without combination the profession will not get justice done to it. If ever there was a time when medical men required to look after the interests of the profession it is now. The new measures about to be introduced affect every member of the profession very deeply.

I would therefore suggest that referendum papers on all important items be printed and circulated among all members of the profession. In that way would be obtained the views of those members of the Association who are unable to attend the local meetings and those who no longer see eye to eye with the Association. The Government will apparently only deal with the British Medical Association, but it is only fair that others who are just as vitally affected should be heard also. In this way the profession might oppose a combined front.—I am, etc.,

Brixham, June 22nd.

W. SIDNEY SWEET.

VOLUNTARY HOSPITALS AND PAYING PATIENTS.

SIR,—If the present hospitals are to admit paying patients there must be some means of relieving them of their already excessive number of free patients. Now a fair proportion of present hospital patients do not require the attention of those who are exclusively physicians, surgeons, or specialists, nor an institution with costly wards, and buildings, elaborate theatres, laboratories, and x-ray departments; but they do need ordinary medical or surgical attendance and nursing, this latter including the strict carrying out of orders. If such patients could be cared for elsewhere, not only would the waiting list be got rid of, but there would be room for those who can pay something for their medical and nursing attendance, but who cannot pay the expenses of a nursing home and operation fee. This class has as good a right to the best treatment as any other, and the fees they would pay to the hospital would, as was shown in the original letter on the subject, greatly help the financial position of the voluntary hospitals.

These two advantages—more hospital accommodation and financial help to the present hospitals—could be

attained by the plan I suggested in a letter to the **BRITISH MEDICAL JOURNAL** on January 25th. Perhaps I may be allowed briefly to summarize it. It is that there should be auxiliary hospitals (1) staffed by general practitioners attending their own cases, (2) admitting both (a) patients for whom the state assumes responsibility under the National Insurance Act and (b) private paying patients, (3) nursed by part-time nurses on the voluntary aid detachment plan with a limited trained staff, (4) built on the hutment principle, and (5) financed from the rates, with a grant from the Ministry of Health. Such auxiliary hospitals could be built for a fraction of the cost of the present hospitals, and the cost of maintenance would be more economical. They would admit all cases not requiring a major operation or special diagnosis or specialist treatment. Every doctor would thus have the opportunity of treating patients in hospital, and insurance doctors would be enabled to undertake the additional treatment that they will probably be required to undertake, either in- or out-patient treatment, under much better conditions than would be possible at the doctor's or the patient's house. The plan would also allow emergencies, such as the late influenza and pneumonia epidemics, to be dealt with by the use of additional huts or tents.

While possessing these advantages it might be made the means of relieving the strain on the voluntary hospitals both as regards patients and finances.—I am, etc.,

Boscombe, June 16th.

F. C. BOTTOMLEY.

Obituary.

HERBERT WILLIAM FAGGE, M.R.C.S., L.S.A.,
Lutterworth.

HERBERT FAGGE, who died at Lutterworth on June 11th, aged 75, was the last survivor of the family of Charles Fagge, of Hythe, Kent. Like his great-grandfather Felix Fagge of Ashford, his grandfather Charles Fagge of Ashford, his father, his two elder brothers, and his two sons, Herbert Fagge was educated at Guy's Hospital. He took the diploma of M.R.C.S. in 1866; at that time his uncle John Hilton was surgeon to, and his eldest brother C. Hilton Fagge was on the junior staff of, the hospital.

After serving as house-surgeon at the Royal Free Hospital, Herbert Fagge went into partnership at Lutterworth with the late Dr. Buzzard in 1867, and after this partnership had been dissolved a few years later, continued to practise there alone until the end of 1913, some forty-seven years in all. For nearly forty years he was medical officer and public vaccinator for the 1st District and Workhouse, Lutterworth Union. His wife and youngest son predeceased him; his eldest son, R. Hilton Fagge, practises at Melton Mowbray, and his younger son, C. H. Fagge, is surgeon to Guy's Hospital.

Practically the whole town was represented at his funeral on June 14th, a fact which bore testimony to the regard with which his life's work amongst them had inspired his fellow townsmen.

CAPTAIN JOHN HENRY MAGOVENY, R.A.M.C.(S.R.), was reported as having died on service, in the casualty list published on May 23rd. He was educated at Glasgow University, where he graduated M.B. and Ch.B. in 1913. After filling the posts of house-surgeon of the Victoria Infirmary, Glasgow, and house-physician of the Royal Infirmary, Bradford, he took a commission as lieutenant in the Special Reserve of the R.A.M.C. on September 23rd, 1914, and was promoted to captain on April 1st, 1915.

CAPTAIN ROBERT MACKENZIE MORISON, R.A.M.C., was reported as having died on service, in the casualty list published on May 23rd. He was educated at Glasgow University, where he graduated M.B. and Ch.B. in 1908, and after acting as house-surgeon of Greenock Infirmary, and as assistant medical officer at Wye House Asylum, Buxton, he went into practice at Greenock. He took a temporary commission as lieutenant in the R.A.M.C. on June 1st, 1916, was promoted to captain after a year's service, and received the Serbian Order of St. Sava on April 21st, 1917.

CAPTAIN ROBERT WILLIAM SKINNER MURRAY, R.A.M.C. (S.R.), was reported as having died on service, in the casualty list published on May 23rd. He was educated at Aberdeen University, where he graduated M.B. and Ch.B. in 1912, and also took the D.P.H. in 1913. After serving as house-surgeon of the General Hospital, Tunbridge Wells, he took a commission as lieutenant in the Special Reserve of the R.A.M.C. on November 28th, 1914, and was promoted to captain on May 28th, 1915.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on June 19th, the degree of Doctor of Medicine was conferred upon E. L. Collis.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary Council was held on June 12th.

Results of Examinations.—A report from the Board of Examiners in Anatomy and Physiology for the Fellowship showed that at the recent examination 73 candidates were examined, including 20 admitted under the special war conditions (of whom 15 were successful); and 53 admitted under the advisory conditions (of whom 23 were successful).

Diplomas of Fellowship were granted to 15 candidates found qualified at the recent examination.

Universities of Allahabad and Malta.—These were added to the list of universities whose graduates in medicine and surgery may present themselves for examination for the Fellowship without first becoming members of the College.

Examinations in Dental Surgery.—On the recommendation of the Board of Examiners in Dental Surgery it was decided to revert to the practice of holding three examinations for the licence in dental surgery in the year in view of the large number of students now in the schools. The first professional examination will be held on October 3rd, 1919; January 29th, April 29th, 1920—and the second on November 7th, 1919; February 27th, May 28th, 1920.

Mr. Jonathan Hutchinson was elected a member of the Board of Examiners in Dental Surgery in the vacancy occasioned by the retirement of Sir Charles Ballance.

Appointment of Examiners.

The following appointments were made. Anatomy and Physiology for the Fellowship:

ANATOMY.—A. R. Thompson, W. Wright, J. E. S. Frazer, G. Taylor.
PHYSIOLOGY.—J. B. Leathes, H. W. Lyle, F. A. Bainbridge, A. R. Short.

Examiners under the Conjoint Examining Board.

ELEMENTARY BIOLOGY.—T. W. Shore, J. P. Hill.
ANATOMY.—A. Thomson, F. W. Jones, F. G. Parsons,
PHYSIOLOGY.—G. A. Buckmaster, H. E. Roaf.
MIDWIFERY.—J. S. Fairbairn, G. F. D. Smith, C. Lockyer, G. D. Robinson.
DIPLOMA IN PUBLIC HEALTH.—Part I: J. W. H. Eyre. Part II: F. N. K. Menzies.
DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—Bacteriology: J. W. H. Eyre. Diseases and Hygiene of Tropics: C. W. Daniels.

Appointment of Lecturers.—Hunterian Professors: Dr. Arthur Keith, F.R.S., Sir Berkeley G. A. Moynihan, K.C.M.G., C.B., Mr. Walter George Spencer, Mr. James Sherren, Mr. Harry Tyrrell Gray, Mr. Rupert Farrant, M.C., Mr. Vincent Zachary Cope. Arris and Gale Lecturers: Dr. Frederic Wood Jones, Professor Gratton Elliot Smith, F.R.S. Sir John Tweedy was asked to give the first Thomas Vicary Lecture, the historical lecture in anatomy and surgery instituted by the Barbers' Company. Professor Arthur Keith, F.R.S., was reappointed Arnott Demonstrator.

Election of Members of Council.—The Council wishes to remind Fellows that the election of members of the Council takes place on July 3rd, 1919. Voters by proxy should send in their votes by that date. Votes can be recorded in person at the College between 2.30 and 4.30 on July 3rd.

Medical News.

DR. W. B. CRAWFORD TREASURE was recently presented with a silver cigar-box and cheque at a meeting of the Cardiff Division of the South Wales and Monmouthshire Branch. The presentation was made in recognition of Dr. Crawford Treasure's long and valuable services to the medical profession at the Representative Meetings of the British Medical Association and as honorary secretary of the Cardiff Local Medical and Panel Committee.

DURING the business of the recent Group Conference at Plymouth, the chairman, Mr. Robert Jaques, claimed the indulgence of the meeting to present to Dr. R. H. Wagner, honorary secretary of the late Local Medical War Committee, a handsome silver salver together with a wristlet watch for his daughter as a token of appreciation of his and Miss Wagner's valuable services to the committee.

IT was stated in the JOURNAL of April 5th that Miss M. M. Gibson had placed in the hands of the Royal Society of Medicine a sum of money sufficient to provide a scholarship of the yearly value of at least £250, in memory of her father, the late Mr. William Gibson of Melbourne, Australia. The scholarship is intended for qualified medical women who are subjects of the British Empire, and is tenable for a period of two years. The first award has been made to Miss M. Esther Harding, M.B., B.S. Lond.

A DANCE in aid of the Royal Medical Benevolent Fund Guild will be held at Princes Galleries on Wednesday, July 16th, at nine p.m. Tickets (one guinea, including supper and bridge) may be obtained from the honorary secretary, Miss Tweedy, 100, Harley Street, W.1.

THE Brussels Medical Graduates' Association proposes to hold a dinner in July; particulars can be obtained from the honorary secretary, Dr. Arthur Haydon, 31, Westbourne Terrace, Hyde Park, W.2.

A COURSE of clinical lectures for advanced students, open free to members of the profession, will be given by Mr. Frank Kidd, F.R.C.S., at the London Hospital, on Wednesdays, at 4.15 p.m., during August, beginning on August 6th. The subject will be intermittent blood infections and their relation to certain common diseases of the kidney, prostate, testicle, and other organs.

A SOCIETY for the destruction of agricultural pests was founded in London on June 25th, with the Duke of Bedford as president and Lord Northcliffe as vice-president. Lord Aberconway, who presided, said that he intended to introduce a bill for the destruction of rats, making it compulsory for local authorities to take action. For the present the chief activities of the new society will, it would appear, be directed against the rat, and this invests the project with medical interest. The rat is not only destructive of cereals, but is a mischievous carrier of disease.

THE Local Government Board for England and Wales has promulgated new cerebro-spinal fever regulations, certain difficulties having arisen under those issued last year. The new order makes regulations enabling county councils and county borough councils to provide or arrange for the examination and treatment of persons suspected to be suffering from cerebro-spinal fever, and of contacts, and to supply serum and vaccine for the treatment of cases, or suspected cases, of the disease, and apparatus for the use of the serum or vaccine. The terms of the order have been extended to include vaccines, as there is reason to believe that subacute and chronic cases have derived benefit from treatment with sensitized vaccine.

A MEDICAL missions exhibition, under the chairmanship of the Bishop of Stepney, will be open until July 5th in the yard and crypt of the church of St. Martin-in-the-Fields, Trafalgar Square. All the missionary societies doing medical work abroad which have London head quarters are co-operating in the effort. The ignorance and superstition which accompany native treatment of the sick among many primitive peoples are effectively illustrated by native instruments and compounds, and there are also on view, in contrast to these, the medical missionary's camp equipment and the interiors of dispensaries and hospitals in the East. There are large models of the Tarn Taran leper asylum in the Punjab, the Jerusalem hospital of the London Jews' Society, the Ping Ying hospital in China, and the Ludhiana School of Medicine, the last affording visitors an opportunity of studying the modern methods of training Indian women for responsible medical positions.

THE thirteenth annual meeting of the Museums Association will be held at Oxford on July 8th and the two following days. The meetings will be held in the Museums, where all members attending will be welcomed by Sir Herbert Warren, K.C.V.O., president of Magdalen, at 10 a.m., on Tuesday, July 8th. Afterwards an address will be given by the president, Sir H. Howarth, K.C.I.E., F.R.S., and this will be followed by the reading of a series of papers on museums in Oxford. Wednesday morning will be occupied by discussions on the propriety of transferring the control of museums to the education authority, and on various matters of detail. On Thursday Dr. W. Evans Hoyle, curator of the Welsh Museum, Dr. F. A. Bather, of the Natural History Museum, and Mr. Isaac Williams of Cardiff, will open a discussion on the desirability of establishing a diploma for museum curators, and on the course of training that should be required. In the afternoon visits will be paid to local museums and places of historic interest. There will be a dinner on Wednesday evening. Further information can be obtained from the secretary, Miss W. Blackman, Pitt-Rivers Museum, Oxford.

Letters, Notes, and Answers.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology*, Westrand, London; telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate*, Westrand, London; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra*, Westrand, London; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INCOME TAX.

E. M. S. inquires as to the method of obtaining repayment of income tax deducted from his gratuity on demobilization.

* * The Chancellor undertook to refund those deductions when statutory authority could be obtained. The Finance Act for the current year is now before the House of Commons, and we presume that our correspondent's army agents will, when the Act has received royal sanction, be authorized by the War Office to make a special payment to his account, or alternatively that the War Office will refund the amount direct. It is not practicable to do anything further in the matter until the Act is passed.

"HARD UP" inquires whether the unassessable gratuity should be included as part of his total income for purpose of abatement, etc.

* * No; the general rule applies that what is not assessable to the income tax cannot be regarded as "income."

PORK IN SUMMER.

A. G. asks: Is pork a wholesome article of food at all times of the year? I know people who would rather go without meat altogether than eat it during May, June, July, or August, saying that it is not in season then. Is there any reason why, when obtainable, it should not be eaten at any time of the year?

* * We do not know of any scientific evidence in support of the popular English belief to which our correspondent refers. It is known that pork, owing to the distribution of fat around the muscular fibres, is more slowly digested than beef or mutton. This may help to account for a prejudice against its use in the hot months of the year, but we can find no specific explanation of the current English belief, which seems, moreover, not to be held on the Continent. The proverbial saying that oysters should not be eaten during a month without an "r" need not, we apprehend, be extended to pork.

LETTERS, NOTES, ETC.

THE HIBERNATION OF MOSQUITOS.

CAPTAIN A. E. TAIT, R.A.M.C.(T.F.) (London, W.), writes: Although generally believed, it has not been conclusively proved that mosquitos live from one breeding season to another. In Macedonia it is June before any quantity of larvae are seen to be maturing to living mosquitos, and the end of October sees the finish of larvae reaching maturity. Therefore seven calendar months, or 212 days, are to be bridged over by hibernating mosquitos. At no time during these 212 days of non-breeding time was I unable to capture female specimens, *Culex* and *Anopheles*, all varieties, common during the breeding season in the area. I have recovered larvae in streams as late as March. These were bred out in bottles, but I am doubtful whether they would have matured under natural conditions. During March and April I have bred out in bottles, and have observed breeding naturally in streams and ponds other flies similar to mosquitos, and passing through larval and pupal stages. According to Stitt, the longest period a mosquito has lived in captivity is four months—I presume lunar months, or 112 days. I had alive on March 17th, 1919, a mosquito captured on October 30th, 1918; it has lived in captivity, through varying vicissitudes, therefore, for 168 days. This would appear to be a record. By this experiment 168 days of the 212 days non-breeding period has been bridged.

SALARIES OF TUBERCULOSIS OFFICERS.

"T. O." writes: As attention has been drawn to the raising of salaries of medical officers of health by 33½ per cent., I would call attention also to the fact that a similar rise was advocated by the British Medical Association in the case of tuberculosis officers. Before the war the minimum salary for a full-time tuberculosis officer was £500, yet these appointments are now frequently advertised at £600, instead of £650 (£500 + 33½ per cent.). In the last issue of the BRITISH MEDICAL JOURNAL the post of tuberculosis officer for the Metropolitan Borough of

Battersea is advertised at only £500—the pre-war rate. There appear to be many cases in which the appointment of tuberculosis officer is still offered at only £500, although not styled "assistant" tuberculosis officer; and, although in some instances he may work under a "chief tuberculosis officer" in others this title is assumed by the medical officer of health. Where this latter is the case the tuberculosis officer should receive the full salary of £650, according to the British Medical Association's resolution.

* * We have from another tuberculosis officer a communication to the same effect. The letter addressed by the British Medical Association to the local authorities of the United Kingdom under the control of the Local Government Boards, and to education authorities of city or borough councils in Scotland, expressed the opinion that the salaries of all medical officers of health, school medical officers, and other medical officers or assistant medical officers to local authorities should be increased by 33½ per cent. over pre-war rates. We assume that this applies to tuberculosis officers, and believe that this was the intention.

"THE LOST LEADER."

THE war and other causes have brought the drama to such a low ebb in London just now, that it becomes almost our duty to welcome a play that is a play, when with a trifling effort it can be brought within the range of medical interest. In the first place "The Lost Leader," by Lennox Robinson, is performed at the Court Theatre under the direction of Mr. J. B. Pagan, the versatile son of a distinguished Belfast surgeon. In the second place one of the leading persons in the piece is a London physician, learned in psychotherapy, whose fishing trip to a remote Irish village becomes a "busman's holiday"; and this part is played with a fine feeling for character by that accomplished actor Mr. Arthur Whitby, whose boyhood was spent in a west country doctor's home. With this excuse for straying into dramatic criticism we may very briefly say that the play is well written and admirably acted; that its plot is founded on the legend that Charles Stewart Parnell did not die when the world accounted him dead, but hid himself, after a sham funeral, in an obscure corner of Ireland; and that the third and last act—good as it is—seems rather more of a political tract than an act. How this play would be received in Dublin, or in Belfast, we cannot guess, but we regret to learn that it is soon to be taken off the London stage. Mr. Norman McKinnel is at his best, and his reincarnation of the lost leader of the eighties may recall poignant memories to those who "loved him so, followed him, honoured him."

SEXUAL BALDERDASH.

TEMPORARY SURGEON, R.N., writes: In a book enjoying some circulation in this country, entitled *The Science of a New Life*, by John Cowan, M.D., published by the J. S. Ogilvie Publishing Company, N.Y., and addressed "particularly to those who contemplate marriage," the following information is to be found:

1. If a married couple should desire to have their future offspring a fruit-grower "they should together enthusiastically read, study, and—eat fruit" before coition.
2. The time selected for sexual connexion should be "between eleven and twelve o'clock in the forenoon" of "only a clear, bright day, when the sun is shining." Climate and occupation would thus be of considerable importance were it not for the following rule:
3. After conception there should elapse "an interval of nearly three years in which no intercourse should be had by the husband or wife."
4. The treatment of gonorrhoea in the male consists only in rest, stoppage of alcohol and tobacco, plain diet, and bathing in tepid water.
5. Syphilis is treated on similar lines with the important addition of cold water. Such treatment, we are told, "will effectually eradicate the disease from the system." "Mercury or no other drug ever has or ever will cure syphilis—or, for that matter, any other disease." In fact treatment by mercury and potassium iodide "has and ever will result in harm to the patient."

I consider the dissemination of such doctrines among the lay public, especially at the present time, is greatly to be deplored. Is there no effective remedy?

The following appointments of certifying factory surgeons are vacant: Cowdenbeath (Fife), Glyn Ceiriog (Denbigh), Manchester (S.E.) (Lancaster), Yalding (Kent).

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THE
British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

SUPPLEMENT

CONTAINING

PROCEEDINGS OF COUNCIL

REPORTS OF STANDING COMMITTEES

MEETINGS OF BRANCHES AND DIVISIONS

PROCEEDINGS OF THE GENERAL MEDICAL COUNCIL

MEDICAL BILLS IN PARLIAMENT

NATIONAL INSURANCE PROCEEDINGS

NAVAL AND MILITARY APPOINTMENTS

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LONDON: SATURDAY, JANUARY 4TH, 1919.

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British Medical Association.

CURRENT NOTES.

Gratuities of Territorial Medical Officers.

Up till the middle of last summer a considerable number of Territorial medical officers whose substantive rank was that of captain or major, were holding the temporary rank of lieutenant-colonel whilst specially employed—usually as officer commanding a field ambulance or other medical unit. An Army Council Instruction, No. 818, of July 21st, 1918, was then issued giving approval to the formation of a general seniority list for Territorial medical officers, and stating that temporary rank might no longer be held or given in the R.A.M.C.(T.F.), but that officers then holding such rank would, if they continued to hold their appointments, be eligible for equivalent acting rank. We are assured, and we accept the assurance, that there was no sinister purpose behind this abolition of temporary rank in the R.A.M.C. Territorial Force. On October 30th, 1918, a Supplement to the *London Gazette*, No. 30981, enumerated the medical officers affected by the above Army Council Instruction.

Subsequently General Routine Orders were issued from G.H.Q. in France to the effect that officers holding temporary rank would be eligible for any increase in the pay of their temporary rank, and would receive the gratuities based on their temporary rank; but officers holding acting rank would not be eligible to receive any increase, and would receive the gratuity of their substantive—that is, permanent—rank on discharge or demobilization. These orders were issued as the result of Army Council Instruction No. 1164, of October 20th, 1918, and a special Army Order dated November 29th, 1918.

It appears from the Supplement to the *London Gazette* of October 30th, 1918, that substantive captains and majors R.A.M.C.(T.F.) who held the temporary rank of lieutenant-colonel—some of them since the beginning of 1915 and most of them for more than two years—were gazetted out of their higher temporary rank, and those who continued in command of medical units were at once re-gazetted as acting lieutenant-colonels with retrospective effect. At the same time and in the same way temporary majors R.A.M.C.(T.F.) were converted into acting majors. The difference in status between temporary and acting rank is negligible; but, so far as we are able to follow the matter, the final result will be that these Territorial medical officers on demobilization, instead of receiving the gratuity based on the higher rank held for long periods, will receive only the gratuity of their permanent rank. Reference to the Royal Pay Warrant will show that this may mean in some cases a loss of £200 or £300.

We have received many communications from Territorial medical officers with regard to this matter, and we have ourselves made inquiries. There is no doubt that the change from temporary to acting rank has been made in the case of those medical officers of the Territorial Force, and it seems equally certain that gratuities dependent upon rank will be paid on the last temporary or substantive (not acting) rank held by the officer at the end of his

service. It does not appear to make any difference whether the officer is demobilized at his own request or at the request of the Ministry of National Service on public grounds; his acting rank counts for nothing, however long it may have been held; the gratuity he receives is that of his last temporary or substantive rank.

The natural conclusion is that the retrospective change from temporary to acting rank has been made for financial reasons; if so, another deliberate injustice has been added to the many borne by the medical officers of the Territorial Force. But we have the assurance that it was not intended by Army Council Instruction No. 818 to affect adversely the gratuity to which Territorial medical officers would be entitled. Nor did this Instruction have any such effect until the issue at a later date of the Army Order laying down that a gratuity dependent on rank shall be assessed on the rate of pay of the last substantive or temporary rank, and not on any acting rank. We cannot believe that the Army Order which deprived acting rank of its gratuity was submitted, prior to issue, for discussion with the department most concerned—namely, the Territorial Force Department of the R.A.M.C.; and from our knowledge of that department we feel certain that it fully appreciates the injustice which must arise, and will press for reversal of the rule that gratuities shall be based on substantive or temporary rank alone. This matter has already been brought to the notice of the Ministry of National Service by the Central Medical War Committee, and we cannot believe that it will be allowed to drop. It is strange that the Order stating that acting rank would not count in assessing the gratuity should have been issued within a few weeks of the cessation of hostilities. There can be no doubt that a large number of Territorial medical officers were reckoning on an increased gratuity, earned by service in a higher rank in positions of responsibility.

The Manner of Demobilization.

The general conditions governing the demobilization of army medical officers are the same as those which apply to officers of all other branches of the army. An officer on demobilization is not, under the regulations, entitled to leave for a month or any other term, with pay; the regulation to this effect applies only to N.C.O.'s and men. In the case of medical officers the principle by which the Army Medical Department desires to be guided is that preference in release from military service shall be given to medical officers of the Territorial Force and Special Reserve, and to those temporary officers who have served longest. The application of this principle would in any case necessarily have been uneven, because the release of officers serving in Salonica, Palestine, East Africa, and India, must be to some extent governed by local conditions and the possibility of meeting local requirements on the spot. A much more serious deviation from the principle was due to the demand for the release of individual medical officers to meet the emergency created in certain districts by the epidemic of influenza which is now declining. A considerable number of medical officers have been given priority of release in order to meet the representations of the Ministry of National Service as to urgent civil needs. The plan is not unattended with difficulty, and as soon as

the present requisitions are fulfilled the War Office will, we have no doubt, revert to the general principle of demobilization according to length of service and personal circumstances—that is to say, according to the scheme of priority drawn up by the Central Medical War Committee.

Association Notices.

MEETING OF COUNCIL.

THE next Meeting of Council will be held on Wednesday, January 22nd, in the Council Room, 429, Strand, London, W.C.2.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

January 2nd, 1919.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—
Surgeon Lieutenant Commander K. D. Bell to rank as Surgeon Commander. Surgeon Lieutenants (temporary) W. A. Mills to the *Europa*, A. W. Cocking and C. L. Gimblett to Chatham Hospital. E. G. T. Holden and H. S. Le Marquand to the *Caesar*. To be Surgeon-Lieutenants (temporary): P. Gray, J. Ryan, J. L. Taylor.

ARMY MEDICAL SERVICE.

Temporary Colonel Owen Richards, C.M.G., D.S.O., relinquishes his commission.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel L. A. Mitchell is placed temporarily on the half-pay list.

The name of temporary Major Thomas Morton Frood is as now described, and not as in the *London Gazette* of June 1st, 1917.

Temporary Major P. Hannill (Captain R.A.M.C.T.F.), relinquishes his temporary commission on rejoining.

Captain G. G. Collet relinquishes the acting rank of Lieutenant-Colonel and reverts to the acting rank of Major, with pay and allowances of his substantive rank.

Captain W. P. MacArthur, D.S.O., to be acting Lieut.-Colonel whilst specially employed.

Temporary honorary Lieutenants to be temporary honorary Captains: O. H. Stansfield, M. Bronk.

Temporary Lieutenants to be temporary Captains: B. W. Skinner, D. McCormack, A. S. Moorhead, E. F. Buckler.

Officers relinquish their commissions:—Temporary Majors: W. D. Anderson, R. Dick. Temporary Captains: E. O'D. Graham, V. T. W. Eagles, M.C., and D. W. Jones on account of ill health contracted on active service and retain the rank of Captain. Temporary Captains:

W. G. L. Wambeek, C. T. M. Plowright, T. Duncan, M.C., H. W. Barber, J. B. C. Brockwell, E. A. Peters, F. L. Underwood, G. D. Laing, J. H. Ives, J. L. Digby, G. E. Lindsay, M.C., B. W. Cohen, W. F. H. Ives, J. L. Falcener, A. A. Spelswood, S. Robson, P. P. Warren, E. L. Mathew, E. E. T. Nuthall, R. Wilson, W. L. Dibb, S. Alexander, A. G. Harvey, F. W. Lyle, Arthur Chance, R. B. Julian, T. J. Ryan, J. A. Watt, J. G. Osburne, C. W. B. Littlejohn, S. N. Babington, L. M. Swandepool, J. W. Watheys, M.C., W. Mackenzie, H. S. Turner, M.C., J. Ellenbogen, C. O. Stallybrass, A. F. G. Kerr, A. G. H. Lovell, G. N. Lorimer, A. W. F. Edmonds (on account of ill health). Temporary honorary Captains: S. A. Henry (on ceasing to be employed with St. John Ambulance Brigade Hospital), R. M. Blake (on ceasing to serve with British Red Cross Society in France), Temporary Lieutenants: A. N. Symons, N. J. McCaskie, C. P. Lankester, G. F. N. Taylor, A. J. Watt, J. B. Minford, J. Morton, E. W. Whiting, E. Magoveny, H. J. Villiers, A. G. Heron, A. W. H. Cheyne.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Granted temporary commissions:—As Captains: G. Sparrow and C. C. O'Malley, late temporary Surgeons R.N. As Lieutenant: W. J. S. Cameron.

The initials of Captain T. J. Thomas are as now described, and not as stated in the *London Gazette* of November 26th, 1918.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain D. Loughlin relinquishes his commission on account of ill health, and retains the rank of Captain.

Captain E. R. Chambers relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

Lieutenants to be Captains: N. H. S. Maelzer, W. H. Rowden, J. Thompson, G. R. Sharp, F. L. Richard, C. H. Warner, F. Cameron, A. Wingfield, J. L. D. Buxton, E. P. N. Creagh, J. A. Stewart, T. P. Lloyd, G. F. Kirkett.

To be Lieutenants: W. E. P. Briggs, from Manchester University Constituency O.P.C., G. Winter.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel W. H. Delaney to be temporary Colonel. Temporary Captains to be acting Majors: A. G. MacLeod while employed as S.M.O., November 1st, 1918 (substituted for notification in the *London Gazette* of December 6th, 1918), R. M. Ferguson while employed at a stationary hospital, C. B. Preston while employed as Surgeon No. 15 Canadian General Hospital, Taplow; P. W. Blakeman while employed at No. 5 Canadian General Hospital.

SOUTH AFRICAN MEDICAL CORPS.

H. J. Hollis to be temporary Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captain (acting Major) T. H. Richmond to be acting Lieut.-Colonel whilst specially employed.

Seconded for service with the R.A.F.: Majors W. G. Mitchell, A. H. Hogarth, Captains W. H. H. Bennett, D. Cameron, J. H. Chauncy, J. P. N. Casey, C. C. Fitzgerald, O. Gleeson, J. J. C. Hamilton, J. M. Kirkness, P. G. Kempson, A. MacLennan, J. A. Parsons, F. Roberts, A. Scott-Turner, E. J. E. Saunders, H. J. Shanley, H. M. S. Turner, N. R. Williamson, C. Webb, A. Sutcliffe, J. M. Wyatt (5th London General Hospital), E. W. Gregory (1st London Sanitary Company), 1st London Sanitary Company.—Lieutenant A. G. Harrington to be Captain and to remain seconded.

2nd London General Hospital.—Major (Brevet Lieut.-Colonel) acting Lieut.-Colonel C. A. Lees to be Lieut.-Colonel on the permanent personnel.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Lieutenant-Colonel: Lieut.-Colonel W. E. Foggie, D.S.O., from 3rd Highland Field Ambulance.

To be Majors: Majors W. B. Armstrong, F. N. Grinling, W. T. Rowe, M.C., E. E. Dyer (acting Lieut.-Colonel) P. G. Williamson, M.C., J. Y. Rogers, D.S.O., and D. G. Campbell from Attached to Units other than Medical Units, J. A. Kendall from 2nd Northern Field Ambulance.

To be Captains: Captain (Brevet Major) W. J. Wilson, from list of officers supernumerary for service with O.T.C.; Captains D. Davidson, M.C., T. Higson, (acting Major) W. A. Robertson, W. C. F. Harland, B. G. Ewing, G. F. R. Smith, T. H. C. Derham, A. Morris, and A. A. Gunn, from Attached to Units other than Medical Units; Captains R. Hitchings and A. T. Swan, from the general hospital list, E. Hulme, from 2nd East Lancs Field Ambulance, D. M. Johnston and J. R. Chalmers, from 1st Home Counties Field Ambulance, W. Smith, from 2nd Northern Field Ambulance, (acting Lieut.-Colonel) G. C. E. Simpson, from West Lancs Casualty Clearing Station, (acting Major) J. H. Hunter, M.C., from 3rd Highland Field Ambulance, D. S. Sutherland, from 1st London Field Ambulance, (acting Major) A. R. Muir, from Lowland Mounted Brigade Field Ambulance, N. T. K. Jordan, from South Wales Mounted Brigade Field Ambulance, A. A. Pratt, from 4th Northern General Hospital, H. Stenhouse, from 2nd Northern Field Ambulance, W. J. Wilkinson, from 2nd East Anglian Field Ambulance, W. Bailey-Thompson, from Notts and Derby Mounted Brigade Field Ambulance, G. H. Kirby, from South Midland Casualty Clearing Station, A. M. Deane, and J. H. Paul, from Yorkshire Mounted Brigade Field Ambulance, W. L. Hibbert, from Home Counties Casualty Clearing Station, H. N. Crowe, from 2nd North Midland Field Ambulance, D. Macnair and (acting Major) H. C. Adams, from 2nd Wessex Field Ambulance, (acting Major) S. R. Foster, M.C., from 2nd North Midland Field Ambulance.

Lieutenant (acting Captain) H. T. Worlock to be acting Major.

APPOINTMENTS.

LLOYD, G. W. M.D., B.S.Lond., M.R.C.S., L.R.C.P., Assistant Medical Superintendent, Camberwell Infirmary.

DISTRICT MEDICAL OFFICERS.—H. L. Finny, L.R.C.P. and S.I. (Wirral Union); A. C. Heard, M.B., Ch.B. (Edin. (Carlisle Union); G. J. Meikle, L.R.C.P. and S.Edin. (Upton-on-Severn Union).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

HARTLEY.—On December 27th, 1918, at Basford, Stoke-on-Trent, the wife of Harold Hartley, M.D., F.R.C.S., of a son.

SAVY.—On December 26th, 1918, at Crooksbury Sanatorium, Farnham, to Ethel, wife of Captain Felix Savy, M.B., a daughter.

MARRIAGE.

KELSALL—ELDERTON.—On December 13th, 1918, at St. Leonard's Church, Streatham, by the Rev. A. P. Gutch, Vicar of St. Margaret's, Streatham, Major (acting Lieut.-Colonel) Robert Kelsall, D.S.O., I.M.S., son of Mr. T. Kelsall, of Clifton Drive, Fairhaven, Lytham, to Margaret Florence, third daughter of the late W. A. Elderton and Mrs. Elderton, 24, Mount Ephraim Road, Streatham.

DEATHS.

ANDERSON.—On December 21st, 1918, at 178, Oakwood Court, Kensington, Izett William Anderson, M.D., son of the late William Wemyss Anderson, formerly of Kingston, Jamaica, aged 81.

CUNNINGHAM.—Suddenly, at Bellview, Campbelltown, on December 22nd, 1918, John Cunningham, M.B., C.M., D.P.H., aged 74 years.

JOHNS.—On December 16th, 1918, at 4, Leeds Road, Harrogate, in his 46th year, Dr. Frederick Arthur Johns, M.B.Lond. Internist at Horlow Cemetery on Thursday, the 19th.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Section of Neurology: Thursday, 8.30 p.m., Captain T. A. Ross: Peace and War Neuroses; Lieut.-Colonel A. F. Hurst and Major Symms: Hysterical Element in Organic Nervous Injuries and Diseases (Cinematographic Demonstration). Section of Epidemiology and State Medicine: Friday, 5.30 p.m., Lieut.-Colonel Martin Flack, R.A.F.: Some Simple Tests for Physical Efficiency. Those members of the Section who desire to dine after the meeting are requested to send in their names to Captain Greenwood, 7, Northumberland Street, W.C.2, not later than January 8th.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
JANUARY.	
4 Sat.	Scottish Committee, North British Station Hotel, Edinburgh, 10.45 a.m.
7 Tues.	London: Medico-Political Committee, 2 p.m.
8 Wed.	London: Journal Committee, 2.30 p.m.
14 Tues.	London: Public Health Committee, 2.30 p.m.
15 Wed.	London: Finance Committee, 2.30 p.m.
22 Wed.	London: Council Meeting.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 11TH, 1919.

MEDICAL DEMOBILIZATION.

SCHEME OF THE CENTRAL MEDICAL WAR COMMITTEE FOR PRIORITY OF RELEASE.

In the JOURNAL of December 14th, 1918, p. 661, an outline was given of the scheme for priority of release drawn up by the Central Medical War Committee. The scheme is intended to apply to the demobilization on personal and professional grounds of all medical officers serving temporarily with the forces. It has received the approval of the Ministry of National Service; but as it has not yet been adopted by the Scottish Medical Service Emergency Committee, it applies at present to practitioners from England and Wales only. The following notes will indicate the principles upon which the scheme is based:

The main object has been to devise a plan which is at once simple, capable of amendment at any time, and easily explained to those concerned. As soon as provision is made for areas in which the medical service has been dangerously depleted it is proposed that the demobilization of medical officers shall proceed along lines which take into account (a) length of service; (b) age; (c) special personal hardships in connexion with their practices; and (d) family responsibilities. For this purpose the names of those over the age of 30 on November 11th, 1918, will be classified in the following groups: (1) Those who were mobilized at the outbreak of war; (2) those who have served over three years; (3) those who have served between two and three years; (4) those who have served between one and two years; (5) those who have served less than one year. Each group will be divided into four subgroups arranged according to age.

The data for this primary grouping are readily obtainable, definite in character, and easily tabulated; but other factors, less easily tabulated, affecting some officers must also be taken into account. Information which will be at the disposal of the Central Medical War Committee will enable it to take these special factors into consideration, and then, if necessary, to shift the position of an officer into a different group from that in which the primary classification has placed him. In this process the following points will be taken into account: (1) Whether he is married or single; and the size of his family, if any; (2) if all the members of a partnership are away; or if the practice is single-handed; (3) his paid appointments (panel or otherwise), if any; whether the appointments are whole-time, and whether they have been kept open for him.

Special claims on financial or other grounds, which are not taken into account in the above method of classification, may be submitted to the Central Medical War Committee for special assessment.

The scheme is as follows:

Scheme of Priority of Demobilization of Medical Officers on Personal Grounds.

PART I.

Part I applies to men over 30 years of age at date of armistice—namely, men born on or before November 11th, 1888. The following points will be awarded on the grounds of length of service and age:

Men mobilized at the outbreak of war (for example, reserve surgeons R.N., R.N.V.R., R.A.M.C.(T.F.), and R.A.M.C.(S.R.) officers—

Over 45	...	...	...	...	30 points
40-45	...	...	...	...	29 ..
35-40	...	...	...	...	28 ..
30-35	...	...	...	...	27 ..

Men with over 3 years' service—

Over 45	...	...	...	...	26 points
40-45	...	...	...	...	25 ..
35-40	...	...	...	...	24 ..
30-35	...	...	...	...	23 ..

Men with over 2 years' service—

Over 45	...	...	...	...	22 points
40-45	...	...	...	...	21 ..
35-40	...	...	...	...	20 ..
30-35	...	...	...	...	19 ..

Men with 1 year's service—

Over 45	...	...	...	...	18 points
40-45	...	...	...	...	17 ..
35-40	...	...	...	...	16 ..
30-35	...	...	...	...	15 ..

Men with less than 1 year's service—

Over 45	...	...	...	...	14 points
40-45	...	...	...	...	13 ..
35-40	...	...	...	...	12 ..
30-35	...	...	...	...	11 ..

The following points will be added or subtracted in respect of the following modifying conditions:

1. If in whole-time salaried post, subtract ... 6 points
2. If with no paid appointment or National Health Insurance work ... add 3 ..
3. If in single-handed practice ... add 3 ..
4. If all members of partnership are on service, and no member of the partnership is otherwise entitled to more than 30 points, add in case of one partner ... 4 ..
5. If married ... add 4 ..
6. If with children or other dependants add 1 point for each dependant (excluding wife) up to a maximum of ... 4 ..

Additional points may be awarded in respect of financial or other circumstances of an exceptional character which justify a claim to a higher order of priority than that determined by the foregoing provisions. The award of any such additional points would be the subject of special assessment by the Committee; and any man who deems that he has suffered special hardship on such grounds should apply to the Committee for a special consideration of his case on the facts.

The order of priority of men of 30 and over shall be according to the net number of points accruing to each man under this part of the scheme, men with a greater number of points ranking before men with a less number of points.

PART II.

The order of priority determined under Part II, for men under 30 years of age at date of armistice—namely, men born after November 11th, 1888—shall be in continuation of the order of priority determined under Part I.

The order of priority of men under 30 years at the date of the armistice shall be according to their age—the older before the younger—no priority being, however, accorded as between men born in any one calendar year:

Provided that, in the event of the Central Medical War Committee deciding upon a special application, that financial or other circumstances exist of an exceptional character which justify a claim by the applicant to a higher order of priority than that accorded under the foregoing provisions, the Committee may award that the applicant should be classed either on a level of priority under Part II with men born in a specified earlier calendar year, or on a level of priority with men entitled to a specified number of points under Part I.

NOTIFICATION BY THE MINISTRY OF NATIONAL SERVICE.

To avoid any confusion which might otherwise arise between the special arrangements applicable to the demobilization of medical officers serving with the armed forces and the general demobilization arrangements (which, it should be noted, do not apply to medical practitioners), the Ministry of National Service, which has been charged by the Government with the duty of determining the order of priority of demobilization of medical officers, is adopting, subject to naval and military exigencies, the following procedure in making the necessary selection.

1. The order of priority will be determined on public or private grounds, namely, either a public need for the return of a particular medical officer to civil work in any given area or the personal interests of the individual medical officer himself.
2. As regards the selection of medical officers for demobilization on grounds of public need, applications from any local authority or local bodies, statutory or otherwise, should be made to the appropriate central authority concerned in each case (for example, municipal authorities should apply to the Local Government Board; Local Insurance or Panel Committees to the National Health Insurance Commission; Local Medical War

Committees to the Central Medical War Committee). The central authorities will then advise the Ministry in regard to the urgency of the cases thus submitted to them.

In the case of Scotland all applications on public grounds should be sent to the Scottish Medical Service Emergency Committee, Royal College of Physicians, Edinburgh.

Any other applications based on public grounds may be made direct to the Ministry of National Service, Westminster, S.W. 1.

3. As regards the selection on private grounds, a form (M.N.S.(M) 16) is being issued to every medical officer concerned, asking for particulars to enable his place in the order of priority to be decided on considerations of age, length of service, domestic circumstances, circumstances connected with his practice, etc. The form, when completed by the medical officer, should be posted direct to the Ministry of National Service, Westminster, S.W. 1. It will then be examined by the Ministry in conjunction with the appropriate Central Professional Committee. Complete and accurate replies are essential to the determination of priority.

4. Where an officer desires to put forward a claim for demobilization on any grounds other than those disclosed in the form referred to, he should state them in a separate and special application to the Ministry of National Service, which should be forwarded to the Ministry with the completed form (M.N.S.(M) 16). His case will then be specially considered by the appropriate Central Professional Committee, and his place in the order of priority modified if necessary in accordance with the Committee's recommendation.

5. The above procedure applies to all duly qualified medical practitioners serving as medical officers in the Royal Naval Medical Service (Temporary Commissions and R.N.V.R.), Royal Army Medical Corps (Territorial Force, Temporary Commissions and Special Reserve), Royal Air Force Medical Service (Temporary Commissions).

Form for Claim to Priority of Demobilization.

The following is the form M.N.S.(M) 16 referred to above now being issued by the Ministry of National Service to medical officers:

MINISTRY OF NATIONAL SERVICE.

Form to be completed by Medical Officers (being duly qualified medical practitioners) holding Commissions in Medical Service of H.M. Armed Forces, viz., Royal Naval Medical Service, Royal Army Medical Corps, and Royal Air Force Medical Service, in connexion with claims to Priority of Demobilization by such officers.

1. Name
- in full, surname (in capitals) first.
2. Permanent home address
3. Do you desire early demobilization?
4. State periods of service in the present war, specifying in what Service (whether R.N.M.S., R.N.V.R., R.A.M.C., R.A.F.M.S., Red Cross, etc.) and specifying the theatre of war in which each period of service was spent:—

THEATRE OF WAR.	PERIOD SERVED.		SERVICE (whether R.N.M.S., R.N.V.R., R.A.M.C., R.A.F.M.S., etc.).
	From (date).	To (date).	

5. Date of birth
6. State whether single, married, or widower
7. Rank and (in case of R.A.M.C.) Class, of Commission (whether T.F., S.R., or Temporary Commission)
8. No. and ages of children
9. No. of dependants other than wife or children (stating grounds for their dependency)
10. Have you a medical practice or medical post in civil life to return to?
11. If so, state whether practice is:
 - (a) Wholly or mainly Consultant or Specialist (state kind and locality of practice)
 - (b) Whole-time appointment (state nature of appointment and locality in which duties are performed)
 - (c) General Practice. If General, state—
 - (i) Locality of practice
 - (ii) Is your practice single-handed?
 - (iii) If in partnership, state names and addresses of partners, specifying which, if any, of them are on Service
 - (iv) Are you an assistant? If so, to whom?
 - (v) Are you under contract with an Insurance Committee for the treatment of insured persons?
 - (vi) Have you any part-time paid appointment to return to? If so, give particulars in space provided (below, 12).

Signature

Date

Present Address

12. (c)(vi) continued.—Enter here particulars of any part-time paid appointments to which you would return

Notes.

1. If you desire priority in demobilization on the ground of any of the circumstances which you are invited to state overleaf, you need take no further action beyond filling up this form. The order of priority of release of medical officers on these grounds will be considered, and any claim you may have on these grounds will be dealt with without any special application from you. You should not include in your replies to the questions overleaf any particulars beyond what are asked for.

2. If, however, you desire priority in demobilization on grounds not disclosed, or not fully disclosed, in your replies to the questions overleaf, you should, in addition to completing this form, make a separate application in writing to the Secretary (M. 4), Ministry of National Service, Windsor Hotel, Westminster, London, S.W. 1, setting out all the special particulars on which you rely in support of your claim. Where the claim is based directly or indirectly upon your financial position, full particulars of your financial position should be given in the application. Any such particulars will be regarded as confidential.

3. In a certain limited number of cases special priority in demobilization will be accorded to officers who may be willing to serve for a limited period as locum tenens or assistant in civil practice, in areas depleted of medical practitioners, and who may be selected for this purpose. If you wish to be considered in this connexion you should sign in the space provided below.

4. This form, when completed, should be posted forthwith to the Secretary (M. 4), Ministry of National Service, Windsor Hotel, Westminster, London, S.W. 1.

TO THE MINISTRY OF NATIONAL SERVICE.

I desire to receive further particulars of the arrangements indicated in paragraph 3 above.

Signature

Address

Demobilization of Dental Surgeons.

The Ministry of National Service, acting in accordance with an arrangement made with the Ministry of Labour, the Admiralty, War Office, and Air Ministry, has undertaken to determine the order of priority in demobilization of registered dental surgeons serving with the armed forces either as dental officers or as combatants. A form of questions (M.N.S.(M) 18) is being issued to every registered dental surgeon serving with the forces.

BIRTHS, MARRIAGES, AND DEATHS.

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MARRIAGE.

DODD—BUTLER.—On December 31st, 1918, at Eccleston Church, Chester, by the Rev. Clement E. M. Wilson, Captain Herbert Grantham Dodd, R.A.M.C.(T.F.), elder son of Dr. and Mrs. Arthur H. Dodd of Hove, to Emma Ethel, youngest daughter of the late Mr. and Mrs. James Butler of Bedford.

DEATHS.

BURKE.—At Baghdad, Mesopotamia, of typhus, December 21st, 1918, John Burke, M.R.C.S., L.R.C.P., Captain R.A.M.C. formerly of London Hospital, son of the late Edward Burke, of Earle Street, Crewe.

DAVIDSON.—On January 1st, at a nursing home, Clifton, Bristol, James Davidson M.B., C.M. Edin., of 57, Soundwell Road, Kingswood, Bristol, aged 47 years. No flowers, by request.

GLAISTER.—On Tuesday, December 31st, 1918, at Weir Cottage, Chertsey, Irene, wife of Captain J. Norman Glaister, R.A.M.C., and only daughter of Mr. and Mrs. J. Bryant Sowerby.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—General Meeting of Fellows, Tuesday, 5 p.m., Discussion on Conditions of Admission of Pensioners to and Treatment in Civil Hospitals, to be opened by Mr. H. J. Waring. Section of Psychiatry: Tuesday, 3.30 p.m., Clinical meeting at the Ewell Military Hospital. Section of History of Medicine: Wednesday, 5 p.m., Papers: Sir William Osler. Dr. Clouston: Surgical Treatment of Aneurysm. Section of Dermatology: Thursday, 4.30 p.m., Cases. Section of Otolaryngology: 5 p.m., Mr. Hugh E. Jones: Deafness Associated with Stigmata of Degeneration. Section of Electro-Therapeutics: Friday, 8.30 p.m., Adjourned discussion on series of papers on Diathermy read on December 20th. Papers on Diathermy (1) In Disease of the Eye, (2) Abdomen. Dr. S. Gilbert Scott will show lantern slides of interesting cases.

FRIDAY.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 5.30 p.m.—Lieut. Colonel S. P. James, I.M.S. (ret.): Malaria in England.

DIARY OF THE ASSOCIATION.

Date

Meetings to be Held.

JANUARY.

- 14 Tues. London: Public Health Committee, 2.30 p.m.
- 15 Wed. London: Finance Committee, 2.30 p.m.
- 22 Wed. London: Council Meeting.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 18TH, 1919.

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British Medical Association.

CURRENT NOTES.

Gratuities of Territorial Medical Officers.

IN the SUPPLEMENT of January 4th last an account was given of the present position with regard to acting rank and temporary rank in the R.A.M.C. Territorial Force and the effect of these upon the gratuity payable to Territorial medical officers on discharge or demobilization.

The circumstances may be put briefly thus: Under Army Council Instruction No. 818 of July 21st, 1918,¹ which abolished temporary rank in the R.A.M.C.(T.F.), a considerable number of Territorial medical officers were gazetted out of the higher temporary rank which they had long held in virtue of their appointments, and were re-gazetted with the equivalent higher acting rank. So far as the Army Medical Department was concerned there was no intention to affect adversely the gratuity to which these officers were entitled; but on November 29th, 1918, a special Army Order (No. 365) was issued, announcing that "when a gratuity which is issuable to an officer is dependent upon rank it shall be assessed on the rate of pay of the last temporary or substantive rank held by the officer and not on that of any acting rank held by him." (An exception was made in favour of officers becoming non-effective through disability caused or aggravated by military service while holding higher acting rank.) The effect of A.C.I. 818 and Army Order 365 taken together is that Territorial medical officers with long service in a higher rank will not on demobilization receive the gratuity based on that rank, but only the gratuity of their lower permanent rank.

Since we last wrote, a further Army Order, dated January 7th, 1919, has been issued with regard to gratuities for officers, but we regret to find that it leaves this monstrous injustice unremedied. The new Army Order states that "it has been decided that gratuities for officers assessable under Article 497, Pay Warrant, shall be assessed on the pay of the appointment or, when dependent upon rank, on the pay of the temporary or substantive rank held on November 11th, 1918, when such is more advantageous than assessment on the appointment or rank held on the date of actual demobilization." But—the conditions as regards acting rank laid down in Army Order 365 of November 29th, 1918, will still apply. The new Army Order governs all cases of relinquishment or demobilization after November 11th, 1918.

It does not need what Sam Weller called "a pair of patent double million magnifyin' gas microscopes of hextra power" to see where the responsibility rests for making a rule with regard to rank and gratuity, which may be all very well for the rest of the army, but inflicts a cruel hardship on many Territorial medical officers. The Army Orders of November 29th, 1918, and January 7th, 1919, clearly emanated from the finance department of the War Office. If they were issued in ignorance of their effect upon A.C.I. 818 of July 21st, 1918, this is an instance of what may happen under a system of watertight compart-

ments within a Government Department. If, on the other hand, the finance department of the War Office realized the effect the two Army Orders would have upon the gratuity earned by Territorial medical officers, we have no words to express our contempt for such paltry saving of public money at the expense of officers who, in many instances, have held higher rank for years, and are therefore entitled to the gratuity attached to such rank.

Medical Resettlement.

Among the ways in which a medical man released from military service may gather up the threads of his private practice, it has been suggested that an intimation of his return might be sent to his former patients. The General Purposes Committee of the Central Medical War Committee considers that it would be quite legitimate in such cases for the medical man to send a formal circular to all patients whose names were on his books before and during his absence, informing them that he has returned to practice. This would be in line with the procedure approved by the Central Ethical Committee with regard to the transference of practices from one medical man to another.

Medical Examination of Ex-Service School Teachers.

The attention of the British Medical Association has been drawn to a circular issued by the Board of Education in September last to local education authorities, in which the suggestion is made that these authorities should lend to the Board the services of their school medical officers for the purpose of examining discharged soldiers who wish to be trained as elementary school teachers, such examinations to be conducted free of charge to the candidates. A letter has accordingly been sent to the Board of Education pointing out the injustice of requiring medical men who are appointed as the officers of local education authorities under definite conditions, to render, without payment, services not strictly pertaining to the functions of these authorities and not contemplated when the appointments were made. The letter urges the Board to withdraw its previous suggestion that these examinations should be made free of charge, and expresses the view that they ought to be carried out by the medical referees appointed by the Ministry of Pensions for the examination of applicants for pensions.

IRISH MEDICAL COMMITTEE.

A MEETING of the Irish Medical Committee was held in the Royal College of Surgeons, Dublin, on January 2nd. The following members were present: Mr. R. J. Johnstone (in the chair), Drs. W. W. Murphy, D. Gray, H. T. Warnock, R. Henry, J. Armstrong, J. S. Darling, E. C. Thompson, S. Gawn, J. M. Day, J. J. Clarke, D. Walshe, Thomas McGrath, J. V. Ryan, J. Ginsani, G. Hickey, R. J. Rowlette, T. B. Costelloe, P. Kinsella, and T. Hennessy (Medical Secretary). Mr. R. J. Johnstone was unanimously re-elected chairman, and Dr. Joseph Power vice-chairman. The usual subcommittees were reappointed.

A letter was read from the Irish National Insurance Commission with regard to recommendations and demands

¹ BRITISH MEDICAL JOURNAL, August 10th, 1918, D. 147.

put forward by the delegates attending the meeting of the Irish medical profession in May, 1918. The replies were as follows:

1. *Transfer of Insured Persons changing Residence.*—The Commission expressed its regret that the proposal that insured persons who changed their residence from one dispensary district to another should thereupon be transferred to the pool of their new dispensary district, seemed quite impracticable. Even if it could be carried out with any degree of accuracy, the cost involved would be prohibitive. The Committee directed that a reply should be sent to the Commission to the effect that a periodical transfer should take place.

2. *Investigation by Medical Committees.*—With regard to investigations conducted by the Irish Medical Committee, or a Local Medical Committee, in connexion with complaints concerning the insufficiency or inequality of the distribution of the remuneration for certification, the Commission stated that it was quite ready, if a copy of the particular complaint were forwarded to them, to place at the disposal of the investigating committee all the information bearing on the point at issue. This, if necessary, would include such particular blocks or other official documents as they considered might help in the elucidation of the complaint.

3. *Medical Referees.*—The Commission replied that, under existing financial arrangements approved by the Treasury, approved societies were empowered within certain financial limits to appoint medical referees or obtain second medical opinions, and the Commissioners had no authority to interfere. The Irish Medical Committee directed that a reply be sent to the Commission that it considered the communication relative to the present system of medical referees most unsatisfactory, and to recall the undertaking given by the Irish Insurance Commission, with the approval of the Treasury, that none of the certification grant set aside for the payment of medical referees, who were to be appointed by the Commission, was to be used to defray the expenses of these medical referees in the employment of, or appointed by, the approved societies.

4. *Inadequacy of Remuneration for Certification.*—The Commission stated that it was making a special investigation of the results as shown by experience of the working of the present system in the areas where the capitation rates of 1s. 3d. and 2s. were in force, and when this investigation had been completed a further communication would be made to the Irish Medical Committee.

5. *Extension of Medical Benefit to Ireland.*—The Commission acknowledged the receipt of the resolutions passed at the delegates' meeting with regard to the extension of medical benefit to Ireland and the unsatisfactory position of the treatment of tuberculosis.

Medical Certifiers as Members of Committees of Management of Approved Societies.

A letter was also read from the Commission stating that an approved society had asked whether it is legal for a medical certifier to be appointed a member of the committee of management of an approved society some of the members of which are patients of the certifier and therefore possible applicants to him for certification in connexion with sickness benefit. The Commission was not aware of anything that would render such an appointment illegal, but was satisfied that it was very undesirable, inasmuch as a medical practitioner so appointed could not act with the strict impartiality expected from a certifier. The Commission considered the point important, and desired to know the views of the Irish Medical Committee. After some discussion, the following resolution was unanimously passed:

The Irish Medical Committee is in agreement with the view of the Irish National Insurance Commission as regards the undesirability in general of a medical certifier being a member of the committee of management of an approved society, or in any way interested in the society. The Irish Medical Committee is, moreover, of opinion that the practice of medical referees being appointed by, and holding their office at the pleasure of, approved societies is even more objectionable in itself, and the abuse created by this practice is much more widespread than that of which the Commission complain.

Salaries of Poor Law Medical Officers.

A resolution, passed by the co. Antrim Poor Law medical officers, was considered, and arising out of it and other Poor Law medical questions the Irish Medical Committee appointed a deputation to wait on the Local Government Board with regard (1) to the fixation by that Board of salaries for Poor Law medical officers in those unions in which adequate scales of salaries have not been already adopted; (2) compulsory superannuation and increased pensions for superannuated officers; (3) alterations in the present system of sworn inquiries, and in the rules for the presentation of tickets for Poor Law medical relief. The following are the members of the deputation: Drs. Rowlette, Day, Darling, Hennessy, Hickey, Johnstone, Warnock, and Wulsho.

Ministry of Health.

The Committee considered a recommendation, passed by the Irish Medical Poor Law Committee, that a watching committee should be appointed to make arrangements for a meeting of delegates of the Irish medical profession in the event of any bill being introduced to Parliament affecting Irish medical questions. The Committee approved the recommendation and appointed a committee as follows: Mr. R. J. Johnstone, Drs. Darling, Rowlette, Day, Hickey, Hennessy, Murphy, and Gray, with instructions to obtain information and to lay the same before a meeting of either the Irish Medical Committee, or in the case of urgency, to make arrangements for a delegates' meeting.

Association Notices.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, January 22nd, in the Council Room, 429, Strand, London, W.C. 2, at 11 a.m.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

January 2nd, 1919.

THE FUTURE OF THE MEDICAL PROFESSION.

A STATE MEDICAL SERVICE ON THE PRINCIPLE OF PAYMENT FOR WORK DONE.

By P. R. COOPER, M.D., B.Sc.LOND., F.R.C.S.ENG.

THE omens at present point to the early establishment of some kind of State medical service in this country. The schemes now being discussed may be divided into the two classes: (a) whole-time salaried services, and (b) contract services on the lines of the present Insurance Act. I have seen, however, no reference to a service based on the principle of payment for work done, which to my mind—and I feel sure to the minds of most medical men, and I believe also to the great majority of our patients—is the preferable as it is the only equitable plan. I need not enter into all the arguments in favour of this plan, but will mention its two leading advantages.

1. It is the only method of remuneration which in practice secures that "freedom of choice" of doctor by patient, and vice versa, for which we fought so hard a few years ago, and maintains intact the intimate personal relation between doctor and patient so essential to the best working of medical practice.

2. It is the only just plan of remunerating medical men for their work—contract payment means in reality payment in inverse ratio to work done; a salaried service, with choice of doctor, means that the popular man will have to work much harder for his salary (which might actually be lower) than the unpopular man.

The experience of the working of the insurance panels, especially in the hard times through which we have recently passed, must have convinced most people that contract practice is good neither for patient nor doctor, and the experience of the working of a whole-time salaried service in the army and navy does not seem to have enamoured many of the patients or doctors who have tried it to continue them indefinitely. I would be the last to depreciate the magnificent services of our army and navy doctors during the war, but I would respectfully point out that what may be best for war conditions is not necessarily the best for other conditions.

Many who agree that payment for work done is the "ideal" method say that it is not practicable. To this I would reply that those who declare it to be impracticable are evidently not aware that it has actually been practised with success by the National Deposit Friendly Society and others for years. Moreover, payment according to work done, or "by piece work" as it is termed, is becoming the recognized method of payment in nearly all vocations, and is found most satisfactory both to employers and employed.

My object, however, is not to rake up all the arguments in favour of payment for work done, but to place before the profession and the powers that be a simple scheme of payment of medical men for services actually rendered.

My scheme is essentially a "coupon scheme," which would be run on exactly the same lines as the present

food coupons. Just as we have books of "meat coupons," "butter coupons," etc., so we should have books of "medical coupons." There would be coupons for "ordinary visits," "special visits," "night visits," "operations," "anaesthetics," "consultations," "special services," etc. When the doctor sees his patient, instead of receiving his fee he would receive the corresponding coupon, and weekly, monthly, or quarterly he would hand in his coupons to the payment bureau, and receive payment according to the agreed scale of charges for the individual items of service. The only book-keeping to be done by the doctor would be to keep his visiting list or day book carefully written up with all the items of attendance, and to check these each day with the number of coupons received. Nothing could be much simpler, and the saving to the profession in time, pocket, and worry would be enormous.

The points first to be settled would be (1) to fix the price for each of the medical services rendered on a tariff agreed between the profession and the paying body or bodies; there would have to be grades of services, for naturally all medical men cannot be all equally skilled in all departments of medicine, surgery, and midwifery.

(2) Payment raises the great question of providing a full and adequate medical service for the whole nation. If the State intends to undertake the whole cost, it will certainly be heavy. From the point of view of demand for medical services the nation can be divided into three classes:

A. Those who cannot pay anything for medical services; they must be paid for wholly by the State.

B. Those who can pay something, but certainly not the full cost of complete medical services required, will need to be helped by the State, and probably the best way of helping is by means of State-aided insurance, in which the State, the employer (in the case of employees) and the individual insured each make their contribution to the common insurance fund, which must be sufficient to cover all the risks and all the costs of a most complete medical service; there should be "bonuses" for those who during the year have not required the doctor—in other words, an encouragement to keep well.

C. Those who can pay the whole of the cost of medical services required need not be paid for by the State at all, but should be permitted, and even encouraged, to insure against all forms of sickness and injury to cover the full cost of any and every medical service required, the insurance risks being, of course, borne by the insurance funds, and the premiums arranged accordingly.

For Classes B and C there should be no taint of charity, and all hospital services, pathological investigations, operations, specialist treatments, etc., would be paid for fully out of the insurance funds. Parliament would annually have to vote the money for "paying up" the "insurance debt" as it pays up its other debts for national services.

The only valid objection to this proposal is that it might be abused by some medical men making unnecessary visits. Most people when they are seriously ill are only too glad to be visited frequently by their doctors, and in some cases there is need for the doctor to be practically in constant attendance, but in lesser illnesses the judgement of the man in attendance should not be too heavily hampered, and if the patient is given some interest in the matter, by being made to pay something, say, for his coupon book, he will probably not part with his coupons too readily. There are many other checks which can be suggested to overcome this abuse if necessary, but in my opinion it has been greatly exaggerated, and the profession generally has shown that it is to be trusted in this as it is in other and far more vitally important matters affecting the welfare of the individual and the nation.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—
Surgeon Commanders W. H. Dew to the *Donegal*, P. F. Alderson to the *Blake*, A. R. H. Sker to H.M. Dockyard Portsmouth, H. W. B. Shewell to the *President*, additional for Cambridge University as medical officer to Naval School. Surgeon Lieut. Commander E. C. Holton to the *Bristol*. Surgeon Lieutenant A. S. Paterson to the *Thetis*. Surgeon Lieutenants (temporary): W. E. Fox to the *Resolution*, A. L. Sutcliffe to the *Ganges* for Shotley Sick Quarters, W. A. W. Parkes to the *Lion*, J. T. Johnston and H. L. Fridman to the *Moorhen*, J. H. Sheldon to the *Grenville*, D. L. Lees to the *H.S. China*, R. Lyon and J. Sharpe to the *Caspar*, A. W. McKelvie to the *Caradoc*, N. A. Spotts to R.M. Infirmary, Deal, F. W. Nunneley and K. E. Attenborough to the *Beatrix*, J. R. L. Willis to the *Victory* for R.N. Barracks, L. S. Gale to the R.M. Division, Chatham, J. Nicol to Chatham Hospital, G. D. Muir to the *Dido*, A. M. McGillicuddy to the *Iron Duke*, R. D. Lockhart to the *Europa*, W. P. Efford and W. E. Heath to Plymouth Hospital, H. B. Lawrie to R.N. Barracks, Devonport, H. L. Douglas to the *Empress*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Temporary Colonels relinquish their temporary commissions on reposting: R. E. Kelly (Capt in R.A.M.C.T.F.), H. A. Ballance (Major, temporary Lieut.-Colonel R.A.M.C.T.F.).

Lieut.-Colonel F. S. Le Queuse, V.C., is placed on retired pay.

Lieut.-Colonel J. E. Brogden is placed temporarily on the half-pay list.

To be acting Colonels whilst employed as Assistant Directors of Medical Services: Lieut.-Colonels A. E. Hamerton, C.M.G., D.S.O., H. C. R. Hime, D.S.O. (Brevet Colonel) G. J. A. Ormsby, D.S.O., Major (acting Lieut.-Colonel) H. A. Davidson.

To be acting Colonel whilst specially employed: Major (acting Lieut.-Colonel) H. F. Shea, D.S.O.

The following relinquish the acting rank of Lieut.-Colonel on reposting: Majors W. J. Weston, D.S.O., C. W. O'Brien, Captain W. Tyrrell, D.S.O., M.C.

To be acting Lieut.-Colonels:—Whilst in command of a medical unit: Major W. E. O. Lunn, M.C., Captains (acting Majors) M. White, M. J. Williamson, M.C., J. B. A. Wignmore, G. D.R. Carr, M.C., Captains (G. F. Rudkin, D.S.O., H. H. Leeson, M.C. Whilst specially employed: Temporary Major H. G. Ramsbottom, Captain (acting Major) J. W. Bennett.

To be acting Majors: Captains B. Varvill, M.C., K. P. Mackenzie, W. E. Tyndall, M.C., R. A. Austin, M.C., D. W. Beamish, M.C., C. McQueen, M.C., Temporary Captains A. W. P. Todd, M.C., W. K. A. Richards, M.C., D. J. Stokes, M.C., J. H. Hood, J. Rodger, M.C., D. S. Graham, D. R. Williams, M.C., G. N. Hood, M.C., A. L. Saunders, R. Felton, M.C., G. S. Brown, D. M. Ross, W. H. Stolt (whilst commanding troops on a hospital ship) S. E. Martin, J. C. Muir, and F. R. Barwell whilst specially employed, K. Bruce-Low, A. S. Waleley, A. G. M. Middleton, M.C., O. R. L. Wilson, J. R. Anderson, J. G. Moseley, H. J. de Broux, M.C., T. E. Amyot, J. McDonnell, M.C., A. E. Esler, W. L. Cassells. Temporary honorary Captain O. H. Stansfield (while specially employed).

Major C. P. Thomson, D.S.O., is placed on the half-pay list under the provisions of Article 307, para. 7. Royal Warrant for Pay and Promotion.

Temporary Captain (acting Major) W. Kennedy-Taylor to be acting Lieut.-Colonel whilst in command of the Guildford War Hospital.

Temporary Captain K. Wilson relinquishes the temporary rank of Major on reposting.

The undermentioned relinquish their commissions on transfer to R.A.F.: Temporary Major (acting Lieut.-Colonel) J. L. Birley. Temporary Captain (acting Major) J. H. Porter, M.C. Temporary Captains: J. H. Cooke, P. H. Young, W. S. T. Connell, L. W. Shelley, W. J. McKeand, C. W. W. James, A. G. H. Moore, F. A. Hampton, M.C., C. H. Thompson, C. K. Atlee, C. F. Graves, J. Chambre, W. Waugh, T. N. Wilthew, W. B. Dove, A. G. H. Stuart, N. C. Graham, M.C., E. W. Craig, M.C., D. H. Fraser, G. Cranston, J. Freeman, W. H. Cam. Temporary Lieutenant G. D. M. Beaton.

J. E. Briscoe to be temporary Captain.

Temporary Lieutenants to be temporary Captains: F. W. Daniels, S. B. Turner, Douglas Holroyde, T. A. Matthews, N. J. Newbould.

Temporary honorary Lieutenants to be temporary honorary Captains: A. C. Delacroix, H. A. Haskel.

Temporary Captains relinquish the acting rank of Major on reposting: R. V. Dolbey, W. D. Cruickshank, W. G. Johnston, M.C., W. K. A. Richards, M.C., L. F. Henmaus, J. H. Hood, A. M. Crawford, J. Greene, M.C., A. Mannel, W. H. D. Smith, R. C. Alexander, J. Anderson, D.S.O., F. G. Bell, M.C.

Officers relinquish their commissions: Temporary honorary Lieut.-Colonels H. A. Powell (on ceasing to be employed at the Guildford War Hospital), G. Dreyer. Temporary Majors J. B. Howell, A. E. Bindloss, A. J. Cleveland (on ceasing to be employed at the Norfolk War Hospital, and retains the rank of Major). Temporary honorary Major W. C. G. Ashdowne. Temporary Captain (acting Major, on account of ill health contracted on active service and retains the rank of Major): W. A. Rogerson. Temporary Captains (acting Majors and retain the rank of Major): W. M. Badenoch, R. S. Renton, J. L. Menzies, M.C., F. B. Young, A. Richmond, H. H. Warren, W. S. Dickie, H. R. Grellet. Temporary Captains (acting Majors): W. Rankin, R. H. Paramore, J. L. Gordon, B. H. Barton, M.C., C. H. S. Webb, E. L. M. Hackett, W. Anderson, R. Warren, R. C. Harkness. Temporary Captains on account of ill health contracted on active service and retain the rank of Captain: G. Graham, J. Clark, F. M. H. Sanderson, T. B. McKendrick, G. H. C. Lumsden, C. Duodec, D. C. Alexander, P. L. Brewer, H. L. Martyn, F. W. Perry, A. H. Murch, W. H. Best, G. R. Phillips, H. R. Ramsbottom, C. A. R. Gately, J. Proctor, A. C. B. Biggs, M.C. Temporary Captains on account of ill health and retain the rank of Captain: (Acting Major) A. Manuel, E. Wight, J. Forrest, J. McCarbrey. Temporary Captains and retain the rank of Captain: E. B. Struthers, A. G. J. Thompson, H. W. B. Ruxton, A. D. Hamilton, H. Smurthwaite, S. H. Ryan, D. C. McArde, A. Dingwall, J. L. Johnston, J. T. Gunn, A. B. Laidlaw, W. W. Wood, J. A. H. White, A. Dixon, J. Ferguson, R. H. S. Torney, D. J. McAfee, M.C., W. F. Watson, M.C., T. A. Matthews, G. E. Oates, J. L. McCann, D. J. Foley, C. Watson, L. J. Weatherbe, W. Warburton, J. H. Morris-Jones, M.C., J. Fletcher, T. E. Plietoff, S. McNair, G. W. Thompson, J. Cameron, H. D. Haworth, W. B. Hendry, E. A. B. Poole, H. F. Warner, T. B. Johnston, K. Fraser, R. Appleton, D. J. McLeish, O. Smith, P. de S. Smith, J. C. Mead, R. O. Smyth, B. J. Hutchence, A. S. Bradley, W. H. Blakemore, J. T. Carson, S. S. Brook, W. P. Lowe, R. B. Johnston, G. H. Davy, W. C. Fowler, T. F. Murphy, H. E. Middlebrooke, J. Holland, M.C., C. Bernard, W. V. Nash, G. Stoddart, I. Bromley, H. Upcott, G. P. Humphry, G. W. Curtis, A. J. Hutton, A. J. McCannell, H. Wildas, A. Mason, E. J. Morton, R. Edridge, H. M. Joseph, F. W. Ritson, A. G. Henderson, D. A. Dowar, R. E. Walker, A. Ferguson, A. Bryans, A. H. Mountcastle, J. H. Trench, R. J. Bonis, D. A. Powell, E. F. R. Alford, M.C., J. V. Cope, M.C., G. C. Cossar, M.C., D. W. Daniels, J. A. V. Matthews, J. Reid, M. Golding, J. C. Woolton, M.C., R. W. Gratorox, A. S. Wilson, F. S. Adams, D. T. H. Croly, F. Barnes, T. Henderson, E. H. Worth, S. C. H. Bent, M. W. Baker, H. Walker, A. H. B. Hartford, T. N. Bride, G. Unsworth, D. Mann, H. P. Wright, R. E. Whitting, J. Morris, G. T. Bogle, A. F. Waterhouse, P. W. L. Camps, J. Steward, G. P. Young, M. S. Esler, J. Lloyd-Evans, A. Simpson, P. R. MacNaught, R. F. Eminson, D.S.O., A. G. Wilson, C. J. Nicholson, H. Tren, E. W. Milne, J. Wright, C. Y. Flewitt. Temporary Captains R. M. Liddell, T. L. Wormald, E. H. Walker, S. Carter, A. J. V. McDonnell, C. R. Willis, A. Gillespie, W. H. Pallett, R. M. Soames, J. O. Skevington, T. S. Sharpley, T. Clapperton, E. A. Miller, R. J. McPeters, C. J. A. N. Mercier, C. M. Young, M. J. Ryan, W. G. B. Gunn, F. J. Child, E. C. Bourdas, A. B. Aiklen, C. E. Lakin, C. S. Kingston, J. A. Gray (Home Hosp. Res.), A. Westernman, A. R. Jordan, A. C. Hallows, J. B. McMorland, J. E. English, A. Currie, W. A. Young, D.S.O., M. J. Homan, E. E. M. Price, W. R. Bayne, H. S. Galt, R. E. Moore, A. F. W. Deanning, H. L. Tidy, J. H. Porter, K. W. D. Meftue, N. Morris, H. S. A. Hogg, N. A. Coward, O. W. Jones, R. D.

Smedley, F. P. Fisher, G. Allison, G. B. Wilkinson, H. Dyer, A. Dinswall, T. E. Ferguson, S. Vosper, W. Rolland, W. W. Linington, J. A. Davidson, H. M. Raven, E. C. Roberts, H. P. Newsholme, A. D. Hunt, G. Hardwicke, F. J. Lidderdale, M.C., J. L. Cochran, M.C., J. R. Tibbles, G. D. E. Tullis, J. B. Ferguson, J. H. Hebb. Temporary Captain J. M. Smith (on account of ill health, and is granted the rank of Lieutenant). Temporary honorary Captain C. E. S. Jackson (on ceasing to be employed with the St. John Ambulance Brigade Hospital, and retains the honorary rank of Captain). Temporary Lieutenants, and retain the rank of Lieutenant: B. Hutchison, W. O. Wood, D. Robertson, J. Craig, R. Price. Temporary Lieutenants: H. Caird, W. J. N. Todd, R. Hamer, A. L. Black, W. L. Hozan, F. W. Hobbs, D. G. Gellatly, F. G. E. Browne, D. Davies, M.C., D. Holroyde, C. J. E. Edmunds, F. P. R. James, A. Linn, G. S. Ward. Temporary honorary Lieutenant J. P. Griffin (on ceasing to serve with the British Red Cross Hospital, Nelly).

The notification in the *London Gazette* of October 14th, 1915, regarding temporary Captain H. V. Leigh is cancelled.

ROYAL AIR FORCE. MEDICAL BRANCH.

Major J. L. Birley to be acting Lieut.-Colonel whilst employed as Lieut.-Colonel.

Granted temporary commissions:—As Lieut.-Colonel: C. E. C. Stanfield (Surgeon Commander, R.N.). As Majors: W. W. Shorten and T. J. Kelly, M.C. (Captains, acting Majors, R.A.M.C.), F. H. Stephens and A. V. J. Richardson (Staff Surgeons, R.N.), H. H. Robinson, M.C. (Captain, acting Major, R.A.M.C.T.F.), C. G. Galpin (late Captain ret. pay). As Captains and to be acting Majors whilst specially employed: M. N. Perrin and J. H. Porter, M.C. (temporary Captains, acting Majors, R.A.M.C.). As Captains: C. F. A. Herford, T. E. Dixon, and D. A. Macpherson (Surgeon Lieutenants, R.N.V.R.), W. A. S. Drick (Surgeon Lieutenant, R.N.), F. B. Gillespie, D. Ross, R. W. Meller, A. L. Dykes, L. S. Goss, H. B. Adams, D. S. Stevenson, J. H. M. Sandison, and E. McLean (temporary Surgeon Lieutenants, R.N.), d'Arcy Power, M.C., and J. H. Owen (Captains, R.A.M.C.S.R.), A. H. Sutcliffe, J. M. Wyatt, G. P. Sells, M.C., J. W. Keay, A. E. Lascelles, J. E. Dunbar, and V. T. Ellwood (Captains, R.A.M.C.T.F.), F. A. Houghton, M.C., N. C. Graham, M.C., A. G. H. Smart, L. W. Shelley, E. W. Craig, M.C., W. J. McKean, A. G. H. Moore, W. S. P. Connell, J. Freeman, C. Cranston, W. Waugh, C. F. Graves, D. H. Fraser, M.C., W. H. Cam, C. H. Thompson, J. H. Cooke, P. H. Young, J. Chambers, T. N. Withew, C. K. Atcock, C. W. W. James, and W. B. Dove (temporary Captains, R.A.M.C.). As Lieutenant: G. D. M. Beaton, (temporary Lieutenant, R.A.M.C.).

Captain G. Fehrsen relinquishes his commission on ceasing to be employed, and retains his rank.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain A. G. Fisher relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

Captain J. G. McCutcheon relinquishes the acting rank of Lieut.-Colonel.

Captain P. Walsh relinquishes the acting rank of Major on reposting. Captains to be acting Majors: F. G. Foster, S. J. V. Furlong, S. K. Young, W. O. Tobias.

Captains A. J. Brown, D.S.O., and W. C. Mackie to be acting Majors whilst specially employed.

Lieutenant J. F. Cunningham relinquishes his commission on account of ill health.

To be Lieutenants: A. B. Grant, from University of London Contingent O.T.C., W. Oats.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Majors (acting Lieut.-Colonels) D. G. Campbell and J. B. Yeoman relinquish their acting rank on ceasing to be specially employed.

Major W. R. E. Williams relinquishes his commission on account of ill health, and retains the rank of Major.

Captain (Brevet Major, acting Lieut.-Colonel) R. C. Dun relinquishes his acting rank on ceasing to be specially employed.

Captain (acting Major) G. S. Williamson relinquishes his acting rank on ceasing to be specially employed.

Captain (acting Major) J. Walker and F. W. C. Brown relinquish their acting rank on ceasing to be specially employed.

Captain J. A. Keay to be Major.

Captains to be acting Majors whilst specially employed: J. W. Thompson, J. W. Craven, M.C., J. C. Newman, R. M. Wilson, R. E. Pize, M.C., J. Wood, W. L. Cockerroft, A. C. Tibbits.

Captain L. E. H. R. Barker relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

Officers transferred from the list of officers supernumerary for service with the Officers' Training Corps, with rank and precedence shown against their names: Major A. M. H. Gray (May 23rd, 1915), Captains A. E. Webb-Johnson (July 27th, 1912), (Brevet Major) W. J. Wilson (November 25th, 1914), G. A. Williamson (October 3rd, 1915), Lieut. (temporary Captain) F. J. Clemison (September 7th, 1914, and retains his temporary rank).

Officers seconded for service with the R.A.F.: Major J. W. Keay, Captains J. E. Dunbar, V. T. Ellwood, A. D. Kennedy, J. E. Lascelles.

1st Eastern General Hospital.—Major (acting Lieut.-Colonel) H. A. Pallance relinquishes his acting rank and is restored to the establishment: Captain (acting Major) K. V. Slattery relinquishes his acting rank on ceasing to be specially employed, and remains seconded.

1st London General Hospital.—Captain P. Hamill is restored to the establishment.

1st London Sanitary Company.—Lieutenants to be Captains: S. W. Wingfield and D. Williams.

2nd North Midland Field Ambulance.—Captain C. M. Cowper relinquishes his commission on account of ill health, March 5th, 1915, and retains the rank of Captain (substituted for notification in the *London Gazette*, March 4th, 1915).

Wessex Casualty Clearing Station.—Major (acting Lieut.-Colonel) R. A. Draper relinquishes his acting rank on ceasing to be specially employed.

1st Northern General Hospital.—Major (acting Lieut.-Colonel) G. Hall, C.M.G., relinquishes his acting rank on ceasing to be specially employed.

3rd Southern General Hospital.—Captain W. B. Secretan is now recommended for duty with the Reading War Hospital.

4th London General Hospital.—Lieut.-Colonel Sir N. I. C. Tizard is retired on attaining the age limit and retains the rank of Lieut.-Colonel. Major (Brevet Lieut.-Colonel) J. Smart, from 1st Scottish General Hospital, to be Lieut.-Colonel on the permanent personnel.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Lieut.-Colonel: Lieut.-Colonel H. W. Thomson, D.S.O., from Lowland Mounted Brigade Field Ambulance. Lieut.-Colonel (Brevet Colonel) J. R. Kaye from the General List. Lieut.-Colonel (acting Colonel) J. Mackinnon, D.S.O., from 3rd West Riding Field Ambulance.

To be Majors: Majors A. A. W. Merrick, from 3rd West Lancashire Field Ambulance, A. C. Turner, D.S.O., G. P. Chappel, H. C. Colman, W. Y. Martin, R. Thornton, J. B. Stevens, from Attached to Units other than Medical Units, J. H. H. Pirie, from 3rd Lowland Field Ambulance, G. A. C. Shipman, from 4th Northern General Hospital, J. B. Yeoman, from Welsh Border Mounted Brigade Field Ambulance, W. A. Burns, from 2nd Lowland Field Ambulance, G. Hall, C.M.G., from 1st Northern General Hospital, P. Howie, from 1st Highland Field Ambulance, (acting Lieut.-Colonel) J. M. Gover, D.S.O., from 1st Northern Field Ambulance.

To be Captains: Captains H. Stonehouse from 2nd Northern Field Ambulance, C. W. Greene from 1st Home Counties Field Ambulance, J. R. Garrod, (acting Major) J. G. Cooke, R. V. Favell, (acting Major) D. S. Finlay, G. B. Pearson, W. Robertson, M.C., R. L. Routledge, E. S. Stork, D.S.O., W. T. Briscoe, M. C. Anderson, W. Smart, from Attached to Units other than Medical Units, (acting Major) H. F. W. Boedicker, from 1st South Midland Field Ambulance, F. H. Lacey, and (acting Major) J. Derham-Reid, M.C., from Welsh Border Mounted Brigade Field Ambulance, and L. A. Mackenzie, from 1st West Riding Field Ambulance, (acting Major) A. M. Johnson, M.C., and A. W. Barry from 3rd East Lancashire Field Ambulance, A. J. Presslie from 4th Highland Casualty Clearing Station, F. C. Pridham and J. Howard from 1st North Midland Field Ambulance, D. Shannon and D. H. MacPhail from 2nd Lowland Field Ambulance, (acting Lieut.-Colonel) W. F. M. Morris, M.C., from 2nd East Lancashire Field Ambulance, (acting Lieut.-Colonel) W. Blackwood, D.S.O., from 2nd Wessex Field Ambulance, (acting Lieut.-Colonel) C. S. Brebner, D.S.O., from 1st London Field Ambulance, F. G. Caley from 2nd London Sanitary Company, (acting Major) J. W. Dale, M.C., from 3rd Welsh Field Ambulance, M. Dixon from North Midland Casualty Clearing Station, J. Howie, D.S.O., and C. H. Baile from Yorkshire Mounted Brigade Field Ambulance, (acting Lieut.-Colonel) J. H. P. Fraser, M.C., from 5th Southern General Hospital, F. R. M. Higgs from Notts and Derby Mounted Brigade Field Ambulance, (acting Lieut.-Colonel) A. C. H. McEwan from 2nd Northumbrian Field Ambulance, B. K. T. Collins from 2nd Welsh Field Ambulance, (acting Major) L. A. Dingley from North Midland Mounted Brigade Field Ambulance, E. W. Holyoak from 5th Northern General Hospital, P. McEwan from West Riding Casualty Clearing Station, (acting Major) J. E. G. Thomson, M.C., from 1st Highland Field Ambulance, P. N. B. Odgers from 1st Eastern General Hospital, A. H. Pinder from 1st West Lancashire Field Ambulance, E. W. Schofield from 1st East Lancashire Field Ambulance.

VOLUNTEER FORCE.

County of London R.A.M.C.(F).—To be temporary Majors: Captain E. G. Annis (T.F.Res.), H. Jackson.

Kent R.A.M.C.(F).—Captain G. L. Bunting, T.F.Res., to be temporary Major.

Merionethshire R.A.M.C.(F).—Temporary Captain C. E. Macnamara resigns his commission.

APPOINTMENTS.

DISTRICT MEDICAL OFFICERS.—N. G. Harry, M.B., B.C. (St. Germans Union). H. Potts, M.R.C.S., L.R.C.P. (East and West Flegg Incorporation). A. G. B. Lory, L.M.S.S.A. (Amesbury Union).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

DEATHS.

BUTCHER.—On January 10th, at Holyrood, Ealing, William Deano Butcher, M.R.C.S., aged 71.

CROCKETT.—Suddenly, at 46, Sinclair Road, West Kensington, on December 2nd, 1915, Edward Crockett, L.R.C.P., L.M., F.R.C.S., Edin., aged 74 years. Late of Hampton Wick, Middlesex.

ROWELL.—At Houghton-le-Spring, on January 2nd, Robert Henry Rowell, M.R.C.S.Eng., L.S.A. (late of Newcastle-on-Tyne). Interred at St. Andrew's Cemetery, Jesmond, on January 4th.

DIARY FOR THE WEEK.

TUESDAY.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester Square, W.C., 4 p.m.—Cases.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.—Monday, Wednesday, and Friday, Professor Arthur Keith, F.R.S.: Phases in the Life and Work of John Hunter.

ROYAL SOCIETY OF MEDICINE.—General Meetings of Fellows, 5 p.m.—Monday: Lecture by Lieut.-Colonel Sir James Barratt, B.A.M.C., on The Management of Venereal Diseases in Egypt during the War (illustrated). Thursday: Discussion on shock, to be opened by Professor Bayliss and Dr. Dale. Section of Surgery: Wednesday 5 p.m., Cases: Major C. J. Waldron, C.A.M.C., and Captain E. F. Risdon, C.A.M.C.: Mandibular Bone Grafts. To be followed by a Discussion on Bone Grafting: Captain W. E. Galbie, C.A.M.C., Major Naughton Dunn, R.A.M.C., Major Alyn Smith, D.S.O., R.A.M.C., and Major Robert Milne, R.A.M.C. Section of Study of Disease in Children: Friday, 5 p.m., Discussion: The Etiology, Prevention, and Non-operative Treatment of Adenoiditis, to be opened by Drs. Harry Campbell and Edmund McCauley, Cases.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
JANUARY.	
22 Wed. London:	Council Meeting, 11 a.m.

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JANUARY 25TH, 1919.

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AN APPRECIATION TO THE MEDICAL PROFESSION ENGAGED IN THE WAR.

On the motion of the Chairman of Council the following appreciation was adopted by the Council of the British Medical Association on January 22nd, 1919, and entered on the minutes:

The Council, joining in the praise given by all the nations of the British Empire to the brave men who, by their courage in battle, constancy in adversity, and endurance of hardship, have, with the aid of our Allies and the friendly American nation, brought us at length by victory to peace, desires in particular, speaking from fullness of knowledge, to place on record its sense of the greatness of the share of the medical profession in the struggle now happily ended.

To every member of the profession, young and old, in the Home Islands, in the Dominions, in the Colonies and in the Dependencies, came the call to service, in various degree. It came first to those who had felt it a patriotic duty in time of peace to fit themselves to serve in war—to the medical officers of the Royal Naval Volunteer Reserve, Territorial Force, and Special Reserve. They were mobilized in the first days of the war, they have served in all climes, not a few have given their lives, many have been invalided in broken health, all have given of their best. The country owes them a very deep debt of gratitude.

At a stage almost as early medical volunteers came forward, and among the medical officers with temporary commissions in the Home and Overseas contingents are indeed many who have served throughout the war.

Honour has been won for their profession by the gallantry of medical officers in tending wounded in the field. The Council is proud to note that the Victoria Cross has been won nine times by medical officers in this war, and that the unprecedented honour of a bar to the Cross has been granted to two medical officers—Lieut.-Colonel Martin-Leake, who won the Cross in South Africa, and Captain N. G. Chavasse, who died of wounds received in doing the noble deeds for which the bar was granted. It is proud also to record that the Military Cross has been won by over nine hundred medical officers and that many bars have been granted; the Council congratulates these gallant officers on this recognition of their courage and devotion to the beneficent work of medicine in the field, and mourns the loss of so many brave men

who died in the execution of a hazardous duty before such recognition could be given to them.

The Council records also the striking success of medicine's peculiar work in war—the prevention of disease. The British armies in Flanders and Northern France have been guarded from those epidemics which often brought disaster in earlier campaigns in these regions. That this has been achieved and that certain new and less recognized diseases of armies have been controlled, has been due to the combination of clinical inquiry with pathological research in mobile and temporary laboratories working in the field or on the lines of communication. In the treatment of wounds also the principle of prevention has been applied with a degree of success never before approached under similar conditions. In the casualty clearing stations surgical skill of the highest order has been brought early to the wounded whereby many lives and limbs have been saved, and prolonged sickness and suffering prevented. In these matters also clinical experience and pathological inquiry have worked together.

The medical services of the Royal Navy have achieved results as admirable. Their work at sea has been of the most arduous nature, and the treatment of the sick and wounded ashore has been organized and carried through with skill and devotion.

Recognition is due also to the staffs of the base hospitals in all the campaigns for their skill in treatment and research, and their untiring exertions, especially during periods when the wounded were being admitted in very large numbers.

Finally, the Council places on record its appreciation also of the manner in which those members of the profession who remained at home responded to the many calls on their energies by their work in the general and auxiliary military hospitals established in all parts of the United Kingdom, and by the manner in which they rendered the requisite medical attention to the civilian population under difficult conditions. Owing to the shortage in personnel, the stress of work has been so great that the Council here also has to express regret that members of the profession have suffered impairment of health, and some of the older men have made the supreme sacrifice in response to the call of duty to their country.

Those who have rendered the services herein set out have deserved well of the country.

THE GOLD MEDAL OF THE ASSOCIATION.

Award to Lieut.-Colonel Arthur Martin-Leake, V.C.

At its quarterly meeting on January 22nd the Council placed on record the following extracts from the *Gazette* referring to Lieut.-Colonel Arthur Martin Leake, V.C., R.A.M.C., to whom the Council awarded the Gold Medal of the Association at its meeting on June 30th, 1915:

Victoria Cross.—For great devotion to duty and self sacrifice at Vialfontein, February 8th, 1902, when he went out into the firing line to dress a wounded man under very heavy fire from about forty Boers only 100 yards off. When he had done all he could for him, he went over to a badly wounded officer, and while trying to place him in a more comfortable position he was shot three times. He only gave up when thoroughly exhausted, and then he refused water until other wounded men had been served. (*London Gazette*, May 13th, 1902.)

Bar to Victoria Cross.—For most conspicuous bravery and devotion to duty throughout the campaign, especially during the period October 29th to November 8th, 1914, near Zonnebeke, in rescuing, whilst exposed to constant fire, a large number of the wounded who were lying close to the enemy's trenches. (*London Gazette*, February, 1915.)

Award to Captain N. G. Chavasse, V.C.

On the motion of the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer, the Council resolved that the Gold Medal of the Association be presented to the nearest relative of the late Captain Noel Godfrey Chavasse, V.C., M.C., R.A.M.C., to whom the Victoria Cross with bar were awarded in the circumstances stated in the following extracts from the *London Gazette*:

Victoria Cross.—For the most conspicuous bravery and devotion to duty. During an attack he tended the wounded in the open all day, under heavy fire, frequently in view of the enemy. During the ensuing night he searched for wounded on the ground in front of the enemy's lines for four hours. Next day he took one stretcher-bearer to the advanced trenches, and, under heavy fire, carried an urgent case for 500 yards into safety, being wounded in the side by a shell splinter during the journey. The same night he took up a party of twenty volunteers, rescued three wounded men from a shell-hole twenty-five yards from the enemy's trench, buried the bodies of two officers, and collected many identity discs, although fired on by bombs and machine guns. Altogether he saved the lives of some twenty badly wounded men, besides the ordinary cases which passed through his hands. His courage and self-sacrifice were beyond praise. (*London Gazette*, October 25th 1916.)

Bar to Victoria Cross.—Though severely wounded early in the action whilst carrying a wounded soldier, Captain Chavasse refused to leave his post, and for two days not only continued to perform his duties, but in addition went out repeatedly under heavy fire to search for and attend to the wounded. During these searches, although practically without food during this period, worn with fatigue, and faint with his wound, he assisted to carry in a number of badly wounded men over heavy and difficult ground. By his extraordinary energy and inspiring example he was instrumental in rescuing many wounded who would otherwise have undoubtedly succumbed. This devoted and gallant officer subsequently died of his wounds. (*London Gazette*, September 14th, 1917.)

British Medical Association.

CURRENT NOTES.

Meeting of the Central Council.

A QUARTERLY meeting of the Central Council of the Association was held on Wednesday, January 22nd, with Dr. J. A. Macdonald, Chairman of Council, in the chair.

Harrison Memorial.

The Council voted a sum of 100 guineas towards the memorial to the late Lieut.-Colonel E. F. Harrison, C.M.G., Controller of the Chemical Warfare Department of the Ministry of Munitions, who for many years acted as analyst to the *BRITISH MEDICAL JOURNAL* and undertook the series of analyses of proprietary articles, afterwards collected and published by the Association in the forms of *Secret Remedies* and *More Secret Remedies*. Mr. Harrison was the principal witness for the Association before the Select Committee of the House of Commons on Patent Medicines, and gave very valuable evidence.

Payment of Medical Men called in by Midwives.

The Medico-Political Committee reported that the scale of fees adopted by the Annual Representative Meeting, 1915, for the payment of medical practitioners called in by midwives had been definitely approved by the Local Government Board and incorporated in a memorandum sent to all local authorities which supervise midwives under the Midwives Act (see *BRITISH MEDICAL JOURNAL*, January 11th, p. 54). This must be regarded as an important point gained by the Association, which has long

insisted that the fees of all doctors called in on the recommendation of midwives should be guaranteed and paid by the local supervising authority and not by boards of guardians. This principle is now incorporated in the Midwives Act, 1918, while the scale recommended by the Association has been adopted without alteration by the Local Government Board.

Superannuation of Medical Officers.

Following the appointment, in October last, of a Departmental Committee on Superannuation of Persons Employed by Local Authorities, a request was made that the British Medical Association might be allowed to give evidence before the Committee as to the need for the superannuation of medical officers in the employ of local authorities. In response, the Association has been invited to lay a memorandum before the Departmental Committee dealing with the points which it wishes to bring to notice. The Public Health Committee reported to the Council on January 22nd that a memorandum is now in course of preparation and will be forwarded to the Departmental Committee without delay.

Medical Demobilization.

In his quarterly report of the Central Medical War Committee, presented to the Council on January 22nd, the Chairman, Dr. T. Jenner Verrall, gave a summary of the work recently done by the Committee in connexion with medical demobilization. In formulating its ideas of general demobilization many months ago the Committee adopted as its main principle the right of the men who have served longest to priority of release. At a meeting of the Inter-departmental Committee on Medical Services on November 11th last it was, however, decided that a limited number of medical officers must be released at once to meet urgent civil needs, and that the men demobilized on those grounds should, so far as general practitioners in England and Wales were concerned, be nominated by the Central Medical War Committee, acting upon information received from the Local Medical War Committees. The report draws attention to the fact that this process of limited release is not that of general demobilization, and that the circumstances taken into account in the one process are not those which are entitled to weigh in the other. The Ministry of National Service has accepted the scheme submitted by the Committee for priority of release in general demobilization; this was published in the *SUPPLEMENT* of January 11th, together with the form to be filled up by all medical officers temporarily serving with the forces and returned to the Ministry of National Service. It is impossible at the present time to state when general demobilization will begin, as that depends upon military and political considerations, which are still very uncertain. The information received from serving medical officers by the Ministry of National Service will be placed at the disposal of the Committee, and will enable it to allocate his proper position in the priority scale to every medical man who does not claim further consideration on exceptional grounds, which will be separately assessed. The Committee believes that as soon as general demobilization can be begun the simplicity and fairness of the priority scheme will appeal to all. In the meantime various points of interpretation and procedure in connexion with the actual administration of the scheme, are under consideration by a special sub-committee.

Medical Resettlement.

The report of the Central Medical War Committee referred also to the possibilities of giving assistance to doctors on their return to civil life, summarizing briefly the information which has been given from time to time in the *JOURNAL* and *SUPPLEMENT*. This question is regarded as one of immediate practical importance, since, apart from the priority of release, matters of a more distinctly professional, and also of a financial, character are bound to arise in the near future. Some men will need assistance to re-establish themselves in practices which have suffered by their long absence; the younger men, too, will require advice and assistance in establishing themselves in the various forms of practice open to them. The experience of the Committee, gained from men who have been on service and have returned after periods varying from one to nearly four years, is that however

unpromising the outlook may be at first, doctors who have practices to return to find that in a comparatively short time their work comes back to them beyond all expectation. It remains to be seen whether this will occur to the same extent when large numbers of men are returning at the same time; but it is evident to the Committee that a considerable number of doctors may need financial aid during the first few months, when their army pay has ceased and little or no money is coming in from their practices. The Committee accordingly arranged a conference with representatives of the various funds upon which medical officers may be said to have a claim.¹ The conference was attended also by a representative of the Appointments Department of the Ministry of Labour, as on that body devolves the responsibility of looking after the interests of the men who have served, whether as officers or men, provided they have attained a certain educational standard. As the outcome of this conference it would seem that there is little likelihood that money will be forthcoming from which returning officers may expect to secure loans; but that the National Relief Fund will not be indifferent to any application from an established body, such as the War Emergency Fund, if it can make out a good case for assistance; and that there are distinct possibilities in the way of aid from the Ministry of Labour, mainly, perhaps, for educational—that is, post-graduate teaching—purposes. The whole matter is still under consideration by the Central Medical War Committee, and an interview is being arranged with the Appointments Department of the Ministry of Labour to go more fully into the last named aspect of the question.

War Emergency Fund of the Royal Medical Benevolent Fund.

A subscription of £10 10s. has been received from the Northamptonshire Division, per Dr. S. E. Baxter, Honorary Secretary, in response to the recent appeal, and has been passed on to the Treasurer of the War Emergency Fund. The names of individual subscribers are published monthly in the advertisement pages of the JOURNAL.

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

INSURANCE.

TREATMENT OF TUBERCULOUS INSURED PERSONS.

THE London Panel Committee, at its meeting on December 17th, after receiving a report of the recent conference between representatives of certain committees and the metropolitan tuberculosis officers as to the position of the general practitioner in relation to the sanatorium and other treatment of tuberculous insured persons, passed a resolution that the practitioners on the panel be notified that the general treatment of their tuberculous insured patients is their own responsibility, should not be deputed to any institution, and should, in the interests of an efficient medical service, be accepted in accordance with the terms of their agreements. The resolution also urged that conferences should be arranged as far as practicable between the tuberculosis officers and the practitioners on the panel in the dispensary area. The Committee further agreed that practitioners should, in their individual dealings with tuberculosis dispensaries as well as by collective representation at the proposed conferences, maintain the position that a tuberculosis dispensary in insurance practice is a consultative institution at which patients should be received only upon the introduction of their medical attendants, and for the purposes of consultative examination or temporary specialist treatment.

¹ BRITISH MEDICAL JOURNAL, December 14th 1913, p. 651; SUPPLEMENT, December 24th 1918, p. 95; BRITISH MEDICAL JOURNAL, January 4th 1919, p. 17.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commander J. Fuller to the *Hamadryad* for Navigation School, Port-mouth. Surgeon Lieutenant Commander A. R. Fletcher to the *Irre gant*, additional, for R.N. Sick Quarters, Dover. Surgeon Lieutenants (temporary) J. C. Steigh to the *R. bin*, R.C.W. Steigh to the *Sa d d r p r*, A. G. rdiner-Hill to the *Avro g ut*, additional, for R.N. Sick Quarters, Dover; H. D. Morse to the *Pegasus*, H. L. F. Foxell to the *Europa*, C. L. Sutherland to the *Queen Elizabeth*, J. Brumwell to R.M. Division, Shoreham Camp.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Sublieutenant (temporary) A. Hanson to the *Orocus*.

ARMY MEDICAL SERVICE.

Temporary Major-General Cuthbert S. Wallace, C.B., C.M.G., relinquishes his commission and retains the rank of Major-General. Temporary Colonel Owen Richards, C.M.G., D.S.O., relinquishes his commission and retains the rank of Colonel (substituted for notification in the *London Gazette*, December 30th, 1918).

ROYAL ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel Sir J. W. Barrett, K.B.E., C.B., C.M.G., relinquishes his commission and retains the rank of Lieut.-Colonel. The name of Lieut.-Colonel Francis J. Maturin and the rank of Lieut.-Colonel Francis R. Hill are as now described, and not as in the *London Gazette* of December 20th, 1918.

Majors to be acting Lieut.-Colonels:—Whilst in command of a medical unit: T. S. Backwell, G. R. Painton, T. H. Gibbon, W. W. Watson, D.S.O. Whilst employed as Assistant Directors of Medical Services of a division: J. A. Brunsell, D.S.O., from September 17th to 22nd, 1918, inclusive; W. B. Spa kes, D.S.O.

Major R. G. Archibald, D.S.O., is placed on the half-pay list under the provisions of Article 307 (7), Royal Warrant for Pay and Promotion.

Temporary Major H. MacCormac to draw the pay and allowances of his temporary rank from Jan. 4th to July 15th, 1918.

Captains relinquish the acting rank of Lieut.-Colonel and revert to the acting rank of Major, with pay and allowances of their substantive rank: S. J. Higgins (Aug. 26th, 1918), J. F. Grant (Aug. 18th, 1918).

The notifications in the *London Gazette* of May 16th, Nov. 15th, and Dec. 4th, 1918, regarding Captain D. H. Russell, M.C., temporary Captain C. Sa keld, and Captain S. J. Higgins respectively are cancelled.

Captain J. H. Beckton to be acting Lieut.-Colonel whilst in command of a medical unit.

Temporary Captains relinquish the acting rank of Major on re-posting: W. G. Waugh, C. F. White, J. D. Duncan, C. G. H. S. Morse.

To be acting Majors: Captains R. D. Davy, M.C. (from June 28th to Aug. 9th, 1918, inclusive), J. P. Little, E. P. A. Smith, M.C., C. A. Robinson, M.C. Temporary Captains G. B. Elliott, W. C. Horton, G. L. Keynes, G. D. McLean, J. C. Sale, D.S.O., M.C., W. Morris, V. L. Connolly, M.C., D. H. Russell, M.C., G. H. Davy (from May 20th to July 9th, 1918, inclusive), W. P. Cooney (from April 20th to May 11th, inclusive), C. G. Mackay (from May 27th to August 13th, 1918, inclusive), J. A. G. Burton (from Jan. 4th to Sept. 13th, 1918, inclusive), A. R. Elliott. Whilst specially employed: Temporary Captains G. G. Buchanan, A. G. Caldwell, T. E. R. Branch.

Officers relinquish their commissions:—Temporary Majors, and retain the rank of Major: R. T. Herron, J. C. MacNeillie, W. M. Robinson (on ceasing to be employed at the North n War Hospital). Temporary Captain (acting Major) J. Laurent, on account of ill health, and retains the rank of Major. Temporary Captains, on account of ill health contracted on active service, and retain the rank of Captain: H. G. Rice, H. E. Brown, R. N. Porter, G. Laurence, G. Thom, J. C. Macaulay, W. H. Johnston. Temporary Captains, on account of ill health, and retain the rank of Captain: G. H. Rodolph (substituted for notification in the *London Gazette*, December 13th, 1918), G. W. Anerum, H. S. Millar, J. Bain. Temporary Captains, and retain the rank of Captain: G. B. Moffatt, D.S.O., C. A. Moseley. Temporary Captains: J. M. Glasse, A. R. Jackson, M.C., J. S. Bellas, J. B. McCabe, R. Bruffant. Temporary honorary Captain R. A. Holmes on ceasing to serve with No. 8 British Red Cross (Baltic and Corn Exchange) Hospital. Temporary Lieutenants: F. J. Power (and retains the rank of Lieutenant), A. A. Han. Temporary honorary Lieutenant H. A. Towns (on ceasing to be employed with British Red Cross Society in France).

Temporary Lieutenant Hugh Mowat, M.B., is dismissed the service by sentence of a general court martial, December 17th, 1918.

Temporary Lieutenants to be temporary Captains: H. M. Perry, J. L. Scibbling, T. A. Fall, A. Robin, R. H. Vercoe, H. M. Bickett, C. A. A. Lever, S. Johnson, J. W. Huelin, H. Gibson, C. Clyde, M.C., T. J. Cobbe, P. Savill, G. R. Jeffery, W. B. Valle, E. Gandy, E. O. Hughes, A. P. Hall, J. F. O'Mahony, G. B. Proctor, J. Methewson, W. J. B. Lavery, C. E. Elliott, E. G. Bunbury, J. C. Duncan, C. I. McLaren, C. Dea, E. M. Grace, G. G. W. Davis, M.C., E. R. Griffiths, G. A. Thompson, D. C. McCormick, C. G. Burton, R. N. Port r, B. A. L. Peters, F. J. Cairns, J. B. Taylor, I. L. MacInnes, V. J. A. Wilson, C. E. F. Salt, F. King, S. S. Rosebery, G. Good, W. H. A. Elliott, H. S. Dixon, J. J. Delaney, O. H. Woodcock, J. Good, H. S. Roberts.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Major A. V. J. Richardson to be acting Lieut.-Colonel while employed as Lieut.-Colonel.

L. S. Goss (Surgeon Lieutenant R.N.) is granted a temporary commission as Captain—October 1st, seniority April 1st, 1918—substituted for notification in the *London Gazette*, January 7th.

The following relinquish their commissions on ceasing to be employed: Major-General R. C. Munday, C.B. (and retains the rank of Major-General); Captains J. A. Watson, H. Greenwood, E. J. Boyd (Surgeon R.N.), and H. J. Shanley (Captain R.A.M.C.T.F.). At the own request: Lieut.-Colonel H. J. Hadden (Fleet Surgeon R.N.), Captain A. E. McCulloch.

The notification in the *London Gazette*, January 7th, concerning Captain F. B. Gillespie is cancelled.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain S. Wickenden relinquishes the acting rank of Major on re-posting.

Captains to be acting Majors: J. R. McChirdie, M.C., O. H. Mayor, A. Glen, M.C. (from January 4th to August 13th, 1918, inclusive), H. M.

Williams (from January 4th to February 7th, 1918, inclusive), C. A. McGuire, W. J. A. Laird (from January 4th to April 4th, 1918, inclusive), P. Thornton, M.C., C. R. McIntosh.

Captain D. McK. Sutherland relinquishes his commission on account of ill health, and retains the rank of Captain.

Lieutenant G. N. Groves to be Captain.
Honorary Second Lieutenant G. S. Lewis to be Lieutenant.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL SERVICE.

Temporary Colonel H. S. Birkett, C.B., C.A.M.C., Assistant Director-General Medical Services, O.M.F.C., to be temporary Brigadier-General and to be graded for purposes of pay under S.P., cl. 2.

CANADIAN ARMY MEDICAL CORPS.

Temporary Colonel C. A. Hodgetts, C.M.G., ceases to be seconded for duty with the Ministry of National Service.

Temporary Major S. H. McCoy to be temporary Lieut.-Colonel.

Temporary Captains H. A. Gordon and H. A. Snetsinger to be temporary Majors.

Temporary Captain (acting Major) M. H. Allen to retain the acting rank of Major while employed in D.G.M.S. Office.

Temporary Lieutenants to be temporary Captains: J. W. Harper, G. Leith, A. E. Kennedy, D. MacDougall, P. H. McNulty, G. A. Minorgan, W. E. Munro, J. E. Pritchard, E. Wershof, A. S. McCann.

Temporary Honorary Captain J. W. White relinquishes the acting honorary rank of Major on ceasing to command a dépôt.

BRITISH WEST INDIES REGIMENT.

Temporary Surgeon Lieutenant I. McDowall to be temporary Surgeon Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major (acting Lieut.-Colonel) J. Evans relinquishes his acting rank on ceasing to command a field ambulance.

Captain (acting Major) H. Drummond relinquishes his commission on account of ill health contracted on active service, and is granted the rank of Major.

Captains (acting Majors) W. C. Hodges and F. Wigglesworth relinquish their acting rank on ceasing to be specially employed.

Captains to be acting Majors whilst specially employed: C. M. Nicoll, C. M. Gozney, J. M. Pringle, M.C.

Captain E. W. Richards relinquishes his commission on account of ill health and retains the rank of Captain.

Captain A. E. Raine relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

1st Eastern General Hospital.—Major A. Cooke is restored to the establishment.

1st London Sanitary Company.—Lieutenant P. N. McRae to be Captain.

2nd London Sanitary Company.—Captain (acting Major) F. S. Carson, M.C., relinquishes his acting rank on ceasing to be specially employed. Captain N. Gebbie to be Deputy Assistant Director of Medical Services and to be acting Major whilst so employed. Lieutenant H. Jessop to be Captain. Lieutenants to be Captains and to remain seconded: T. H. Savory, G. N. F. Reddan, J. Dall, A. Sykes, D. Smith.

2nd Northern General Hospital.—Captain A. Richardson is restored to the establishment.

5th Northern General Hospital.—Captain J. W. Patrick is restored to the establishment.

1st Southern General Hospital.—Major W. Kirkpatrick to be acting Lieut.-Colonel whilst specially employed, and to be seconded.

1st Western General Hospital.—Captain R. W. McKenna is restored to the establishment.

2nd Western General Hospital.—Captain (acting Major) H. Buck relinquishes his acting rank on ceasing to be specially employed. Captain C. P. Lapaze reverts to the list of officers available on mobilization, and is restored to the establishment. Captain E. Moir is restored to the establishment.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Lieut.-Colonel: A. Ogston, from Highland Casualty Clearing Station.

To be Majors: Majors (acting Lieut.-Colonels) A. E. Hodder, D.S.O., 3rd North Midland Field Ambulance; A. Callan, 2nd East Lancashire Field Ambulance; J. G. Martin and H. W. Williams, Attached to Units other than Medical Units. Majors C. W. Isaac, 3rd Welsh Field Ambulance; A. A. Mussen, Sanitary Service; R. Corfe, 5th London Field Ambulance; J. Bruce, Lowland Mounted Brigade Field Ambulance; C. B. Whitehead, 3rd Northern Field Ambulance; H. E. Corbin, from General List; J. McD. Nicoll, 2nd Northern Field Ambulance; E. B. Waggett, D.S.O., 3rd London Field Ambulance; E. C. Stack, J. H. Harris, W. M. Mackay, W. D. Milbanke, and A. B. Murray, Attached to Units other than Medical Units; P. G. Williamson, M.C., Attached to Units other than Medical Units, December 11th, 1918 (substituted for notification in the *London Gazette*, December 31st, 1918).

To be Captains: Captains S. McCoull, Northern Casualty Clearing Station; B. B. Morgan, 2nd East Anglian Field Ambulance; J. A. Mathers, Scottish Horse Mounted Brigade Field Ambulance; G. Scott, M.C., 5th London Field Ambulance; (acting Major) W. C. Hodges, 1st South-Western Mounted Brigade Field Ambulance; W. T. Wood, North Midland Casualty Clearing Station; E. H. Helby, 1st Wessex Field Ambulance; J. Gutch, 1st Eastern General Hospital; (acting Majors) J. Henderson and D. Lamb, 4th Scottish General Hospital; D. A. Wilson, 1st Northern Field Ambulance; G. S. Williamson, 5th South Midland Field Ambulance; (Brevet Major) A. Walker, D.S.O.; T. J. Thomson, D. F. Macrae, G. Eustace, J. D. Lickley, D. G. H. Salmon, O. Teichmann, D.S.O., M.C., M. Wilks, A. N. Cray, J. C. Livingston, (acting Major) G. Potts, R. D. Cran, F. Harvey, (acting Major) T. P. Caverhill, D. R. Harris, and J. W. M. Jamieson, Attached to Units other than Medical Units; H. C. H. Bracey, General List; A. J. Campbell, South Wales Mounted Brigade Field Ambulance; J. Carroll, 3rd Welsh Field Ambulance; C. R. Crowther, 2nd Wessex Field Ambulance; A. C. C. Lawrence and W. M. Wilson, 2nd Northern Field Ambulance; (acting Major) A. C. Watkin, 2nd Home Counties Field Ambulance; (acting Major) T. H. Peyton, D.S.O., 1st Home Counties Field Ambulance; W. C. Hodges, 1st South-Western Mounted Brigade Field Ambulance, December 7th, 1918 (substituted for notification in the *London Gazette*, January 9th, 1919); H. F. W. Boedicker, 1st South Midland Field Ambulance, December 8th, 1918 (substituted for notification in the *London Gazette*, January 3rd, 1919); F.

Wigglesworth, 1st West Riding Field Ambulance, November 28th, 1918 (substituted for notification in the *London Gazette*, December 14th, 1918); T. L. Ashforth and A. Mowat, Highland Mounted Brigade Field Ambulance; (acting Major) W. J. Purves, M.C., 2nd East Lancashire Field Ambulance; (acting Major) S. McCann, M.C., 1st West Lancashire Field Ambulance; J. Fenton and A. Greene, Wessex Casualty Clearing Station; W. S. Forbes, 1st London Casualty Station; W. W. J. Lawson and (acting Major) W. Sneddon, 3rd West Riding Field Ambulance; C. H. Lilley, 2nd London Sanitary Company; A. V. Maybury, 3rd Wessex Field Ambulance; C. G. Meade, M.C., Yorkshire Mounted Brigade Field Ambulance; R. W. Nevin, 1st Northern Field Ambulance; (acting Major) J. L. M. Symms, 1st East Anglian Field Ambulance; (acting Major) R. M. Vick, 3rd London Field Ambulance; (acting Major) A. E. Barnes, 3rd Northern General Hospital; W. D. Carruthers, 1st London Sanitary Company.

VOLUNTEER FORCE.

Suffolk R.A.M.C.(V).—Captain A. W. Addinsell, late R.A.M.C., to be Captain.

APPOINTMENTS.

CLEGG, S. J., M.D. Vict., D.P.H., Deputy Medical Officer of Health for Newcastle-upon-Tyne.

FINZI, N. S., M.B., Medical Officer in charge of the X-ray Department, St. Bartholomew's Hospital.

HALL, Robert, L.R.C.P. Edin., L.R.C.S. Edin., L.M., Examiner in Clinical Medicine in Belfast University; also Physician and Consultant to the Ulster Volunteer Force Hospital for Discharged Sailors and Soldiers (under Ministry of Pensions).

HUTCHESON, Richard C., M.B., Ch.B., Medical Superintendent of the Bagley Sanatorium, Manchester Corporation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGE.

HALL—ROUTLEDGE.—On January 1st, 1919, at St. John's Church, Holland Road, W., by the Rev. H. B. Forster, assisted by the Rev. A. Howe-Browne, Robin Hall, M.B., B.Ch., R.A.O., Captain Royal Air Force, elder son of Dr. and Mrs. Robert Hall of Belfast, to Geraldine Elsie, only daughter of Mr. and Mrs. Gerald Edmund Routledge of Kensington, W.

DEATHS.

BATTERSBY.—January 20th, at South Parade House, Doncaster, of pneumonia, John Hargreaves Battersby, M.D.

KEMP.—January 17th, suddenly, of heart failure, William George Kemp, M.D., of "Oakhurst," Hastings, formerly of Wellington, New Zealand, aged 72.

DIARY FOR THE WEEK.

MEDICAL OFFICERS OF THE DOMINIONS AND UNITED STATES.

The following are among the facilities offered in London to medical officers of the Dominions and United States in this country.

The *British Medical Association* invites these officers to make use of its house at 429, Strand, including the library. They are also invited to communicate with the honorary secretaries of the Divisions and Branches of the Association in the areas in which they reside, in order that they may be invited to attend meetings of Divisions or Branches. The Medical Secretary will, on application, send the name and address of the secretary of the local Division or Branch.

The *Royal Society of Medicine* also invites these officers to make use of its library, to attend the meetings of the Society and its sections which are announced weekly in this column, and generally to take advantage of facilities offered by the Society to its Fellows, including the Fellows' room where tea, coffee, and cigarettes are provided between the hours of 4 and 6 p.m. Arrangements have also been made to give help to officers in the country and abroad by sending them information from the library, including abstracts and translations. The principal hospitals of London have cordially expressed their willingness to admit medical officers of the Dominions and American armies to lectures, operations, etc. The Society has arranged to hold a social meeting every Wednesday at 8.30 p.m. All particulars can be obtained on application to the Secretary, Mr. J. Y. W. MacAlister, 1, Wimpole Street, W.1 (about five minutes' walk from Oxford Circus).

The *Royal College of Surgeons of England* (Lincoln's Inn Fields, W.C.) has provided in its museum space for the display of the Army Medical War Collection; additions are constantly being made as the preparation of new specimens is completed. The collection, which includes also drawings and specimens of protective apparatus, is open from 10 a.m. to 4 p.m. Officers desiring to read in the library can obtain permission on application to the Librarian.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W., 8.30 p.m.—Discussion on the Modern Treatment of (Gonorrhoea of the Genito-urinary Organs, to be introduced by Colonel L. W. Harrison, R.A.M.C.

TUBERCULOSIS SOCIETY, 1, Wimpole Street, W.1, 8.30 p.m.—Dr. Dundas Grant: Tuberculosis in Relation to the Upper Air and Food Passages.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.—Monday, Wednesday, and Friday, 5 p.m., Professor Arthur Keith, F.R.S.: Phases in the Life and Work of John Hunter.

ROYAL SOCIETY OF MEDICINE.—Section of Odontology: Monday, 7.30 p.m., Captain William Billington, M.S., R.A.M.C., Mr. Arthur H. Parrott, M.D.S., L.D.S., and Mr. Harold Round, M.D.S., L.D.S.: Bone Grafting in Gunshot Fractures of the Jaw. Section of Medicine: Tuesday, 5.30 p.m., Dr. Gordon Ward: Apyrexial Symptoms in Malaria. Dr. David Thomson: Complement Deviation Test in Malaria. Section of Bacteriology and Climatolog: Thursday, 5.30 p.m., Dr. C. F. Sonntag: Temperature Environment and Thermal Debility, a Study of the Beneficial and Injurious Effects of Heat.

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 1st, 1919.

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British Medical Association.

CURRENT NOTES.

Payment of Medical Practitioners called in by Midwives.

THE Midwives Act, 1902, and the rules made thereunder by the Central Midwives Board, provided that in certain circumstances a midwife must recommend that a medical practitioner be called in, but no provision was made for the payment of the doctor's fee. When the Local Government Board in February, 1908, issued a circular providing for the payment by boards of guardians of any medical practitioner so called in, the Annual Representative Meeting, 1908, expressed the opinion that those payments should be made compulsory on the local supervising authority—namely, the town council. This view was pressed upon the Departmental Committee appointed by the Privy Council in 1909; also, that any scale of fees should be fixed by the Local Government Board. The Departmental Committee agreed that the scale should be fixed by the Local Government Board, but recommended that the fees be paid by the boards of guardians. In April, 1910, the Medico-Political Committee laid down a scale of fees which, though later amended in detail, was practically the same as that adopted by the Annual Representative Meeting, 1915, as the policy of the Association. In the same year, 1910, in connexion with an amending bill introduced by the Government (subsequently withdrawn), the Association made representations to the Privy Council and Local Government Board as to the scale of payments, and as to the local authorities through which payment should be made.

In January, 1918, the Local Government Board intimated to the Association that it was approving, in connexion with local schemes for the payment of doctors called in on the advice of midwives, the scale adopted by the Association in 1915. The schemes so approved were those of the local supervising authorities, as urged by the Association in 1910, the Board having thus reversed its policy of 1908 of using boards of guardians. Whereas, however, the Association urged that payment should be made for all cases, the Local Government Board only sanctioned payment in necessitous cases.

Section 14 of the Midwives Act, 1918, requires a midwife in any emergency, as defined in the rules of the Central Midwives Board, to call in a registered medical practitioner, and requires the supervising authority in such case to pay the practitioner's fee according to a scale fixed by the Local Government Board. The original bill, as introduced in the Lords, proposed that the scale to be fixed

by the Local Government Board should cover one subsequent visit. As a result of action taken by the Association the words "and such fee shall cover one subsequent visit" were omitted by the Government from the bill. The Local Government Board has fixed for the purpose of Section 14 the scale adopted by the Annual Representative Meeting, 1915 (see BRITISH MEDICAL JOURNAL, January 11th, 1919, p. 54).

Under the terms of the Act (1) the medical practitioner called in is required, as a condition of payment of his fee, to state in his claim to the local supervising authority the nature of the emergency, and (2) the local supervising authority is empowered to recover the fee from the patient or her husband or other person liable to maintain her, either summarily or otherwise as a civil debt, unless it is shown to its satisfaction that the patient or her husband or such other person is unable by reason of poverty to pay such fee. It will be noted that although many local authorities who are not supervising authorities under the Midwives Act, 1902, have already been paying, with the sanction of the Local Government Board, the fees of doctors called in at the instance of midwives to patients in their districts, this obligation from January 1st, 1919, passes to the local supervising authority.

The original policy of the British Medical Association as regards the scale of fees to be paid, the local authority by which the payments are to be made, and payment in all cases, is thus given effect to.

National Deposit Friendly Society.

In consequence of many representations made to the Medico-Political Committee, the National Deposit Friendly Society was recently approached with a view to obtaining an increase of the present fees paid by that society for medical attendance on its members. As a result of the conferences which took place the representatives of the society agreed to accept the following revised scale of fees subject to its approval by the Association:

Visit with medicine for two days	6
Each intermediate visit in dangerous cases	6
If beyond two miles (outward) extra per mile	1 0
Attendance at surgery and medicine for two days	2 6
Fresh supply of medicine for two days	1 6
Visit in urgent or dangerous cases between the hours of 8 p.m. and 8 a.m. (with medicine)	5 0
Attendance at surgery in urgent or dangerous cases between the hours of 8 p.m. and 8 a.m. (with medicine)	3 0

This scale was approved by the Council at its meeting on January 22nd, and will come into operation as from February 1st, 1919. It represents an increase of a little more than 50 per cent. over the scale previously in force.

War Emergency Fund of the Royal Medical Benevolent Fund.

A further subscription of £2 2s. has been received from the Buckinghamshire Division of the British Medical Association (per Dr. H. J. Henderson, late acting Honorary Secretary), in response to the appeal, and has been passed on to the Treasurer of the War Emergency Fund. The names of individual subscribers are published monthly in the advertisement pages of the JOURNAL.

SCOTTISH COMMITTEE.

THE Committee met in Edinburgh on January 4th, when there were present Dr. DREVER (chairman), Drs. R. C. Buist, J. F. Christie, John Goff, J. Wishart Kerr, C. E. Robertson, W. Sneddon, John Stevens, and Captain F. K. Smith.

It was resolved that the recently constituted Highlands and Islands Subcommittee should be elected by direct vote of all practitioners serving under the Highlands and Islands Medical Service Board. One member will be elected by each of the following constituencies: Argyll, Caithness, Inverness, Ross and Cromarty, Sutherland, Orkney, Zetland, and the Highlands District of the county of Perth.

A report of the past year's work was received from Drs. Michael Dewar and Wishart Kerr, the two members appointed by the Committee on the Central Midwives Board (Scotland), and they were thanked for it. The Committee will consider at its next meeting the scales respectively adopted in Scotland and England for the payment of doctors called in on the recommendation of midwives.

Steps were taken to induce colliery owners to include in the exhibited lists of doctors available for attendance on workmen and their families the names of local doctors absent on service.

Ministry of Health.

The Committee then considered an invitation to a conference called by representatives of the various medical bodies in Scotland to consider the desirability of forming a joint committee to deal with the proposed Ministry of Health for Scotland and resolved to co-operate with the medical corporations so long as the general principles defined by the Association can be secured. The conference was held the same afternoon under the chairmanship of Sir Donald MacAlister, when it was agreed to form a joint committee with the following reference:

To collect and formulate the views of Scottish members of the profession on the proposals now under discussion for the establishment of a Ministry of Health, and on other important problems of medical reconstruction.

The constitution of the joint committee is as follows:

- (i) Members of the Scottish Branch of the General Medical Council (9).
- (ii) All members of the Scottish Committee of the British Medical Association (21).
- (iii) One representative from each of the Universities (4).
- (iv) Two representatives from each of the Licensing Corporations (6).
- (v) Two representatives from the Society of Medical Officers of Health (2).
- (vi) One representative of women practitioners (1).
- (vii) Four co-opted members (4).

IRISH COMMITTEE.

A MEETING of the Irish Committee of the Association was held on January 2nd. A warm vote of thanks was passed to the outgoing Chairman, Dr. J. Giusani, to which he replied in suitable terms.

Dr. J. S. Darling was elected chairman of the Committee, and Dr. Denis Walshe vice-chairman, for the year. The Committee co-opted Drs. Joseph Power, Denis Walshe, and H. T. Warnock as members of the Committee for the year.

The Committee directed the Irish Medical Secretary to make definite representations, in addition to what had been done already, to the proper departments in regard to (1) Poor Law medical officers' salaries; (2) reduced travelling expenses of registrars of births, deaths, etc.; (3) reduced salaries of prison medical officers; (4) inadequate remuneration for medical attendance on post office employees, and for the dependants of married members of the Royal Irish Constabulary; (5) the selection of medical attendants to the Royal Irish Constabulary, and the conditions in regard to their removal from office.

The Committee was unanimously of opinion that a Ministry of Health Bill should be introduced to Parliament for Ireland accompanied by a radical reform of the Poor Law medical service, with provisions for compulsory superannuation, etc.

INSURANCE.**CONDITIONS OF SERVICE.**

THE annual conference of representatives of Local Medical and Panel Committees, held in October, 1917, resolved that the Insurance Commissioners should be asked to allow a committee of six appointed by the Insurance Acts Committee to see all the figures and particulars of the process of calculating the Central Pool necessary to enable them to reassess the Local and Medical Panel Committees on the points that still remained in doubt. On November 1st, 1917, the Insurance Acts Committee accordingly appointed a subcommittee for this purpose. In February, 1918, the subcommittee was reappointed to consider and report on the question of methods of remuneration of insurance practitioners. This Methods of Distribution Subcommittee and its predecessor held a number of joint meetings with the Insurance Commissioners, at the offices of the English Insurance Commission, for the investigation and discussion of matters coming within the terms of reference. Following the annual conference of representatives of Local Medical and Panel Committees held in October, 1918 the Insurance Acts Committee appointed a Conditions of Service Subcommittee in place of the previous subcommittee, with the following reference: To consider, in conjunction with the Commissioners, and report on the question of the conditions of service of insurance practitioners. This subcommittee—which is made up as follows: Drs. H. B. Brackenbury (chairman), T. Ridley Bailey, H. G. Cowie, H. G. Dain, J. R. Drever, P. V. Fry, Stanley Hodgson, A. Linnell, H. L. Rutter, J. P. Williams-Freeman, and Major E. R. Fothergill—has continued the practice of holding periodical meetings at the offices of the Insurance Commission.

SCOTTISH SUBCOMMITTEE OF THE INSURANCE ACTS COMMITTEE.

THIS Subcommittee met in Edinburgh on January 4th, when there were present Dr. J. R. Drever, Drs. W. Blair, R. C. Buist, M. Dewar, J. Goff, J. Hill, J. Hunter, W. R. Martine, C. Nairn, C. E. Robertson. Dr. Drever was reappointed chairman for the ensuing session.

Constitution of Subcommittee.

It was reported that the following had been elected as direct representatives of the Panel Committees:—*County*: Drs. W. Blair (Jedburgh), W. R. Martine (Haddington), J. Hill (Renfrew), G. Peterkin (Forfar). *Burgh*: Drs. J. Andrew (Coatbridge), J. Todd (Glasgow), C. Nairn (Greenock). The Subcommittee appointed Dr. M. Dewar of Edinburgh to fill the vacancy in the representation of the Burgh Committees.

The following were elected by the Scottish Committee: Drs. C. E. Robertson (Glasgow), R. C. Buist (Dundee), G. Williamson (Aberdeen), W. Lawson (Pollokshields), Lieut.-Colonel C. S. Young (Dundee).

Grant for Increased Practice Expenses.

The Subcommittee had before it the circular letter issued by the Insurance Acts Committee recommending the distribution of this grant among doctors in an area to those who dispense for their patients, as being a prompt way of distribution which would reach the rural and semi-rural doctors for whom it was intended; also a letter from the Scottish Insurance Commissioners pointing out that the proposed method, while equitable in England and Wales, would not be satisfactory in Scotland owing to the difference in custom as regards dispensing.

The Subcommittee then received the following representatives of the Scottish Commission who had been

invited to discuss the question: Dr. J. C. McVail, Mr. Vallance, and Mr. Wight. These representatives dealt with the reasons which led them to believe that the method proposed would operate unfairly in the case of Scottish practitioners and regretted that they had not drawn attention to the points in question before the issue of the Insurance Acts Committee's circular.

After full discussion it was resolved that, so far as Scotland was concerned, the money should, generally speaking, be distributed in each area on the same basis as the mileage grant, but that it should be open to any Panel Committee to arrange, in consultation with the Insurance Committee, for a different method of distribution, with a right of appeal in case of dispute to the Commissioners. It was arranged that a letter on the subject should be issued by the Subcommittee, after consultation with the Commissioners, explaining the position to all Panel Committees. The representatives of the Commission were thanked for their attendance, and withdrew.

Certification in Chronic Cases.

Reports were received from practitioners as to cases in which payment of benefit is prejudiced by the present practice of certain approved societies as regards certification, and it was resolved to bring these cases to the notice of the Scottish Commission.

Pharmaceutical Service, 1919.

The Subcommittee approved the continuance of the *status quo* as regards the pharmaceutical service in Scotland for 1919, on the suggestion of the Pharmaceutical Standing Committee (Scotland).

Rural Practitioners Subcommittee.

Dr. W. R. Martine was nominated for reappointment as a member of this subcommittee of the Insurance Acts Committee for 1919.

CONFERENCE BETWEEN SUBCOMMITTEE AND SIR EDWIN CORNWALL.

The Subcommittee was informed that the chairman of the National Health Insurance Joint Committee on the occasion of his visit to Scotland would be glad to meet representatives of Scottish insurance practitioners. Accordingly, Drs. Drever, Goff, Dewar, Hunter, Peterkin, Hill, Lawson, Todd, Martine, and Blair met Sir Edwin Cornwall and representatives of the Scottish Commissioners in Edinburgh on Monday, January 20th.

Dr. DREVER, in introducing the deputation, said that the shortness of notice had prevented any full consideration of matters to be placed before Sir E. Cornwall, but this was the less necessary because the parent body—the Insurance Acts Committee of the Association—was in close touch with the Joint Commission in London. There were one or two points which were specially exercising the Scottish profession, notably difficulties in regard to certification. It was felt that too rigid application of the rules and the somewhat exacting demands of some societies caused friction between doctors and patients, and created an atmosphere detrimental to the execution of the doctor's proper duty—namely, the treatment of illness. The points of difficulty were: The requirement of a certificate on a particular day of the week; the refusal to pay benefit weekly in chronic cases where a certificate at less frequent intervals was accepted; the necessity of seeing a patient on the last day of incapacity; and the delay in payment of benefit even when certificates were furnished regularly. The Subcommittee believed that the appointment of official referees should be proceeded with as soon as possible; also that the profession had a good claim for increase of remuneration, which would be pressed when the revision of the conditions of service was considered.

SIR EDWIN CORNWALL expressed his pleasure at meeting representatives of Scottish practitioners and his appreciation of the good work done by the profession in very trying circumstances. He promised favourable consideration of the points raised, and was personally in favour of granting the best terms possible to doctors. Financial stability was the basis of the Insurance Acts, and much relaxation of the certification rules, on which so much depended, might not be possible. In particular, societies claimed that they could not pay beyond the actual date of an intermediate certificate so long as doctors did not faithfully observe Rule VII. As to referees, he required no persuasion, and was taking all possible steps for their early appointment.

A vote of thanks to Sir Edwin for his reception of the deputation closed the proceedings.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

THE Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting. Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

All concerned are reminded that nominations of candidates for election as members of Council by Home Branches or groups require to be forwarded to reach the Acting Financial Secretary and Business Manager not later than May 17th. Nominations may be either by a Division or by any three members of a Branch. Members and Divisions can obtain copies of the appropriate nomination form on application to the office. The nominations will be published in the SUPPLEMENT of May 24th. Where contests occur, election will be by voting papers sent direct by post from the Head Office to each member.

For the seven seats on the Council, 1919-20, which are filled by the Oversea bodies, nominations by not less than three Branch members, require to be received at the Head Office not later than February 15th. Election, where there is a contest, is by voting papers sent direct to all the members concerned.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:— Surgeon Lieutenants (temporary): G. Young to the *Lanaster*, C. V. Samwell to the *Berwick*, R. Biddle to the *Devonia*, J. D. Arthur to the *Dido*, G. F. Cobb and W. F. W. Betenson to Haslar Hospital; H. Gilliland, J. Phillips, and W. L. Berry to Plymouth Hospital; C. N. Radcliffe, E. A. L. Samson, G. Miller, B. L. Skeggs, and P. Banbury to Chatham Hospital; D. McK. Black to the *Lingua*, J. F. Ainley to the *Engadine*. To be Surgeon Lieutenants (temporary): P. Sanbury, A. C. Holliswell, E. P. Brockman, A. T. Hawesley.

ARMY MEDICAL SERVICE.

Temporary Colonel H. A. Bruce (Colonel C.A.M.C.) relinquishes his temporary commission and retains the rank of Colonel. Major W. Tibbles is retained on the active list under the provisions of Articles 129 and 522 Royal Warrant for Pay and to be supernumary.

ROYAL ARMY MEDICAL CORPS.

Temporary Captains relinquish the acting rank of Major on re-posting: A. H. M. Robertson, J. Lamont, A. R. Green.

To be acting Majors: Whilst in command of troops on a hospital ship: Temporary Captain S. S. Dunn. Whilst specially employed: Captain D. B. McGregor; temporary Captains M. McLeod, C. C. Lord. Whilst in charge of Glenlondond War Hospital, Kinross: Temporary Captain H. G. Gibson.

The notification regarding temporary Captain G. E. Lockyer in the *London Gazette* of December 4th, 1918, is cancelled.

Temporary Captain Thomas Burrell, M.B., is dismissed the service by sentence of a field general court-martial, November 7th, 1918.

Temporary Lieutenant Thomas Ballantyne, M.B., is dismissed the service by sentence of a general court-martial, November 9th, 1918.

Temporary Lieutenants to be temporary Captains: J. H. P. Vivian, J. M. McCormack, E. F. Lawson, A. G. Ede, A. G. Wright, A. H. Rosher, H. S. Lister, G. Stanger, A. N. Fell, H. L. Taylor, F. Robinson, A. Ashkeny, A. H. Firth.

Temporary honorary Lieutenants to be temporary honorary Captains: A. Gregg, H. W. Woodward, D. C. Parmenter from No. 22 General Hospital (Harvard Unit), W. S. Rutherford.

To be temporary Lieutenants: C. M. Halsall.

Officers relinquish their commissions:—Temporary Major E. C. Hort and is granted the honorary rank of Lieutenant-Colonel whilst specially employed with the Red Cross Society. Temporary Majors and retain the rank of Major: H. Heasted (Major S.A.M.C.), C. C. Heywood E. Dodson. Temporary Major W. Hector Mackenzie (on ceasing to be in charge of Glenlondond War Hospital, Kinross). Temporary Captain (acting Major) M. N. Perrin on transfer to the R.A.F. Temporary Captains (acting Majors) and retain the rank of Major: T. I. Bennett, C. A. Boyd. Temporary Captain (acting Major) and retain the rank of Captain: C. F. Knight. Temporary Captains on account of ill health contracted on active service and retain the rank of Captain: R. A. Cummins, E. C. Abraham, M.C. Temporary Captains and retain the rank of Captain: A. B. Le Mesurier, A. R. Hall, J. P. O'Connor, G. B. Brown, D. M. Barry (Home Hospital Reserve), R. D. Lemon, J. L. Rentoul, J. A. Black, W. Parker, L. S. O'Grady, F. Garrett, R. C. Lowe, J. McAl. Hill, S. Rowland, C. S. Vartan, H. T. Lippiatt, W. B. Rutherford, J. P. O'Flynn, A. Maiseed, L. H. Bryson, H. W. Windsor-Aurey, J. P. Fehily, W. Daunt, T. A. Adams, S. J. Simpson, V. B. Kyle, M. Henry, V. E. Ridewood, J. T. O'Boyle, W. Macdonald, D. L. Tate, H. M. Reeve, R. G. Gildies. Temporary Captains on account of ill health and retain the rank of Captain: C. H. Brooks, A. S. Dawson, A. F. Wilson. Dunn, C. D. Goodenough (substituted for notification in the *London Gazette*, May 24th, 1918). G. M. Davies, A. Morton, C. B. Hutchison, A. H. Burnett, A. Emerson, H. D. Ledward, C. D. Rankin, G. R. Dobrashian, E. H. B. Ovam, J. D. Barris, E. L. N. Rhodes. Temporary Captains: D. P. Williams, H. B. Minshull, W. E. R. Dimond, F. Gravely, J. Boyd. Temporary Lieutenants, on account of ill health, and retain the rank of Lieutenant: P. N. Twomey, A. A. Angelis. Temporary Lieutenants and retain the rank of Lieutenant: G. E. Oates (substituted for notification in the *London Gazette* of January 7th), N. S. Williams, Z. M. H. Ross.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Lieut.-Colonels to be Lieut.-Colonels (Grade A): E. O. P. Carbery, H. Cooper, E. C. Cridland, H. J. Hadden, N. H. Harris, R. H. Moriment, J. St. J. Murphy, T. Philip, W. H. Pope, N. J. Roche, H. E. South, H. V. Wells.

Majors (acting Lieut.-Colonels) retain the acting rank of Lieut.-Colonel whilst employed as Lieut.-Colonels (Grade A): G. N. Biggs, H. C. T. Landen, F. F. Muecke.

L. B. Stringer (late Surgeon Lieutenant R.N.) is granted a temporary commission as Captain.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain J. W. Gray relinquishes the acting rank of Major. Lieutenants to be Captains: S. Riddough, I. Liberman, W. O. Holst.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Majors to be acting Lieut.-Colonels: G. E. Kidd, M.C. and G. A. Platt while employed as Officers in Command Surgical and Medical Departments, respectively, of No. 7 Canadian General Hospital.

Temporary Captains to be temporary Majors: H. MacKinnon, E. W. Connolly.

Temporary Captains to be acting Majors: G. Bouthellier (while employed at No. 7 Canadian General Hospital), L. F. Jones (while employed at No. 3 Canadian Stationary Hospital).

Honorary Captain H. J. Testar to be acting honorary Major while employed with the Canadian Red Cross Society.

SOUTH AFRICAN MEDICAL CORPS.

Temporary Captain G. M. N. May relinquishes his commission and retains the rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

To be acting Lieut.-Colonels whilst specially employed: Major F. Gracie, Captain H. F. Humphreys, M.C.

Captains (temporary Majors)—acting Lieut.-Colonels relinquish their temporary rank and retain the acting rank of Lieut.-Colonel whilst specially employed, with precedence from dates indicated: T. B. Volsenholme, O.B.E. (March 3rd, 1917), H. S. Beades (Nov. 10th, 1917), J. R. Pooler (Jan. 12th, 1918), F. G. Dobson, D.S.O. (Dec. 1st, 1916), E. Alderson, D.S.O. (August 8th, 1917), T. S. Allan (March 29th, 1918).

Captains (acting Majors) relinquish their acting rank on ceasing to be specially employed: L. M. V. Mitchell, G. E. J. A. Robinson, H. W. Worr, C. E. H. Milner, A. Mowat.

Captains to be acting Majors whilst specially employed: W. H. Milligan, F. Arvor, W. N. P. Williams, J. H. Donnell, L. N. Reece.

Captain H. G. Mallan relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

London General Hospital.—Captain (Brevet Major—acting) E. H. Fenwick relinquishes his acting rank on ceasing to be employed, and is restored to the establishment.

London General Hospital.—Captain (acting Major) J. H. Cobbin relinquishes his acting rank on ceasing to be specially employed, and is restored to the establishment.

5th Northern General Hospital.—Captain W. I. Cumberlidge is restored to the establishment.

1st Western General Hospital.—Captain (Brevet-Major) K. W. Monsarrat is seconded for service with Alder Hey Special Military Surgical Hospital.

1st Southern General Hospital.—Captain (temporary Major) A. R. Bevan relinquishes his temporary rank.

3rd Southern General Hospital.—Major A. P. Dodds-Parker to be acting Lieut.-Colonel whilst specially employed, precedence from January 21st, 1915.

2nd London Sanitary Company.—Captain W. K. Parbury to be acting Major whilst specially employed.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Lieut.-Colonel: Lieut.-Colonel E. J. Cross, Eastern Mounted Brigade Field Ambulance.

To be Majors: Major R. Stirling and J. E. Molson, Attached to Units other than Medical Units.

To be Captains: Captains H. L. Munro and W. J. Lacy-Hicker, M.C., Attached to Units other than Medical Units; S. F. H. Everill, Notes and Derby Mounted Brigade Field Ambulance; (acting Major) N. Gobbie, 2nd London Sanitary Company; J. M. O'Meara, Eastern Mounted Brigade Field Ambulance; H. J. Shanley, 2nd Northern Field Ambulance; C. Corfield, 3rd South Midland Field Ambulance; W. R. Pierce, 2nd West Lancs Field Ambulance.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

McMILLAN.—On January 19th, 1919, at Dublin, Patricia (née Smyth), the wife of temporary Surgeon Kenneth H. McMillan, R.N., of a son.

TAYLOR.—On January 26th, Annette (née Mockler), wife of Charles Joseph Gordon Taylor, Surgeon Lieutenant R.N.V.R., attached R.A.F., 54, Glenloch Road, Hampstead, of a daughter.

DEATH.

COUTTS.—On November 23rd, 1918, at Grahamstown, South Africa, John Morton Sim Coutts, M.D. Lond., D.P.H., fourth son of John Coutts, Highbury New Park, London.

DIARY FOR THE WEEK.

MEDICAL OFFICERS OF THE DOMINIONS AND UNITED STATES.

The following are among the facilities offered in London to medical officers of the Dominions and United States in this country.

The *British Medical Association* invites these officers to make use of its house at 429, Strand, including the library. They are also invited to communicate with the honorary secretaries of the Divisions and Branches of the Association in the areas in which they reside, in order that they may be invited to attend meetings of Divisions or Branches. The Medical Secretary will, on application, send the name and address of the secretary of the local Division or Branch.

The *Royal Society of Medicine* also invites these officers to make use of its library, to attend the meetings of the Society and its sections which are announced weekly in this column, and generally to take advantage of facilities offered by the Society to its Fellows, including the Fellows' room, where tea, coffee, and cigarettes are provided between the hours of 4 and 6 p.m. Arrangements have also been made to give help to officers in the country and abroad by sending them information from the library, including abstracts and translations. The Society has arranged to hold a social meeting every Wednesday at 8.30 p.m. All particulars can be obtained on application to the Secretary, Mr. J. Y. W. MacAlister, 1, Wimpole Street, W.1 (about five minutes' walk from Oxford Circus).

The *Royal College of Surgeons of England* (Lincoln's Inn Fields, W.C.) has provided in its museum space for the display of the Army Medical War Collection; additions are constantly being made as the preparation of new specimens is completed. The collection, which includes also drawings and specimens of protective apparatus, is open from 10 a.m. to 4 p.m. Officers desiring to read in the library can obtain permission on application to the Librarian.

The *Fellowship of Medicine* has arranged at the medical schools in London an emergency course for medical graduates of three months' duration, open to medical officers R.N., R.A.M.C., R.A.F., and Overseas contingents and of the United States and Allies. Particulars can be obtained on application to the secretary of the Fellowship, at the house of the Royal Society of Medicine, 1, Wimpole Street, W.1.

RÖNTGEN SOCIETY, Royal Society of Arts, 13, John Street, Strand, W.C.—Tuesday, 8.15 p.m., Dr. F. Hermann-Johnson: Protection in Diagnostic Work: The Effects of Scattered Rays and Secondary Rays. Demonstration by Lieutenant W. Makower of a Langmuir Exhaust Pump.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Social Evening. Discourse by Sir John Bland-Sutton on Gizzards and Counterfeit Gizzards. Section of Pathology: Tuesday, 8.30 p.m., Mr. J. A. Murray: (1) Staining Method for Bacteria in Tissues; (2) Acetabularis of the Lungs in *Mucosa rhesus*. Mr. C. A. R. Nichol and Professor S. G. Shatlock: Diffuse Emphysema of the Intestine. Section of Ophthalmology: Wednesday, 8.30 p.m., Dr. James Taylor: Changes in the Sella Turcica in association with Leber's Atrophy. Dr. W. Wallace: Fundus Changes Resulting from War Injuries. Mr. R. Foster Moore: Sympathetic Ophthalmitis with Fundus Changes. Section of Obstetrics and Gynaecology: Thursday, 8 p.m., Discussion: Reconstruction in the Teaching of Obstetrics and Gynaecology to Medical Students. Dr. Walter Griffith: Subjects to be Taught and Methods of Teaching Them. Dr. J. S. Fairbairn: Training of Student from Standpoint of Preventive Medicine. Dr. Lovell Drage: Teaching of Student from General Practitioner's Point of View. Dr. Lanthorn Smith will show "The Obstetric Helper." Section of Laryngology: Friday, 3.45 p.m., Cases; Meeting, 4.30 p.m.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 8TH, 1919.

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British Medical Association.

CURRENT NOTES.

County Council Elections.

IN its last annual report the Council of the British Medical Association urged upon Divisions and Branches the special importance at the present time of all possible steps being taken to secure adequate representation of the medical profession upon Government and municipal bodies in view of the reconstruction proposals known or likely to be in contemplation. The approaching election of county councils, which has been fixed to take place in March, affords an opportunity which should not be allowed to pass. The important duties in connexion with public health matters which are already imposed upon county councils are likely to be extended very considerably when the Ministry of Health comes into being. It is hoped, therefore, that every Division and Branch will take whatever steps it can to persuade suitable members of the medical profession to stand for election.

Memorials.

At the last quarterly meeting of the Council a special committee was appointed to consider the question of a suitable memorial to members of the Association who have fallen in the war. The committee will consist of the officers of the Association, with Mr. E. B. Turner and Dr. T. Jenner Verrall. At the same meeting it was resolved that a suitable tablet commemorating the services of the late Mr. Guy Elliston to the Association be erected in the church of Ipswich with which his family were connected. It was referred to the officers of the Association to determine the manner in which recognition of Mr. Elliston's services be made in the offices of the Association. It was further resolved that a permanent record be placed in the Council Room of the names of past officers of the Association.

East African Medical Service.

The Dominions Committee of the Association has been instructed by the Council to appoint a deputation to interview the Secretary of State for the Colonies, and urge upon him the immediate improvement of the terms and conditions of the medical service of the East African Protectorates. The Council has also agreed to the principle that action should be taken to secure the amalgamation of medical services of adjacent Crown Colonies or Protectorates wherever possible, and the establishment under suitable terms and conditions of a general medical service for the whole of the territories in Africa directly administered by the Colonial Office.

Aliens in the Dominions.

On the recommendation of the Dominions Committee the Council also considered the position of practitioners of enemy alien nationality in the Colonies. It was resolved that the Colonial Office be urged to take steps to ensure that such practitioners be only allowed to practise medicine in British Colonies on diplomas duly accepted and registered by the General Medical Council under the British Medical Acts.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:—Surgeon Captain W. G. Axford has been placed on the retired list with the rank Surgeon Rear Admiral. Surgeon Captains: C. S. Woodwright to Hong Kong Hospital, J. Shand to Plymouth Hospital, V. G. Thorpe, C.B.E., to the *Frigate* for R.N. Barracks. Surgeon Commanders: R. M. Richards to the *Europa*, E. Folliott to the *Powervin*, A. H. H. Vizard to the *Pisgah*, R. C. Munday, C.B., to R.M. Artillery, Eastney. Surgeon Lieutenants: J. P. Shorten to Haslar Hospital, G. D. Macintosh to the *New Zealand*, G. V. Hobbs to Haulbowline Hospital, H. B. Padwick, D.S.O., to R.M. Infirmary, Deal. Surg. on Lieutenants (temporary): W. J. McClintock to the *Superb*, F. A. O'Connor to the *Spenser*, J. McFarlane to the *China*, J. L. Pringle to R.N. Hospital, Gibraltar, A. C. McAllister, J. H. Bennett, and H. Shaw to the *Garth Castle*, J. V. Mainprize to the *Europa*, J. F. O'Grady to the *Britonart*, T. Norman to the *Achilles*, W. A. McKerrow to Dartmouth College, J. T. Macnab to Chatham Hospital. To be Surgeon Lieutenants: W. N. Anthony, P. L. Williams, C. T. Helsbam, E. K. Macdonald. To be Surgeon Lieutenant (temporary): G. R. Hull.

ARMY MEDICAL SERVICE.

Temporary Colonel C. C. Choyce relinquishes his commission, and retains the rank of Colonel.

Temporary Colonel H. A. Ballance (Major—temporary Lieut.-Colonel—R.A.M.C.T.F.) relinquishes his temporary commission on retiring, January 10th, 1919 (substituted for notification in the *London Gazette*, January 2nd, 1919).

Lieut.-Colonels from R.A.M.C. to be Colonels: Norman Fraichnie (temporary Colonel), C. B. Martin, A. G. Thompson, C.M.G., D.S.O. (temporary Colonel), J. B. Anderson, A. H. Waring, D.S.O., S. A. Archer (temporary Colonel), J. McD. McCarthy.

ROYAL ARMY MEDICAL CORPS.

To be Lieut.-Colonels: Majors (temporary Lieut.-Colonels) A. J. Hull, H. A. Davidson, D.S.O.; Majors (acting Lieut.-Colonels) R. F. Elery, H. A. Bransbury, D.S.O., J. F. Whelan, D.S.O., C. D. Myles, O.B.E., H. R. Bateman, D.S.O., S. B. Smith, D.S.O., M. W. Falkner, Majors R. L. Popham, J. H. Brunsell, D.S.O., W. M. B. Sparkes, D.S.O., R. McK. Skinner.

Major A. G. Cummins, M.C., and Captain C. M. Rigby are restored to the establishment.

Major E. P. Q. L'Estrange and Captain O. C. P. Cooke relinquish the acting rank of Lieut.-Colonel on reposting.

To be acting Lieut.-Colonels:—Whilst commanding troops on a hospital ship: Temporary Major G. W. Milne. Whilst in command of a medical unit: Majors W. C. Nimmo, R. F. M. Fewett, D.S.O.; Captain (acting Major) J. D. Roche; Captains O. W. McSheehy, D.S.O., E. Cadford; temporary Captain T. H. Martin (from September 7th to October 13th, 1918, inclusive).

Captain (acting Major) E. G. Gauntlett, D.S.O., R.A.M.C.T.F.), to be temporary Lieut.-Colonel whilst specially employed.

The following relinquish the acting rank of Major on reposting:—Captains: F. R. Laing, S. M. Hattersley. Temporary Captains: E. B. Clapp, R. B. Macle, E. G. C. Price, J. L. Menzies, M.C.

To be acting Majors:—Captains: R. A. Odium (from May 29th to December 14th, 1918), E. A. Strachan, R. W. Vint, D. H. C. McArthur, H. P. Hart, M.C., W. Foot, M.C. Temporary Captains: T. H. Oliver,

A. C. S. Coutts, D. C. McCabe-Dallas, J. L. Wilson, C. R. Gibson (from August 14th to October 22nd, 1918, inclusive), G. P. Armstrong (from August 14th to October 6th, 1918, inclusive), J. F. McG. Sloan, M.C., J. W. Robertson (from October 4th to 19th, 1918, inclusive), J. Parkinson, A. U. Millar (from October 20th to November 23rd, 1918), L. Crabb, J. M. Burnford, D. Fisher, J. N. Humphrey, M.C., J. L. Jackson, G. Jackson, T. Sturdy, W. H. Hardy, Lieutenant (temporary Captain) F. R. S. Shaw, M.C. Whilst specially employed: Captain A. E. B. Jones; temporary Captains E. Tawse, E. B. Barton.

The notification in the *London Gazette* of November 25th, 1918, regarding Captain Charles J. O'Reilly, M.C., is cancelled.

Captain (acting Major) W. B. Allen, V.C. M.C., from R.A.M.C. (T.F.), to be Captain, February 8th, 1919, but not to reckon for pay or allowances prior to December 1st, 1918, with precedence next below E. F. W. Grellier, and to retain his acting rank (substituted for notification in the *London Gazette*, December 19th, 1918).

Lieutenants (temporary Captains) to be Captains: W. J. Robertson, (acting Major) J. W. O'Brien, M.C., F. R. S. Shaw, M.C., (acting Major) C. Russell, M.C., R. Stowers, M.C., W. J. Knight, M.C., (acting Major) R. A. Mansell.

Temporary Lieutenants to be temporary Captains: J. Brown, J. J. Dowdall, G. W. Ronaldson, A. G. L. Smith.

Temporary honorary Lieutenant E. B. Fitzgerald to be temporary honorary Captain whilst serving with No. 22 General Hospital (Harvard Unit).

The following officers relinquish their commissions: Temporary Lieut. Colonel and retains the rank of Lieut. Colonel: A. J. Johnston. Temporary Lieut. Colonel A. W. Falconer, on reposting. Temporary Majors and retain the rank of Major: E. K. Martin, J. F. Cunningham, A. Neve. Temporary Captain (acting Lieut. Colonel) and retains the rank of Lieut. Colonel: P. Steele. Temporary Captains (acting Majors) and retain the rank of Major: J. W. Elliott, F. G. Collins, J. R. Craig, M.C., H. D. Smart, S. J. Rowntree, A. C. T. Woodward, E. Burstall, W. J. A. B. Wishart. Temporary Captains on account of ill health contracted on active service and retain the rank of Captain: W. A. Thompson, P. A. Sullivan. Temporary Captains on account of ill health and retain the rank of Captain: C. P. Symonds, L. F. Hirst, J. M. Lazenby. Temporary Captains and retain the rank of Captain: J. Gaff, S. C. W. Morris, C. L. Wanka, J. J. Smith, H. Madin, W. Craig, R. O. Lee, C. D. Moran, M.C., J. M. Anderson, D. C. Adam, J. D. Mercer, T. R. Evans, V. S. Partridge, A. S. L. Malcolm, C. McK. Craig, J. Young, W. Fairclough, E. Allan, D. Ross, W. J. Ashley, E. J. Fisher, P. MacFadyen, J. E. Hewetson, R. S. Woods, J. Bain, C. H. Harbison, J. Sullivan, N. Brady, V. E. B. decock, J. McKie, T. B. Williams, F. J. Morris, M.C., F. N. Stewart, D.S.O., L. J. Hood, O. Bruce, W. A. Young, D.S.O. (substituted for notification in the *London Gazette*, January 4th, 1919). R. Davidson, W. C. C. Kirkwood, A. I. Shephard-Walwyn, J. Sullivan, H. Snape, H. A. Lyth, D. Gen, H. C. Taylor, G. E. A. Mitchell, C. W. Windsor, W. S. Campbell, H. Y. Mansfield, H. J. Beddow, A. N. Cox, W. G. Attenborough, C. E. Hes, G. J. Mellon, A. L. Walker, W. J. Crow, D. M. Callender, G. W. Stanley, M.C., D. Kennedy, D. McKinnon, R. J. W. McKane, B. P. Campbell, H. M. L. Crawford, E. Evans, I. Flack, J. M. Abern, D. R. Acheson, W. A. Dewhurst, E. A. Price, F. A. Juler, W. S. Garden, A. H. Laird, D. M. Roohan, H. E. Heapy, C. C. Austen, A. V. Royall, W. E. James, J. E. Mitchell, L. C. Newton, F. D. Simpson, P. E. H. Patey, J. D. Marshall, D.S.O., H. R. Cran, A. W. Ewing, L. L. Winterbottom, A. E. Jeapington, L. B. C. Trotter, J. P. Carroll, N. Kennedy, J. F. Weston, B. G. Bark, J. Ritchie, H. G. Rashleigh, A. H. Morley, G. Garland, and (acting Majors) D. W. Roy, J. A. Jones, J. L. Rankine, A. J. M. Wright, A. L. Saunders, W. Mason. Temporary Captain: P. T. Spencer-Phillips. Temporary honorary Captains and retain the honorary rank of Captain: S. A. Henry on ceasing to be employed with St. John Ambulance Brigade Hospital (substituted for notification in the *London Gazette*, December 20th, 1918). A. D. Brunwin on ceasing to be employed with St. John Ambulance Brigade Hospital. Temporary Lieutenants and retain the rank of Lieutenant: R. P. Parker, C. L. Lapper, A. F. Catwell, W. E. Jones, J. W. Stephen, J. E. Boon, A. Ashkeny, C. S. Macaskie, F. J. Gordon, M. M. Mun en, W. Knapp, A. S. L. Bignart. On ceasing to serve with No. 22 General Hospital (Harvard Unit) and retain the honorary rank of Temporary honorary Lieut. Colonel: H. Cabot. Temporary honorary Majors: G. C. Shatuek, E. G. Crabtree, B. H. Alton, V. H. Kaza Jian. Temporary honorary Captains: E. Harding, F. Brigham, P. Gustafson, D. B. Ford, E. S. Welles, E. S. Fish, F. Packard, C. N. Lewis, W. S. Ramsey, L. M. Van Stone, B. M. Dodson, D. J. Knowlton, F. L. Johnson, A. Gregg, F. R. Fitzgerald, H. W. Woodward. Temporary honorary Lieutenant M. M. Stephens.

ROYAL AIR FORCE. MEDICAL BRANCH.

Colonel M. G. H. Fell, C.M.G., to be Director of Medical Services, and to be acting Major-General whilst so employed, vice Major-General H. C. Munday, C.B.

Major (acting Lieut. Colonel) A. H. Cheate relinquishes his commission on ceasing to be employed, and is permitted to retain the rank of Lieut. Colonel.

The initials of Captain R. A. Playne, D.S.O., are as now described, and not as stated in the *London Gazette* of November 25th, 1918.

C. F. Eninson is granted a temporary commission as Lieutenant.

SPECIAL RESERVE OF OFFICERS. ROYAL ARMY MEDICAL CORPS.

Captain M. R. Taylor, D.S.O., relinquishes the acting rank of Lieut. Colonel and reverts to the acting rank of Major with pay and allowances of his substantive rank.

Captain (acting Major) R. A. Greenwood, M.C., to be acting Lieut. Colonel from October 16th to November 12th, 1918, when he reverts to the acting rank of Major.

Captains relinquish the acting rank of Major on reposting: D. Mackie, M.C., W. A. Miller, D.S.O., M.C., J. Walker, M.C., J. Adams.

Captains to be acting Majors: H. W. H. Holmes, P. Walsh, G. Young, M.C., C. H. Brennan, M.C., R. R. G. Atkins, M.C., A. R. Dale, M.C., J. R. Croft, H. R. Friedlander, E. J. Bradley, H. H. Brown.

Captains relinquish their commissions on account of ill health contracted on active service and retain the rank of Captain: M. A. O'Callaghan, R. J. Smith, W. C. C. Easton.

Lieutenant J. R. Dingley relinquishes his commission on account of ill health, and retains the rank of Lieutenant.

GENERAL RESERVE OF OFFICERS. ROYAL ARMY MEDICAL CORPS.

Lieut. Colonel F. J. Greig is granted the rank of Colonel on ceasing to be employed.

OVERSEAS CONTINGENTS. CANADIAN ARMY MEDICAL CORPS.

Temporary Colonel H. A. Bruce ceases to be seconded for duty with the War Office.

To be Deputy Assistant Directors of Medical Services: Temporary Captain R. M. Gossline, D.S.O., C.A.M.C. (February 23rd, 1916); temporary Major E. L. Warner, C.A.M.C. (August 9th, 1918); temporary Captain H. C. Hall, C.A.M.C., and to be acting Major whilst so employed (October 14th, 1918).

Temporary Captains to be temporary Majors: S. L. Walker, F. W. Manning.

Temporary Captains to be acting Majors: T. W. Sutherland while employed at No. 8 Canadian Stationary Hospital; D. A. Clark while employed at No. 9 Canadian Stationary Hospital; A. Collins while employed at Canadian Convalescent Hospital, Bear Wood.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

To be acting Lieut. Colonels whilst specially employed, with precedence from dates indicated: Majors J. F. Crombie, D.S.O. (December 5th, 1916), W. G. Sutcliffe, O.B.E. (April 8th, 1916), W. Archibald (July 1st, 1916), M. B. Ray, D.S.O. (November 20th, 1915), G. H. L. Himmerton, C.M.G. (September 27th, 1916), W. F. Rose, D.S.O. (March 23rd, 1916), Captain G. K. Maurice, M.C. (November 6th, 1916).

The following relinquish their acting rank on ceasing to be specially employed: Captains (acting Majors) M. T. Ascough, M.C., J. S. McConnachie, M.C., T. E. A. Carr, G. B. Gill.

Captain (acting Major) E. A. Houchin is granted precedence as acting Major from March 9th, 1915.

2nd London Sanitary Company.—Captain (acting Major) J. H. Wood, M.C., relinquishes his acting rank on vacating appointment of Deputy Assistant Director of Medical Services.

4th Northern General Hospital.—Captain H. B. W. Smith is restored to the establishment.

Attached to Units other than Medical Units.—Surgeon-Major H. Waite from the Northern Command Signal Company to be Major with precedence from February 4th, 1909. (September 5th, 1914). Substituted for notification in the *London Gazette* of September 4th, 1914.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Captains: Captains F. H. Davies (North Midland Mounted Brigade Field Ambulance), W. R. Pierce (2nd West Lancs Field Ambulance), M. W. K. Bird (4th London Field Ambulance).

VOLUNTEER FORCE.

Suffolk R.A.M.C. (V).—Temporary Lieut. Colonel W. Keates (Major, honorary Lieut. Colonel, ret. pay, E. of O.) relinquishes his commission in the Volunteer Force.

APPOINTMENTS.

ANKLISARIA, K. A., L.M.S. Bombay, Medical Officer St. John's Road Institution, Parish of St. Mary, Islington.

BRAZIL, W. H., M.D. Lond., D.P.H. Camb., B.Sc. Manch., Honorary Ophthalmic Surgeon to Stratford-upon-Avon General Hospital.

HOLMES, Geoffrey, M.B., B.Ch. Cantab., Honorary Physician to the Royal Bath Hospital and Rawson Convalescent Home, Harrogate.

REES, M. W., L.R.C.P. and S. Edin., L.R.F.P.S. Glasg., District Medical Officer, Llanfyllin Union.

RIGGALL, Robert M., M.B.C.S. Eng., L.R.C.P. Lond. and Edin., Surgeon Lieutenant Commander R.N., Medical Officer to the Clinic of Functional Nerve Disorders under the Ministry of Pensions, Lancaster Gate, W.

DISTRICT MEDICAL OFFICERS.—C. T. Dornford, L.R.C.P.E., M.R.C.S. Eng. (Fyde Union), H. R. Hancock, M.R.C.S. Eng., L.R.C.P.I. (Wolverhampton Union), G. B. Hull, M.A.H. Dubl. (Newport (Mon.) Union), T. D. Manning, M.B., B.S. Lond. (Weymouth Union).

DIARY FOR THE WEEK.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8.30 p.m., Intrinsic Cancer of the Larynx: Operation by Laryngoscopy and its Results (sequel to a paper read before the Society on February 12th, 1912), by Sir St. Clair Thomson, M.D.

MEDICO-LEGAL SOCIETY, 11, Chandos Street, W.1.—Tuesday, 8 p.m., Council meeting, 8.30 p.m., Dr. Spilsbury: Criminal Abortion. Dr. H. C. Ross: Combined Test for Albumin and Sugar in Urine.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.—Friday, 5 p.m., Hunterian Oration, by Sir Anthony Bowlby, K.C.M.G., K.C.V.O.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Social Evening, Sir Arbuthnot Lane: Stasis. Section of Neurology: Thursday, 8 p.m., Cases. Section of Epidemiology and State Medicine: Friday, 5.30 p.m., Dr. John Brownlee: Investigation into the Periodicity of Epidemics of Measles in the Large Towns of Great Britain and Ireland. Members intending to dine are requested to send their names to Captain Greenwood, 7, Northumberland Street, W.C.2, not later than February 12th.

EMERGENCY POST-GRADUATE COURSE.

NATIONAL HOSPITAL FOR PARALYSED AND EPILEPTIC, Queen Square, W.C.—Monday, 2 p.m., Medical Out-patients, Dr. Collier. 3.30 p.m., Lecture, Dr. Hinds Howell: Anatomy and Physiology of Nervous System. Tuesday, 2 p.m., Medical Out-patients, Dr. Grainger Stewart. 3.30 p.m., Ward Cases, Dr. Risien Russell. Wednesday, 2 p.m., Lecture, Mr. Sargent: Surgery of Nervous System. 3.30 p.m., Lecture, Dr. Gordon Holmes: Methods of Examination of Cases. Thursday, 2 p.m., Medical Out-patients, Dr. Farquhar Buzzard. 3.30 p.m., Lecture, Dr. Hinds Howell: Anatomy and Physiology of Nervous System. Friday, 2 p.m., Medical Out-patients, Dr. Gordon Holmes. 3.30 p.m., Ward Cases, Dr. Tooth.

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 15TH, 1919.

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British Medical Association.

THE INDIAN MEDICAL SERVICE.

STATEMENT BY THE SECRETARY OF STATE AS TO THE FUTURE OF THE SERVICE.

THE deputation from the British Medical Association waited upon the Secretary of State for India, the Right Hon. E. S. Montagu, M.P., at the India Office on February 10th to hear a statement from him on the future of the Indian Medical Service and the action taken in furtherance of the policy foreshadowed by him on receiving a similar deputation on June 27th, 1918 (BRITISH MEDICAL JOURNAL, SUPPLEMENT, July 6th, 1918, p. 1). The deputation was introduced by Sir Clifford Allbutt, K.C.B. (President of the Association), and included Lieut.-Colonel R. H. Elliot, I.M.S. (ret.), Chairman of the Naval and Military Committee of the Association, Surgeon-General P. H. Benson, I.M.S. (ret.), Dr. Dawson Williams (Editor of the BRITISH MEDICAL JOURNAL), and Dr. James Neal (Deputy Medical Secretary of the British Medical Association). The Secretary of State was accompanied by Sir Thomas Holderness, G.C.B., Lieut.-General Sir H. V. Cox, K.C.B. (Secretary, Military Department), Sir Havelock Charles, G.C.V.O., Sir Arnold White, Sir Murray Hammick, K.C.S.I., Sir James Brunnate, K.C.S.I., and Mr. B. N. Basu.

SIR CLIFFORD ALLBUTT thanked the Secretary of State very warmly for his courtesy in receiving the deputation—he was afraid at great personal inconvenience to himself. The personnel of the deputation was, he said, the same as before, except that Sir Berkeley Moynihan, who attended on the previous occasion, was unable to be present that day.

THE SECRETARY OF STATE FOR INDIA.

MR. MONTAGU said: Sir Clifford Allbutt and Gentlemen, my object in asking you to come here this afternoon was this: you were good enough to see me last June, as soon after my return from India as it was possible to arrange, for the purpose of laying before me your views as to the future of the Indian Medical Service; I gave you then as clear an indication of my own personal views as I could, and I promised to lay before the Government of India the views you had expressed and the answer I had given you that afternoon. In accordance with my promise, we sent to India the proceedings of your deputation and a covering dispatch which was approved by my Council, and I now want to tell you the results, so far as they have gone, of what we discussed together last year.

YOUR purpose in coming to see me last year was, I think, to represent to me the grievances—or shall I say the desire for an improvement in the position?—of those of your profession who were serving the Government in India. My desire in meeting you was to ensure a concerted Indian Medical Service in order that India might have the benefit of the medical assistance it required when the war was over. Now the war has, we are glad to say, come to an end, not too soon by any means for the well-

being of humanity generally, but at any rate so soon as to leave us with our deliberations and consultations incomplete; and I want to ask you to-day, as representing the British Medical Association, to listen to what has been done and to accept the description I am going to give you of what is being done, in the hope that you will see your way to assure us of your co-operation in obtaining the services of the doctors we require in the future for India. I think I can produce evidence to show you at least that we—the Secretary of State and the Council of India on the one hand, and the Government of India on the other—are determined to set right what is wrong, and to make our arrangements in such a way that the service will have, as I think, better prospects—or certainly not worse prospects—than it ever had in the past.

Grade Pay: Increase of 33½ per Cent.

NOW, as to the first point that was raised, we have come to a decision: that is, pay. I do not think I can do better than read to you an announcement which I propose to make to the press, and which will convey to the world the decision that we have come to in regard to this matter:

THE Secretary of State for India in Council has sanctioned, with effect from December 1st, 1918, the introduction of improvements in the rates of pay for permanent officers of the Indian Medical Service, on both the military and civil sides, approximating in the aggregate to an increase of 33½ per cent. on the present rates [noted below] of military grade pay. The detailed rates of pay to give effect to this decision are being worked out in India and will be announced as soon as possible. The object of this measure being to attract to the service European candidates with the highest professional qualifications, the question whether Indian candidates entering the permanent service after December 1st, 1918, shall be eligible for increased rates of pay, and, if so, to what extent and under what conditions, has been reserved for future consideration. All Indian officers already in the permanent service on December 1st, 1918, will be eligible for the increased rates of pay.

PRESENT RATES OF GRADE PAY.

Rank.	Grade Pay.
Lieutenant	Rs.350
Captain	400
.. after 5 years' service	450
.. after 7 years' service	500
.. after 10 years' service	550
Major	650
.. after 3 years' service as Major	750
Lieut.-Colonel	900
.. specially selected for increased pay	1,000

I think I am right in saying that it was Sir Pardee Lusk who on one occasion recommended as meeting the necessities of the case this increase of 33½ per cent., which we now propose to grant with retrospective effect from December 1st last. So much for pay.

Medical Research.

WITH regard to medical research in India—to which Sir Clifford Allbutt in particular addressed my attention the last time we met—and study leave, when I sent the dispatch to which I have referred to the Government of India I drew their special attention to the importance of continuing to provide for the Indian Medical Service officer a career of varied opportunities for the acquirement

of professional and scientific knowledge, and I laid down three conditions as necessary in that connexion. We wanted, I thought, as liberal a provision as may be possible of institutes and research laboratories throughout the country; we wanted the attachment to those institutions of appointments carrying emoluments sufficiently attractive to make it worth the while of officers with requisite aptitudes to devote their careers—or at any rate a substantial portion of their careers—to research; and the third point was the provision of greater facilities for taking study leave. As I am sure you know, there is already in India an association, the Indian Research Fund Association charged with initiating research and examining schemes for research, mainly on the causation, spread, and prevention of communicable disease. The Advisory Board of this Association consists of the Director-General of the Indian Medical Service, the Sanitary Commissioner of the Government of India, the Director of the Central Research Institute at Kasauli, the Director of the Bombay Bacteriological Laboratory, and the Assistant Director of the Indian Medical Service for Sanitation. They have at their disposal at present about £37,000 a year. The Association has the power to engage and employ officers for its investigations from and in any part of the world. The personnel that is now engaged on their work is small, owing to the war, but it seems to me that such an association would be a valuable nucleus for the post-war activities which we desire in research. Last December a conference was held at Delhi of sanitary and bacteriological experts, and the member of the Advisory Council in charge of education, under which portfolio, according to the present arrangements, these matters come, presided. They arrived at important and, as I think, satisfactory conclusions, of which I have received an advance copy, but which have not yet been forwarded to me by the Government of India. The fact that it met and that it has considered the extension of activity in these matters is, I think, evidence that there is adequate realization in India of the need for increased activity in research, and as soon as I get—it will not be very long now—the recommendations of the Government of India upon this conference I will communicate, for your views, the results to your Association. So much for research.

Leave Reserve.

I now come to the third subject—leave and study leave. As I think you will remember, last summer when we met I told you that it seemed to me that the proper organization of adequate study leave depended upon the size of the cadre of your service in order that you might have a sufficient reserve to set men free to take leave, and I told you that it seemed to me impossible to take up that matter—the enlargement of the reserve—in the middle of the war. I can only say now that the war is ended you may rest assured that the leave reserve will be increased until it is proved to be large enough to secure adequate leave for the service generally. The Government of India have already arranged to retain members of the temporary Indian Medical Service after the war in order to help permanent officers to obtain their much-needed leave. This, of course, is only a palliative; it takes advantage of the presence of these temporary officers; but it is, I think, an indication that steps are being taken to do what we can. As you will probably have seen in the press, we have already announced an improvement in the sterling rates of leave pay from January 1st, 1919. I do not know that I have got with me a copy of the announcement, but the improvement in leave pay was, I think, substantial.

Private Practice.

There are just two other points that I would mention to you, because we discussed them last year. The first is the anxiety that you felt—that is felt generally throughout the services you came here to represent—about facilities for private practice. Nothing that has happened since has altered my views on the subject. It seems to me that facilities for private practice, both to ensure adequate opportunity for the experience which is necessary to the practice of your great profession and to ensure variety in that practice, are necessary to the Indian Medical Service. As I said then, facilities for private practice must, it seems to me, be under the control of the Government, in order that they may see there is no risk of an accusation at any rate being levelled that it encroaches on public duty.

Subject to that reservation, I am of opinion that it is to the public interest that the service should benefit to the fullest extent by the opportunities of private practice, and I want to assure you that there is not any prospect that these facilities for private practice which the services have enjoyed in the past will be diminished.

Relations of Director-General and Surgeons-General to Governments.

Then there is the point of the relations of the Director-General and the Surgeons-General to the Government of India and the local Governments. Here again, as I think I said last year, this is a question of the organization of the service which it is difficult to work out in London, and which, I think, must be worked out locally. The views which your Association expressed to me last summer were communicated to the Government of India for their consideration. I can only assure you that any measures to be taken thereon to ensure smooth and efficient working which may be brought to my notice will have my support, and in particular I am in agreement with you on the point that the Surgeons-General should have direct access to the heads of the various Governments. As I have said before, this is a problem of organization.

Reorganization of I.M.S.

I think we agreed last summer that the Indian Medical Service requires reorganization, and in particular that its relationship to the Royal Army Medical Corps requires investigation. That investigation is not complete, but the Government of India have appointed a representative committee, which met early last month, to examine and report on the reorganization of the medical service in India. The recommendations of this committee, with the views of the Government of India upon it, will be submitted to me, I am assured, at as early a date as possible.

Promises Fulfilled.

Well, gentlemen, that is really all I have to tell you. I claim, as I am sure you will not be surprised to hear, that the promises that were made to you last summer have been kept, and that the subject has been pursued with the common determination in the two parts of the Government, here and in India, to obtain conditions adequate to attract to India the medical service which it needs. It seems to me that what we have already done should be an earnest that the service in the future will not offer any diminished prospects; on the contrary, there is every likelihood that, with the development of research and of public health services which has been necessitated by the lessons of the war, by the recent particularly calamitous visitation of plague, and by the recent even more calamitous visitation of influenza, the scientific attractions of service in India will be made greater than they have been in the past.

These plans for reorganization, for the improvement of research, for increasing the reserve of the service, have been undertaken, and this very substantial increase in pay and in leave pay has been granted. The Indian Medical Service, it seems to me, cannot play a worthy part in the development of medical science and medical work in India unless it is able to attract the very best products of the medical schools in this country. I therefore thought it wise to ask you to come here to day and to tell you myself what had been done and what was being done, because I thought I could produce to you satisfactory results of the representations that you made last year, and because I thought I had grounds, with confidence, to ask you, as the representatives of your great and influential Association, to assist us in recruiting the medical officers whose services we so much need.

REPLIES.

Sir CLIFFORD ALBETT said: So far as I am able, at comparatively short notice, to express an opinion, which must be quite informal, I can only say that I am sure we have heard what you have said to us with very great interest, and, I think I may venture to say, with very considerable satisfaction. I do not know how far you would be willing to hear any remarks or answer any questions. (Mr. Montagu indicated his willingness.) Then I will ask Lieut. Colonel Elliot, the Chairman of the Naval and Military Committee of the Association, to mention two or three points.

Lieut.-Colonel ELLIOT, I.M.S. (ret.), who said that he was under a disadvantage because he had not known beforehand what was the statement of the Secretary of State would take, spoke as follows: We have heard your statement, Sir, with the profoundest satisfaction, and we desire to convey the thanks of the British Medical Association to you personally for the way in which you have handled these questions, so momentous, not only to our own service, but to India generally. With regard to the addition, now sanctioned, of 33½ per cent. to the rates of pay—that is, military grade pay—I need only say we welcome it most gratefully. As to the station hospital system, the Association believes that its introduction will conduce to efficiency. It observes, however, that the new rates of pay for officers of the Indian Medical Service in military employment, which came into force on December 1st, 1918, are, for officers above the rank of captain, lower than before. In the case of these officers, therefore, the increase will not amount to 33½ per cent. on their former pay. [Colonel Elliot handed in a copy of Army Instruction (India) 1343.] The Association asks for the reconsideration of this. We have heard from a large number of officers, and we have received figures, which we will be glad to place at your disposal, showing that in practical working these officers are really worse off under the new scale than before.

THE SECRETARY OF STATE: Of course the grading will all have to be reconsidered as the result of this announcement, will it not?

SIR HAVELOCK CHARLES: Yes.

THE SECRETARY OF STATE: And whether they were or were not better off under this scale, they will be better off now with the 33½ per cent. on to the grade pay.

Lieut.-Colonel ELLIOT, continuing, said: We thank you for your extremely sympathetic attitude on the question of private practice; the views that you have put forward are our views. The Association would ask that there shall be no hospital regulations in India which are not in accord with the spirit of this decision, and that if there are hospital regulations which are not in accord with it they shall be modified where necessary. We refer, Sir, to the fact that our government have laid down a scale of fees to be levied from paying patients in their hospitals for operations, and have swept the fees into their own exchequer. May I add, Sir, that such regulations do not affect only the officers of the Indian Medical Service, but all members of the medical profession in the district. If patients can come into a hospital to be operated upon there, and the fees can then be credited, not to the man who does the operation, but to the Government, it is obviously against the interests of private practice.

We have heard what you have said with regard to the cadre of the service with great satisfaction, and we welcome also your statement as to the reorganization of the service. We quite understand that it is not possible to press for anything more definite at the present moment and are content to leave it in your hands.

With regard to medical research, the Association trusts that in the organizations for research the Government of India will take the measures necessary to attract skilled workers, and will economize their time and energy by providing an adequate staff of laboratory assistants; much can be done in that way to save the time of the principal workers.

The opinion of the Association as to the relation in which the Director-General I.M.S. should stand to the Government of India, and the Surgeon-General of a province to the Provincial Government, has been stated in memorandums submitted in 1917. In its fixed resolve to persevere in its determination to obtain the application of the principle involved, the Association is encouraged by the fact that that principle has been applied by your predecessor and yourself by the establishment of the post of Medical Adviser to the Secretary of State to be the head of the department of the India Office which advises the Secretary of State directly on all medical and sanitary matters. The Association is convinced that the adoption of a parallel policy in India is of fundamental importance to the people of India. Until it is followed medical and sanitary work must continue to be hampered, and the highest standard of efficiency will remain unattainable. The Association would add, though from the nature of the case it can hardly be necessary, that the removal of this

defect in the machinery of government in India will remove also many of the causes of unrest and discontent in the Indian Medical Service. The Association thanks you for having communicated its recommendation on this head to the Government of India.

In conclusion, the Association desires most cordially to express its high appreciation of the sympathetic spirit in which you have approached this subject, and fully realizes the time and care you have given to the investigation of the conditions, at home and in India, on which the efficiency and happiness of the Indian Medical Service depend. It thanks you personally for the clear expression of your own views on the various points it has brought to your notice. It has the fullest confidence that this sympathetic attitude on your part will continue. And I think I may, on behalf of the Association, promise you that we will do what we can to support you in getting officers for the service.

THE SECRETARY OF STATE: We have discharged the duties for which we came here this afternoon. I am much obliged to you for your kind promise of help, and I am very glad we have been able to travel this road so far together.

The deputation then withdrew.

CURRENT NOTES.

Constitution of Insurance Acts Committee.

The Council at its meeting on January 22nd decided to refer to the Organization Committee the preparation of such alterations in the Schedule to the By-laws as are necessary to provide that the direct representatives of Local Medical Committees and Panel Committees need not necessarily be members of the Association.

Superannuation of Medical Officers to Local Authorities.

In continuance of its policy of urging upon the Government the necessity for the superannuation of medical officers of local authorities, the British Medical Association has forwarded to the recently appointed Departmental Committee on the Superannuation of Persons Employed by Local Authorities a memorandum urging the early inauguration of a national scheme of superannuation for such medical officers. It is hoped to press further the points of the Association's memorandum upon the Departmental Committee by oral evidence to be given by representatives of the Association. It will be remembered that the present Prime Minister (who was then Chancellor of the Exchequer) agreed in principle with the influential deputation organized by the Association which waited upon him on June 11th, 1914, that it was very important for medical officers of health to have the benefit of a superannuation scheme both from the point of view of the community in general and of the officers themselves.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: J. Boyan, to the *President*, additional, for demobilization duties at Recruiting Office, Scotland Yard (temporary); P. T. Suckiffe, to the *President*, additional, for Medical Department; H. J. Chuter, to the *Indus*; S. Roach, to the *Defiance*; F. P. McNevin, to the *Tiger*. Surgeon Lieutenant Commanders: A. B. Marsh, to the *Centaur*; W. H. Cummings, to the *Swamps* (temporary); J. A. M. Alcock, to the *Aryogant* (temporary); F. C. Wood, to the *Saulpiper*; J. S. McGrath, to the *Gibraltar*; G. D. Muir to the *Englet*; J. H. Ewen, to the *Kent*; E. P. L. Hughes, to the *Pekin*. Surgeon Lieutenant W. H. Kay to the *Severn*. Surgeon Lieutenants (temporary): E. J. Todd, to the *Huleyon*, additional, for Lowestoft Naval Base; M. McKerrow to Portland Hospital; D. W. Warren, to the *Healy*; W. W. K. Brown, to the *Champion*; F. N. Parsons, to Haslar Hospital. To be Surgeon Lieutenants (temporary): C. F. McLean, A. E. Ward, E. C. W. Cook, R. H. Clarke.

ARMY MEDICAL SERVICE. ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel M. H. G. Fell, C.M.G., is seconded for service with the R.A.F.

Temporary Major W. B. Edwards relinquishes his commission on appointment under the Ministry of National Service, October 17th, 1917 and is granted the rank of Lieut.-Colonel. (Substituted for notification in the *London Gazette*, January 26th, 1918.)

Temporary Captain S. S. Dun to be acting Major whilst in command of troops on a hospital ship, January 14th, 1919. (Substituted for notification in the *London Gazette*, January 24th, 1919.)

Temporary Captains to be acting Majors whilst specially employed: S. A. O. en, H. V. A. Gatchell.

Temporary Lieutenants to be temporary Captains: C. H. Cox, J. V. McNally, G. G. Butler, G. G. Robertson, A. R. Fuller, A. Binning, W. M. McFarland.

Officers relinquish their commissions:—Temporary Major (acting Lieut.-Colonel), and retains the rank of Lieut.-Colonel E. A. Charrier. Temporary Majors and retain the rank of Major: H. A. Molloy, D.S.O.,

1st Western General Hospital.—Captain (Brevet Major) R. E. Kelly is restored to the establishment.
2nd Western General Hospital.—Major (acting Lieut.-Colonel) E. N. Cunniffe relinquishes his acting rank on ceasing to be specially employed. Major A. Wilson to be acting Lieut.-Colonel whilst specially employed. Major A. H. Griffith relinquishes his commission on account of ill health and retains the rank of Major. Captain G. Wright is restored to the establishment.

TERRITORIAL FORCE RESERVE.
ROYAL ARMY MEDICAL CORPS.
Major J. M. Gover, D.S.O., 1st Northern Field Ambulance to be Major, December 19th, 1915 (substituted for notification in the *London Gazette*, January 13th, 1916).
To be Captains: Captains N. Gellie, 2nd London Sanitary Company (substituted for notification in the *London Gazette*, January 23rd, 1916); W. A. Robertson, attached to Units other than Medical Units (substituted for notification in the *London Gazette*, December 30th, 1915); W. Seadon, 3rd West Riding Field Ambulance (substituted for notification in the *London Gazette*, January 14th, 1916); H. C. Adams, O.B.E., 2nd Wessex Field Ambulance, December 14th, 1915 (substituted for notification in the *London Gazette*, December 31st, 1915); C. S. Frazer, D.S.O., 1st London Field Ambulance, December 19th, 1915 (substituted for notification in the *London Gazette*, January 10th, 1916); J. H. Hunter, M.C., 3rd Highland Field Ambulance, November 30th, 1915 (substituted for notification in the *London Gazette*, December 30th, 1915).

VOLUNTEER FORCE.
Bedfordshire R.A.M.C.(V).—Temporary Lieutenant H. N. Edwards resigns his commission.

ROYAL AIR FORCE.
MEDICAL BRANCH.
Lieut.-Colonel J. L. Birley to be graded for pay as Lieut.-Colonel (Grade A).
Major A. V. J. Richardson to be acting Lieut.-Colonel while employed as Lieut.-Colonel.
Majors to be graded for pay as Majors (Grade A): R. R. Fasson, E. M. W. Horn, A. H. Hogarth, A. W. Fredell, A. V. J. Richards, n.
Captains (acting Majors) to be graded for pay as Majors (Grade A): A. P. Bowdler, H. A. Treasgold.
Captains to be graded for pay as Captains (Grade A): H. C. Bazett, M.C., K. Biggs, D. Cameron, W. Darling, M.C., C. C. Fitzgerald, M.C., O. Gleeson, E. N. H. Gray, J. P. I. Hart, J. C. Hall, H. R. B. Hull, J. Lawson, J. H. Owen, D'Arcy Power, M.C., A. E. Panter, F. P. Punch, F. J. P. Saunders, A. R. Sharrod, J. L. Wadell.
Captains to be graded for pay as Captains (Grade B, Rate D): A. A. Atkinson, W. H. H. Bennett, R. E. Bell, H. S. Baker, R. D. Goldie, J. J. C. Hamilton, F. C. Kempson, J. M. Kirkness, A. MacLennan, J. A. Parsons, F. Roberts, C. P. C. Sargent, A. Scott-Turner, C. J. G. Taylor, C. Webb, N. R. Williamson.
Captain H. C. Bazett, M.C., R.A.M.C.(S.R.), is transferred to the unemployed list.
Granted temporary commissions:—As Captain: A. E. P. Parker. As Lieutenants: T. E. Roberts, R. D. Jones.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Major H. G. Smeeth to be acting Lieut.-Colonel whilst specially employed.

Captain (acting Lieut.-Colonel) W. H. L. McCarthy relinquishes his commission on account of ill health caused by wounds, and retains the rank of Lieut.-Colonel.

Captain G. R. Bruce relinquishes the temporary rank of Captain on ceasing to be specially employed.

Captain B. Mountain relinquishes his commission on account of ill health, and retains the rank of Captain.

The following relinquish their commissions on account of ill health contracted on active service: Captain C. Johnson, and retains the rank of Captain; Lieutenant N. B. Thomas, and retains the rank of Lieutenant.

Lieutenants to be Captains: W. A. Fraser, M.C., M. O. Simpson, J. F. Twort, W. M. Kerr, W. H. Wallace, A. H. Morris, D. F. Pantou, T. G. James, W. G. F. Owen-Morris.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Majors to be acting Lieut.-Colonels: G. Musson, while employed as chief of the medical service at a Canadian General Hospital, G. H. R. Gibson, D.S.O., while employed as O.C. a Canadian convalescent hospital.

Temporary Major G. G. Greer, M.C., relinquishes his appointment as Deputy Assistant Director of Medical Services.

Temporary Captain J. C. Maynard to be Deputy Assistant Director of Medical Services and to be acting Major whilst so employed.

Temporary Captains K. A. MacKenzie and F. B. McIntosh to be acting Majors whilst employed at No. 12 Canadian General Hospital.

BRITISH WEST INDIES REGIMENT.

Temporary Surgeon Lieutenant A. C. Kirtton to be temporary Surgeon Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel E. W. Higgs to be Assistant Director of Medical Services and to be acting Colonel whilst so employed.

To be acting Lieut.-Colonels whilst specially employed:—Majors: A. A. Martin, A. J. Riddett, Captain (acting Major) H. G. G. MacKenzie, D.S.O.

Major H. D'A. Blumberg, O.B.E., relinquishes his commission on account of ill health contracted on active service and retains his rank with permission to wear the prescribed uniform.

Captain (acting Major) O. L. Appleton to be Major.

Captain (temporary Major) D. W. C. Jones relinquishes his temporary rank and is seconded whilst holding a temporary commission in the Army Medical Service, October 7th, 1915 (substituted for notification in the *London Gazette*, October 31st, 1915).

Captain L. T. Whelan, M.C., to be Deputy Assistant Director of Medical Services and to be acting Major whilst so employed.

Captain (acting Major) E. G. Gauntlett, D.S.O., relinquishes his acting rank and is seconded whilst holding a temporary commission in the R.A.M.C.

To be acting Majors whilst specially employed:—Captains: L. H. Wootton, M.C., C. Nyhan, E. J. Beane, R. J. Chapman, J. A. Bell, M.C.
Captain W. S. McDune relinquishes his commission on account of ill health, and retains the rank of Captain.

The following relinquish their acting rank on ceasing to be specially employed: Captains (acting Majors) A. A. Hingston, T. S. P. Parkinson.

1st Eastern General Hospital.—Major (acting Lieut.-Colonel) H. A. Bellance, C.B., relinquishes his acting rank, and is restored to the establishment, January 10th, 1916 (substituted for notification in the *London Gazette*, January 4th, 1916); Captain (acting Major) W. B. Marshall relinquishes his acting rank on ceasing to be specially employed.

1st London Sanitary Company.—Captain W. N. W. Kennedy to be acting Major whilst holding appointment as Deputy Assistant Director of Medical Services. Lieutenant F. G. Caesar to be Captain.

2nd Scottish General Hospital.—Captain (acting Major) W. J. Stuart relinquishes his acting rank on ceasing to be specially employed, and remains seconded.

3rd Scottish General Hospital.—Captain A. W. Harrington is restored to the establishment.

1st Southern General Hospital.—Captain J. W. Stretton is seconded for service overseas.

5th Southern General Hospital.—Captain (acting Major) P. H. Green relinquishes his acting rank on ceasing to be specially employed, and remains seconded.

1st Western General Hospital.—Captain (Brevet Major) R. E. Kelly is restored to the establishment.

2nd Western General Hospital.—Major (acting Lieut.-Colonel) E. N. Cunniffe relinquishes his acting rank on ceasing to be specially employed. Major A. Wilson to be acting Lieut.-Colonel whilst specially employed. Major A. H. Griffith relinquishes his commission on account of ill health and retains the rank of Major. Captain G. Wright is restored to the establishment.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Major J. M. Gover, D.S.O., 1st Northern Field Ambulance to be Major, December 19th, 1915 (substituted for notification in the *London Gazette*, January 13th, 1916).

To be Captains: Captains N. Gellie, 2nd London Sanitary Company (substituted for notification in the *London Gazette*, January 23rd, 1916); W. A. Robertson, attached to Units other than Medical Units (substituted for notification in the *London Gazette*, December 30th, 1915); W. Seadon, 3rd West Riding Field Ambulance (substituted for notification in the *London Gazette*, January 14th, 1916); H. C. Adams, O.B.E., 2nd Wessex Field Ambulance, December 14th, 1915 (substituted for notification in the *London Gazette*, December 31st, 1915); C. S. Frazer, D.S.O., 1st London Field Ambulance, December 19th, 1915 (substituted for notification in the *London Gazette*, January 10th, 1916); J. H. Hunter, M.C., 3rd Highland Field Ambulance, November 30th, 1915 (substituted for notification in the *London Gazette*, December 30th, 1915).

VOLUNTEER FORCE.

Bedfordshire R.A.M.C.(V).—Temporary Lieutenant H. N. Edwards resigns his commission.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Lieut.-Colonel J. L. Birley to be graded for pay as Lieut.-Colonel (Grade A).

Major A. V. J. Richardson to be acting Lieut.-Colonel while employed as Lieut.-Colonel.

Majors to be graded for pay as Majors (Grade A): R. R. Fasson, E. M. W. Horn, A. H. Hogarth, A. W. Fredell, A. V. J. Richards, n.

Captains (acting Majors) to be graded for pay as Majors (Grade A): A. P. Bowdler, H. A. Treasgold.

Captains to be graded for pay as Captains (Grade A): H. C. Bazett, M.C., K. Biggs, D. Cameron, W. Darling, M.C., C. C. Fitzgerald, M.C., O. Gleeson, E. N. H. Gray, J. P. I. Hart, J. C. Hall, H. R. B. Hull, J. Lawson, J. H. Owen, D'Arcy Power, M.C., A. E. Panter, F. P. Punch, F. J. P. Saunders, A. R. Sharrod, J. L. Wadell.

Captains to be graded for pay as Captains (Grade B, Rate D): A. A. Atkinson, W. H. H. Bennett, R. E. Bell, H. S. Baker, R. D. Goldie, J. J. C. Hamilton, F. C. Kempson, J. M. Kirkness, A. MacLennan, J. A. Parsons, F. Roberts, C. P. C. Sargent, A. Scott-Turner, C. J. G. Taylor, C. Webb, N. R. Williamson.
Captain H. C. Bazett, M.C., R.A.M.C.(S.R.), is transferred to the unemployed list.

Granted temporary commissions:—As Captain: A. E. P. Parker. As Lieutenants: T. E. Roberts, R. D. Jones.

APPOINTMENTS.

BLACK, G., M.B., B.S., District Medical Officer of the Hailsham Union.

DRAPER, Marion, M.B., Ch.B., Leeds, Assistant Resident Medical Officer, Salford Union Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

WHARTON.—On February 7th, at 102, King Street, Oldham, the wife of Alwyn Wharton, M.D., of a daughter.

DEATHS.

BEGG.—On February 2nd, at 39, Cole Park Road, Twickenham, Colonel Charles Mackie Begg, C.B., C.M.G., M.D., F.R.C.P., F.R.C.S.Ed., Director Medical Service, N.Z. Expeditionary Force, of pneumonia, aged 39 years.

KHOY.—On February 5th, at 249, Hackney Road, E.2, Susan, the beloved wife of Dr. K. N. Khoi, after a long illness.

MIDDLEMISS.—On February 9th, 1916, at a nursing home in Worthing, after a short illness, George Andrew Middlemiss, elder son of George Whitson and Mary Mabel Middlemiss, of Settle, Yorkshire, aged 46 years.

PRICE.—On February 9th, suddenly, at 286, High Street, Bangor, aged 61, Emyr Owen Price, M.D., J.P.

DIARY FOR THE WEEK.

MEDICO-PSYCHOLOGICAL ASSOCIATION, 11, Chandos Street, W.1.—Thursday, 2.45 p.m., Lieut.-Colonel E. P. Cathcart: Psychic Section.

ROYAL SOCIETY OF MEDICINE.—Tuesday, 5 p.m., Special Meeting of Fellows to consider increasing of subscription of Fellows living or practising within one mile of Society's House from 45s. to 45s. Section of History of Medicine: Wednesday, 5 p.m., Mrs. Singer: Medical Manuscripts of the British Isles. Section of Otolaryngology: Friday, 5 p.m., Mr. J. S. Fraser: Mastoid Operations. Mr. Hunter-Tod: Injury of Lateral Sinus during Mastoidotomy. Section of Electro-Therapeutics: Friday, 8.30 p.m., Mr. W. Simpson Handley: Spread of Cancer in relation to X-ray Treatment.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W.1.—Friday, 5.30 p.m., Drs. J. A. Arkwright, A. Baet, and F. Martin Duncan: Minute Bodies (Rickettsia) found in association with Trench Fever, Typhus, and Rocky Mountain Spotted Fever. Sir Stewart Stockman: Louping-ill, with special reference to Chromatin Bodies in the White Corpuscles. C. Bonne (Parramari): Has Emeline any Influence on the Schistosomes?

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, FEBRUARY 22ND, 1919.

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British Medical Association.

CLINICAL MEETING, LONDON, APRIL 8th to 11th, 1919.

GENERAL COMMITTEE.

Sir T. CLIFFORD ALBUTT, K.C.B., F.R.S., President of the Association (<i>Chairman</i>).	Major-General M. H. G. FELL, C.M.G., Medical Administrator, Royal Air Force.
Sir WILLIAM OSLER, Bt., Regius Professor of Medicine, University of Oxford.	Sir R. HAVELOCK CHARLES, G.C.V.O., Medical Adviser to the Secretary of State for India.
Dr. NORMAN MOORE, President of the Royal College of Physicians of London.	Major-General G. LA F. FOSTER, C.B., D.G. Canadian Army Medical Service, London.
Sir G. H. MAKINS, G.C.M.G., C.B., President of the Royal College of Surgeons of England.	Sir NEVILLE HOWSE, V.C., K.C.B., Director of Medical Services, Australian Imperial Force.
Sir W. H. NORMAN, K.C.B., Medical Director-General, R.N.	Lieut.-Colonel B. MYERS, A.D.M.S. New Zealand Overseas Forces.
Sir JOHN GOODWIN, K.C.B., C.M.G., D.G. A.M.S.	Colonel P. G. STOCK, C.B., D.D.M.S. South African Defence Force.
Sir CHARLES BURTHAELL, K.C.B., D.G. Medical Services, France.	

Adami, Colonel J. G., F.R.S., C.A.M.C.‡	Galloway, Sir James, K.B.E., C.B.††	Lewis, Dr. T., F.R.S.‡
Arkwright, Dr. J. A.‡	Garstaug, Dr. T. W. H. (Chairman of Representative Meetings of the Association)††	Lister, Colonel W. T., C.M.G.‡
Atkins, Colonel Sir John, K.C.M.G., D.D.M.S.†	Geddes, Sir Auckland C., K.C.B., M.P.	Macedonald, Dr. J. A., LL.D. (Chairman of Council of the Association)†
Barr, Lieut.-Colonel Sir James, M.D.	Godlee, Sir Rickman J., Bt., K.C.V.O.	Martin, Lieut.-Colonel C. J., C.M.G., F.R.S.‡
Barry, Lieut.-Colonel T. D. R.A.F.†	Gray, Colonel H. M. W., C.B., C.M.G.‡	Morton, Dr. E. R.††
Bland-Sutton, Sir John, F.R.C.S.	Harman, Mr. N. Bishop, F.R.C.S.††	Mott, Lieut.-Colonel F. W., F.R.S.‡
Bowlby, Major-General Sir Anthony, K.C.M.G., K.C.V.O., C.B., F.R.S.	Harrison, Colonel L. W., D.S.O.‡	Moynehan, Major-General Sir Berkeley, K.C.M.G., C.B.‡
Bruce, Major-General Sir David, K.C.B., F.R.S.	Haslip, Dr. G. E. (Treasurer of the Association)††‡	Rolleston, Sir H. D., K.C.B.††‡
Dawson, Major-General Sir Bertrand, G.C.V.O., C.B.	Herringham, Major-General Sir Wilmot, C.B.	Ross, Colonel Sir Ronald, K.C.B., K.C.M.G., F.R.S.
De Crespigny, Colonel C. T. C., D.S.O., A.A.M.C.‡	Hewitt, Surgeon Commander D. W., C.M.G., R.N.‡	Rudolf, Colonel R. D., C.B.E., C.A.M.C.‡
Eccles, Major W. McAdam, R.A.M.C. (T.).†	Holmes, Dr. Gordon, C.M.G.††‡	Shattock, Professor S. G., F.R.S.‡
Elliott, Colonel T. R., D.S.O., F.R.S., A.M.S.	Ivens, Miss Mary F., M.S.	Shore, Dr. T. W.†
Ellis, Major A. M. W., C.A.M.C.‡	Jones, Major-General Sir Robert, C.B.	Smith, Mr. S. Maynard, C.B.††‡
Fletcher, Sir Walter M., K.B.E., F.R.S.‡	Keith, Professor A., F.R.S., LL.D.‡	Sprigge, Dr. S. Squire.†
Foster, Major Michael, R.A.M.C. (T.).†	Lane, Sir W. Arbuthnot, Bt., C.B.†	Staring, Professor E. H., F.R.S.‡
Pothergill, Major E. R., R.A.M.C.‡	Leiper, Dr. R. T. (London School of Tropical Medicine)‡	Stewart, Colonel John, C.A.M.C.
Frankau, Mr. C. H. S., D.S.O., F.R.C.S.‡	Leishman, Colonel Sir W. B., K.C.M.G., C.B., F.R.S.	Turner, Mr. E. B., F.R.C.S.††
		Verrall, Mr. T. Jenner, LL.D.
		Wallace, Mr. Cuthbert, C.B., C.M.G.††‡
		Whaley, Colonel A. M., M.C.U.S.A.‡

† Member of General Arrangements Subcommittee.
‡ Member of Entertainments Subcommittee.

†† Member of Premises and Accommodation Subcommittee.
‡‡ Member of Programme Subcommittee.

The General Secretaries of the meeting are:

Mr. CUTHBERT WALLACE, C.B., C.M.G., F.R.C.S., 26, Upper Wimpole Street, W.1.

Dr. GORDON HOLMES, C.M.G., 101, Harley Street, W.1.

Mr. S. MAYNARD SMITH, C.B., F.R.C.S., 28, Wimpole Street, W.

The Chairman of the Programme Subcommittee is Colonel J. G. ADAMI, F.R.S., C.A.M.C.

The Secretaries of the Sections are as follows:

Medicine: Colonel C. T. C. DE CRESPIGNY, D.S.O., A.A.M.C., 429, Strand, W.C.2.

Surgery: Mr. C. H. S. FRANKAU, D.S.O., 7, Tenby Mansions, Nottingham Street, W.1.

Preventive Medicine and Pathology: Dr. J. A. ARKWRIGHT, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.1.

PROVISIONAL PROGRAMME.

A RECEPTION arranged by the Metropolitan Counties Branch of the British Medical Association will be held at the Guildhall, London, kindly lent by the Lord Mayor, on the evening of Tuesday, April 8th. The guests will be received by Sir T. Clifford Allbutt, K.C.B., F.R.S., Regius Professor of Physic, University of Cambridge, President of the British Medical Association.

On Wednesday evening, April 9th, the Royal Society of Medicine will hold a reception at its house, 1 Wimpole Street, W. The guests will be received by Sir H. D. Rolleston, K.C.B., President of the Society.

On Thursday evening, April 10th, a dinner will take place at the Connaught Rooms.

The following is a provisional programme of the arrangements for the sections, which will be held in the Imperial College of Science at South Kensington, the unrivalled resources of this great institution having been placed with great good-will at the disposal of the Association for the purpose by Sir Alfred Keogh, G.C.B., M.D., the Rector.

SECTION OF MEDICINE.

Wednesday, April 9th.—10 a.m. to 1 p.m.

War Neuroses.—Chairman: Colonel H. MAUDSLEY, C.M.G., C.B.E., F.R.C.P., A.A.M.C. Introducer: Lieut.-Colonel F. W. MOTT, F.R.S., R.A.M.C. A discussion will follow.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(In conjunction with the Section of Preventive Medicine and Pathology, *q.v.*) The subject will be treated under the following headings:

1. Clinical Aspects.

(a) Short account of epidemics of 1918 in France. Contrast between clinical features of spring and autumn epidemics—for example, respiratory complications.

(b) Epidemic in England. Contrasts and resemblances to above.

2. Epidemiology.

3. Etiology.

N.B.—The pathological aspects will be treated by means of demonstrations.

Friday, April 11th.—10 a.m. to 11.30 a.m.

Venereal Disease.—Chairman: Sir WILLIAM OSLER, Bt. The subject will be introduced by Brevet Colonel L. W. HARRISON, D.S.O., K.H.P., Lecturer in Venereal Diseases, Military Hospital, Rochester Row. A discussion will follow.

11.30 a.m. to 1 p.m.

Prognosis in Cardio-vascular Affections.—Chairman: Sir JAMES MACKENZIE, M.D., F.R.S. Introducer: Dr. THOMAS LEWIS, F.R.S. A discussion will follow.

DEMONSTRATIONS.

It is hoped that the following demonstrations may be arranged to take place in the afternoon beginning at 2.30:

Wednesday, April 9th.

Interesting Neurological Cases. National Hospital for Paralysed and Epileptic, Queen Square.

Diseases of the Chest. Brompton Hospital.

Mine Gas Poisoning. Lieut.-Colonel D. Dale Logan, D.S.O., R.A.M.C.

Thursday, April 10th.

Newer Methods in Cardio-diagnosis. National Heart Hospital, Westmoreland Street.

Air Force Tests.

Cases and Specimens illustrating Cardio-vascular Disease. Dr. Thomas Lewis, F.R.S., at University College Hospital.

Friday, April 11th.

Venereal Diseases. Colonel L. W. Harrison, D.S.O., Military Hospital, Rochester Row.

War Neuroses. Lieut.-Colonel F. W. Mott, F.R.S., Maudsley Clearing Hospital, Denmark Hill.

Diseases of Children. Hospital for Sick Children, Great Ormond Street.

It is probable that other demonstrations will be arranged and that some of the above will take place on more than one afternoon.

SECTION OF SURGERY.

Discussions on the following subjects have been arranged to take place in the morning of the day indicated.

Wednesday, April 9th.

Gunshot Wounds of the Chest.—Chairman: Sir GEORGE MAKINS, G.C.M.G. Introducers: Colonel T. R. ELLIOTT, D.S.O., F.R.S., and Colonel G. E. GASK, C.M.G., D.S.O.

Thursday, April 10th.

Wound Shock.—Chairman: Sir ANTHONY BOWLBY, K.C.M.G. Introducers: Professor W. M. BAYLISS, F.R.S., and Dr. H. H. DALE, F.R.S.

Friday, April 11th.

A Review of Reconstructive Surgery.—Chairman: Sir ROBERT JONES, C.B. Introduced by Major R. C. ELSLIE and Major W. R. BRISTOW, R.A.M.C.

DEMONSTRATIONS.

The following demonstrations have been arranged to take place in the afternoon, beginning at 2.30:

Wednesday, April 9th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.

2. Specimens illustrating Wounds of Arteries; at the Royal College of Surgeons.

3. On X Rays.

Thursday, April 10th.

1. On Facial Injuries; at Sidcup.

2. On Injuries of the Eye.

3. Specimens illustrating Fractures of the Skull; at the Royal College of Surgeons.

Friday, April 11th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.

2. Specimens illustrating Gunshot Wounds of the Abdomen; at the Royal College of Surgeons.

3. On X Rays.

SECTION OF PREVENTIVE MEDICINE AND
PATHOLOGY.

Discussions have been arranged for the morning meetings on the following subjects:

Wednesday, April 9th.—10 a.m. to 1 p.m.

The Dysenteries: Bacillary and Amoebic.—Introduced by Lieut.-Colonel L. DUDGEON, C.M.G.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(At a joint meeting with the Section of Medicine, *q.v.*) Clinical Aspects: Introduced by Major-General Sir WILMOT HERRINGHAM, C.B., A.M.S. Epidemiology: Introduced by Captain M. GREENWOOD, R.A.M.C. Etiology: Introduced by Major BOWMAN, C.A.M.C.

Friday, April 11th.—10 a.m. to 1 p.m.

Malaria.—Introduced by Lieut.-Colonel S. P. JAMES, I.M.S.

DEMONSTRATIONS.

Demonstrations have been arranged to take place in the afternoon, beginning at 2.30:

Wednesday, April 9th.—On Malaria.

Thursday, April 10th.—On the Pathology of Dysentery; at St. Thomas's Hospital.

Friday, April 11th.—On the Anaerobic Bacteria which infect Wounds; and On the subject of Filter-passing Viruses in Influenza and other Diseases, and Rickettsia Bodies. At the Lister Institute of Preventive Medicine.

THE WAR COLLECTION AT THE ROYAL COLLEGE
OF SURGEONS OF ENGLAND.

The collection of pathological specimens from the seat of war in France will be on view daily from 10 till 6 (on Saturday 10 till 1, at the Royal College of Surgeons, Lincoln's Inn Fields, W.C. It comprises a large and complete series of gunshot fractures of the bones; and another series, equally complete, of gunshot injuries of the different organs and soft structures, as well as specimens of disease incident to warfare, the effects of gassing, trench nephritis, gas gangrene, etc. The entire collection is systematically arranged, and each preparation is furnished with a brief description and history. So far, three demonstrations have been arranged. Each will occupy about one hour, and will be given from 3.30 till 4.30.

Wednesday.—Sir George Makins: Injuries of Arteries.

Thursday.—Professor Arthur Keith, F.R.S.: Fractures of the Skull.

Friday.—Mr. C. S. Wallace, C.B.: Abdominal Injuries.

CURRENT NOTES.

Medical Resettlement.

A CORRESPONDENT has drawn our attention to a letter which appeared in the *Times* of January 17th, 1919, headed "A Hospital Appointment." The letter began thus: "An open appointment as Medical Officer to the Corporation of Birmingham Pensioners Hospital was advertised, preference being given to 'senior men having recent hospital experience.' A lieutenant-colonel, a major, and three captains, Royal Army Medical Corps, all with war service, were candidates. The appointment was given to a young recently qualified man who has never served his country." From such inquiries as we have been able to make, it appears that the facts given are approximately correct, but we are not in a position to state the reasons which influenced the Birmingham Public Health Committee when making the appointment in question. The policy of the Central Medical War Committee in this matter is defined in the following resolution adopted on February 5th, 1919, by the General Purposes Subcommittee of that Committee:

That the Committee adhere to the principle already adopted by it that where it is by any means possible appointments falling vacant in institutions, etc., should be given to medical officers who have served in the forces; that exceptional circumstances should be the only reason for departure from this principle; and that in cases where it is not possible to appoint a demobilized officer a temporary appointment only should be made pending general demobilization.

Meetings of Branches and Divisions.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.

A SPECIAL meeting of the Division was held at Newtown St. Boswells on February 4th, when Dr. A. J. CAMPBELL presided. The annual report and financial statement for 1918 were submitted and approved.

Ministry of Health.

Dr. M. J. OLIVER, Honorary Secretary, read a letter from the Branch Council asking for an expression of opinion on the proposal for a Ministry of Health.

Dr. W. BLAIR explained the composition and origin of the Representative Committee for Scotland. After full discussion, Dr. OLIVER moved that "the meeting approves of a committee being appointed to represent the interests of the medical profession in Scotland." Dr. W. L. CULLEN seconded, and the motion was carried.

A resolution was adopted on the proposal of Dr. P. C. MACROBERT, seconded by Dr. SOMERVILLE, giving approval to the formation of a Scottish Representative Committee consisting of representatives of the following bodies:

College of Physicians (2).
College of Surgeons (2).
Faculty in Glasgow (2).
Faculty of each of the Universities (1).
Society of Medical Officers of Health (2).
Scottish Association of Medical Women (1).
Nine members other than members of the British Medical Association and non-collegiate, to be co-opted by the other representative and all the members of the Scottish Committee of the British Medical Association.

After a lengthy discussion the meeting did not desire to express any opinion as to the lines on which a Ministry of Health should be formed. Dr. CAMPBELL moved that the meeting should express approval of a State medical service; Dr. I. K. HERMON seconded. Dr. MACROBERT moved the direct negative, Dr. J. J. McMILLAN seconded, and the amendment was carried by six votes to two.

INSURANCE.

MEDICAL BENEFIT OF DEMOBILIZED MEN.

THE following memorandum, dated February, 1919 (253 J.C.), has been issued to Insurance Committees by the National Insurance Commission (England).

1. In view of inquiries which have been received on the subject of the re-entry to medical benefit of insured members of His Majesty's Forces on demobilization, the Commissioners think it advisable to communicate with Insurance Committees generally in the matter.

2. Each insured soldier or airman is furnished, on demobilization, with a postcard containing a certificate as to his insurance during his service which he is directed to forward at once to his society or, if not a member of a society, to the Commission. The society (or Commission) is thus placed in a position

In the case of insured seamen or marines, the certificate of insurance is sent direct to the society (or Commission) by the Admiralty.

to notify the appropriate Committee—by means of an Index Slip—of a demobilized man's resumption of medical benefit, and on receipt of the notification a new medical card is issued by the Committee to the man in order that he may select a doctor.

3. Every demobilized man is supplied with a leaflet explaining his position in insurance which, *inter alia*, informs him that if delay should arise in the receipt by him of a medical card, he should apply direct to his Insurance Committee by means of Form Med. 30, which is available at every post office.

4. In many cases, however, a demobilized man applies to a doctor with his old medical card. In such cases it will be necessary for special steps to be taken in order that the man may be duly included in the doctor's list and in the Committee's Register. The following procedure should be adopted:

5. The medical card should be completed in Part B, signed by the doctor in token of his acceptance, endorsed by him on page 1 "Demobilized on (date)," and forwarded to the Committee. The Committee, on receipt of a card so completed and endorsed, should issue a new card, prepare a suspense slip, and apply to the society (or Commission) for the Index Slip by means of a Form Med. 80, endorsed in the top left corner "Demobilized on (date)."

6. The Commissioners have recently had before them suggestions that the regulations should be amended so as to provide for the automatic reinstatement of demobilized men on the lists of their former doctors. These suggestions have, it is understood, been based on the belief that the proposed arrangements would be beneficial alike in the interests of the men and of the profession, especially those members of the latter who have been absent from their practice on war work. After an exhaustive examination of the matter the Commissioners have arrived at the conclusion that this belief is not well founded, mainly because of the selections of doctors made during the war period itself, and of the large movements of population which have been and are taking place. In these circumstances, the Commissioners do not propose to amend the Regulations, and therefore, certain administrative difficulties which would arise in giving effect to the suggestions need not be examined. Every demobilized man should have an unrestricted fresh choice of doctor as in the case of a new entrant into medical benefit. Where, however, as in a few cases, any men have in the past been replaced on the lists of their former doctors without any application on their part, the lists need not be disturbed unless the men concerned themselves make application to select a new doctor.

Position of Demobilized Men during their Period of Furlough.

7. As committees are aware, each demobilized man is granted twenty-eight days' furlough commencing from the date on which he leaves his dispersal station. During this period the man ranks as a soldier, sailor or airman, as the case may be, and is entitled to treatment at the cost of the service authorities under the ordinary furlough arrangements.

8. In the case of soldiers and airmen, the man should apply at the nearest military hospital whenever practicable. Should he live more than two miles from a military hospital, or his condition be such that he is unable to travel to the hospital, the Commissioners understand that he may call in a civilian doctor, and that to obtain payment, the doctor must fill in Army Form 01667 and send it to the Deputy Director of Medical Services of the district.

9. In the case of sailors or marines, the man, if at a naval port, should be referred to the local naval authorities, or, failing that, to the naval surgeon and agent if there is one in the district. At a place where there are no naval authorities, the man should be directed to make his own arrangements with a civilian practitioner for treatment. The Commissioners understand that the surgeon and agent will receive his fees for the case from the Admiralty, and if a civil practitioner be employed, the latter should apply to the Accountant General of the Navy, Admiralty, S.W.L., for remuneration on the same scale as is provided in the army form quoted above. It should be observed that the regulation printed on the back of the Protection and Identity Certificate (Form S. 1306) to the effect that sailors or marines are themselves responsible for settling a civil practitioner's fees is obsolete.

LOCAL MEDICAL AND PANEL COMMITTEES.

WEST RIDING OF YORKSHIRE.

AT a meeting of the Local Medical and Panel Committee on December 13th it was decided to send a resolution to the West Riding Insurance Committee expressing in the strongest possible terms the surprise and regret of the Panel Committee that when the question of the return of military doctors was being discussed no medical men were placed upon the subcommittee appointed to deal with the matter.

A subcommittee was appointed to deal with the question of the establishment of maternity centres and school clinics in many prosperous parts of the West Riding area.

COUNTY OF FORFAR.

At the inaugural meeting of the Local Medical Committee on January 22nd it was resolved to impose a levy of 1d. per five insured persons on the panel of each practitioner in the area for each of the four quarterly payments to be made during the year.

It was agreed that any operation or other treatment necessary in a spontaneous interruption of pregnancy during the early months should be carried out by the panel practitioner under the agreement with the Insurance Commissioners.

At a meeting of the Panel Committee on the same day a letter was read from the National Insurance Commission (Scotland), stating that an insured person is entitled to drugs and prescribed appliances as part of his medical benefit only when he is receiving treatment from the practitioner on whose list he may be under the arrangement made by the Insurance Committee, and that it is not competent for another practitioner attending him, even if a doctor on the panel, to order drugs and appliances on the official prescription form.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:—Surgeon Commander C. M. Beadnell promoted to rank of Surgeon Captain. Surgeon Lieutenant Commanders: L. C. Hunt to the *Carlisle*, A. E. P. Cheesman to the *Ceres*, H. H. Ormsby to the *Covenry*, H. St. C. Colson to the *Yarmouth*, J. M. Gordon to the *Calyppo*, J. G. Danson to Dartmouth College, F. H. Stephens, O.B.E., to the *Dawntless*, F. G. H. R. Black to the *Southampton*, W. Bradbury, D.S.O., to the *Ganges*. Surgeon Lieutenant J. G. Stevens to Haslar Hospital. Surgeon Lieutenants (temporary): J. B. Crawford to the *Severn*, J. F. Haynes to Plymouth Hospital, J. F. O'Grady to the *Lancaster*, W. P. Tew to Chatham Hospital, B. H. Pidcock to Haslar Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Lieutenant C. F. A. Hereford promoted to Surgeon Lieutenant Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

C. J. Bond, C.M.G., to be temporary honorary Colonel whilst specially employed.

To be acting Colonels whilst specially employed: Lieut.-Colonel and Brevet Colonel R. R. H. Moore, Lieut.-Colonel J. C. Connor, C.M.G.

To be acting Lieut.-Colonels whilst in command of a medical unit: Majors A. N. Fraser, D.S.O., W. J. Weston, D.S.O., O. Ievers, D.S.O., Captain G. O. Chambers.

To be Majors:—Captains (acting Lieut.-Colonels) W. K. Beaman, M. P. Leahy, D. F. Mackenzie, D.S.O., W. W. Boyce, J. du P. Langrishe, D.S.O., T. H. Scott, M.C., G. F. Rudkin, A. C. Elliott, W. B. Purdon, D.S.O., M.C., F. Casement, D.S.O., E. M. Middleton. Captain (Brevet Major) H. G. Gibson. Captains (acting Majors) A. D. Fraser, D.S.O., M.C., J. L. Wood, O. R. McEwen, M. O. Wilson, L. A. A. Andrews, H. W. Farebrother. Captains: C. Cassidy, M.C., A. Irvine-Fortescue, F. H. M. Chapman, H. M. J. Perry, F. T. Turner, M.C., J. E. M. Boyd, M.C., J. H. Gurley, V. T. Carruthers.

To be acting Majors:—Captains: A. Hendry, H. G. Robertson, J. H. M. Frobisher. Temporary Captains: H. C. Elliot, M.C., A. E. Hallinan, M.C., D. B. I. Hallett, A. C. Palmer, A. V. Poyser, C. C. Chance, M.C., R. W. P. Jackson, H. G. Pesel, M.C., C. O. Bodman, H. B. Shepherd, H. H. Hepburn, M.C., J. P. Mathie, G. Muir, W. Warnock (from August 14th to October 28th, 1918), H. H. Raw, E. L. Dobson, H. R. Evans, W. S. Martin, M.C. Whilst specially employed: Captains H. V. Stanley, V.C., James Vallance, temporary Captains J. B. Lester, J. Greene, D.S.O., M.C., J. H. Peck.

The following relinquish their commissions on ceasing to serve with No. 6 British Red Cross (Liverpool Merchants' Mobile) Hospital and retain their honorary rank:—Temporary honorary Lieut.-Colonel Nathan Raw, C.M.G. Temporary honorary Major F. A. G. Jeans. Temporary honorary Captains J. Hayward, S. Raw, H. W. Jones, F. C. Wilkinson.

The following relinquish their acting rank on reposting:—Temporary Major (acting Lieut.-Colonel) J. C. Davies. Captain (acting Major) W. F. Christie. Temporary Captains (acting Lieut.-Colonels): H. K. Wallace, A. Jones, D.S.O., M.C. Temporary Captains (acting Majors): D. M. Hunter, M.C., J. G. Murray.

Temporary Major E. K. Martin to draw the pay and allowance of his temporary rank from January 4th to December 18th, 1918.

Major D. P. Johnstone to be seconded for service on the staff of the Governor of Bombay.

C. F. Curtis, late temporary Captain, is granted the rank of Captain. Temporary Lieutenants to be temporary Captains: J. Cullen, G. V. Allen, P. C. Leslie.

Temporary honorary Lieutenant D. E. Carter to be temporary honorary Captain.

O. K. Lang to be temporary Lieutenant.

The notifications in the *London Gazette* of the dates indicated regarding the officers mentioned are cancelled: Major W. J. Watson, D.S.O. (January 20th, 1919); temporary Major A. Stewart (June 21st, 1918); Captain C. W. Milner (December 20th, 1918); temporary Lieutenants C. E. Elliston (January 14th, 1919), A. Ashkeny (January 28th, 1919).

Officers relinquish their commissions: Temporary Captains (acting Majors) and retain the rank of Major: H. R. Atlee, B. F. Bartlett, M.C. Temporary Captain J. H. Hebb, November 27th, 1918, and is granted the rank of Major (substituted for notification in the *London Gazette*, January 11th, 1919). Temporary Captains, on account of ill health contracted on active service and retain the rank of Captain: F. Thompson, T. Stansfield, T. J. Little, G. Heathcote. Temporary Captains, on account of ill health and retain the rank of Captain: W. R. Meredith, F. W. Emery. Temporary Captains and retain the rank of Captain: G. O. Hutchinson, A. C. Rowswell, A. Ball, R. W. L. Fernandes, I. G. Cobb, R. Dane, F. H. Dodd, L. W. Kergin, C. J. McN. Willoughby, W. Garton, D. Duff, L. W. Forsyth, W. G. Harnett, B. M. Bennett, A. R. J. Douglas, F. A. Anderson, M.C., J. J. Clarke, D. J. Clark, M. M. Roger. Temporary Captain A. B. Glynn (on transfer to the R.A.F.). Temporary honorary Captains and retain the honorary rank of Captain: D. A. Bartley, J. S. Burn (on ceasing to be employed with the St. John Ambulance Brigade Hospital); J. Boyd, on ceasing to be employed with the Welsh Hospital, Nefely, November 16th, 1918 (substituted for notification in the *London Gazette*, December 7th, 1918). Temporary Lieutenant and retains the

rank of Lieutenant: W. Wright. Temporary honorary Lieutenant and retains the honorary rank of Lieutenant: R. M. Gibson (on ceasing to serve with No. 11 Stationary Hospital).

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain A. E. McCulloch is transferred to the unemployed list.

Captain L. G. Davies relinquishes his commission on account of ill health, and is permitted to retain his rank.

Granted temporary commissions:—As Captain: A. S. Glynn (Captain R.A.M.C., seniority April 1st, 1918). As Lieutenant: G. McK. Thomas.

INDIAN MEDICAL SERVICE.

The commissions of the following officers are antedated to the dates shown: Lieutenants B. C. Ashton, R. Hay, G. Shanks, and G. A. S. Ramsay (July 17th, 1915). R. M. Kharegat (September 11th, 1915). J. M. Shah (December 17th, 1915). W. M. Crombie (May 22nd, 1916). To be temporary Lieutenant: Narbheram Parbhudas Bhansali.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains to be acting Majors: W. S. Haydock, H. T. Chatfield, W. B. Wood, M. J. B. F. Burke-Kennedy.

Captain E. Talbot, M.C., relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

To be Lieutenant: W. A. Freedman.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Hon. Captain J. W. White to be acting honorary Major while employed as Officer in Charge C.D.M. Stores.

SOUTH AFRICAN MEDICAL CORPS.

The following relinquish their commissions on ceasing to be employed with the Union Imperial Service, and retain their rank: Temporary Lieut.-Colonel G. K. Moberley, temporary Major G. D. Maynard, O.B.E. Temporary Captains: I. Haslam, W. D. Akers, J. A. Martin, A. J. Milne, A. McW. Green, J. J. Commerell, E. L. Galgut.

The name of Major W. H. Maxwell is as now described, and not as in the *London Gazette* of December 3rd, 1918.

To be temporary Captains: T. J. Howell, C. C. Murray, T. G. Burnett, A. J. Milne.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major G. A. Troup to be Lieutenant-Colonel, May 3rd, 1918.

Captain (acting Major) J. W. Cairns relinquishes his commission on account of ill health contracted on active service, and retains the rank of Major.

To be acting Majors whilst specially employed: Captains J. C. Denvir, J. C. S. Dunn, T. G. Buchanan.

The following relinquish their acting rank: Majors (acting Lieut.-Colonels) H. T. Samtel, on ceasing to command a field ambulance; J. Evans, D.S.O., and W. D. Watson, on ceasing to be specially employed; Captain (acting Major) A. E. Barnes, on ceasing to be specially employed.

Captains J. Angus and M. H. B. Stratford relinquish their commissions on account of ill health contracted on active service, and retain the rank of Captain.

Captain J. F. W. Wyer relinquishes his commission on account of ill health, and retains the rank of Captain.

2nd Eastern General Hospital.—Captain W. B. Prowse relinquishes his commission on account of ill health, and retains the rank of Captain. Captain H. N. Fletcher is restored to the establishment.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

BODMAN.—On February 7th, at Private Nursing Home, 7, Berkeley Square, Clifton, to Alan and Clare Bodman, a son.

ENGLISH.—On February 4th, at "Earncliffe," Crewe, Cheshire, to Dr. and Mrs. Howard English, a son.

DEATHS.

BRAMWELL.—At 10, Heriot Row, Edinburgh, on February 12th, Martha, beloved wife of Byrom Bramwell, M.D., F.R.C.P.E., LL.D.

MORRIS.—On February 14th, at Halesworth, Suffolk, Pryce Jones Langford Morris, M.R.C.S., L.R.C.P., aged 78 years.

REID.—At Devon House, Portobello, Edinburgh, on February 13th, Lily, the beloved wife of Captain A. E. H. Reid, R.A.M.C., aged 27 years.

DIARY FOR THE WEEK.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8.30 p.m. Mr. Robert Anstruther Ramsay, M.C.: Treatment of Congenital Hypertrophy of the Pylorus.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.—Monday, 5 p.m., Arris and Gale Lecture by Dr. Charlton Briscoe: The Mechanism of Post-operative Massive Collapse of the Lungs.

ROYAL SOCIETY OF MEDICINE.—General meeting of Fellows, Tuesday, 5.30 p.m.: Sir Almroth Wright: On Lessons of the War in the Field of Immunization. Social evening, Wednesday, 8.30 p.m.: Sir William Osler: Sir Thomas Browne and his *Religio Medici*—a Bio-bibliographical Demonstration. Section of Odontology: Monday, 7.30 p.m., Mr. J. F. Colyer: Irregularities of the Teeth in Monkeys. Section of Medicine: Tuesday, 5.30 p.m., Dr. Otto Leyton: Transfusion in Diseases of the Blood. Section of Study of Disease in Children: Friday, 4.30 p.m., Continued discussion: The Etiology, Prevention, and Non-operative Treatment of Adenoids.

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MEDICAL RESETTLEMENT.

STATEMENT BY THE CENTRAL MEDICAL WAR COMMITTEE.

We have received the following statement as to some of the steps which have been taken by the Central Medical War Committee to protect or promote the interests of members of the medical profession who have been on service.

Position during Absence.

1. Local Medical War Committees were instituted in every British Medical Association area in England and Wales, and to them was entrusted the duties (i) of protecting the interests of men who proceeded on service, (ii) of choosing, in co-operation with the Central Medical War Committee, the men who should serve, (iii) of providing for their medical work during their absence.

2. It is believed that in every Local Committee area there is a general agreement under which half fees (the proportion is different in a few areas) will be paid over by the practitioners who attend the patients of a doctor on service, and the patients will be handed back on his return. The doctor who has attended the patients during the absentee's period of service will decline to attend them for a year after his return.

3. In consequence of representations made to the Insurance Commissioners, Regulations under the Insurance Act were made which abrogated, during the war, the right of the insured person to change from the list of an absent doctor, unless in very exceptional circumstances.

4. All Government departments controlling the employment of doctors were asked, and consented, to approve of only temporary appointments during the war, so that those who had served might later have the opportunity of applying for these appointments.

Position after Demobilization.

5. A scheme providing for priority of demobilization so far as the claims are based on personal grounds, which recognizes as a primary consideration age and length of service, was formulated by the Committee and submitted to and accepted by the Ministry of National Service. On the very day on which the armistice was declared the Committee urged on the authorities that as large a number as possible of medical officers should be released to meet the urgent demands of the civil population, and a certain number were demobilized within the next few weeks in advance of the operation of the priority scheme. The men selected for this urgency demobilization were nominated after consultation with the Local Medical War Committees and with the appropriate Government departments if they were general practitioners, and were nominated direct to the Ministry of National Service by the Government departments concerned if they were whole-time officers.

6. In December last the Committee wrote to all the Government departments which have medical work at their disposal, urging that preference should, wherever possible, be given to doctors who have served. The Committee emphasized the need for this work being available during the first few months after the demobilized doctor's return, while he was building up his practice. The War Office, the Ministry of Pensions, the Ministry of National Service, and the Local Government Board all expressed

their cordial agreement with this principle and promised their support.

At the same time the Local Medical War Committees were informed of this step, and were asked to help any man to secure such work who on his return expressed his desire for it. It was pointed out that vacancies should be made, wherever necessary, by the retirement of those who now hold the posts but who have done no service.

7. Any doctor who now returns and who wishes for local work of this kind should apply (a) for military work to the D.D.M.S. of the command, stating his service, and asking to be given any local work which may be available; (b) to the secretary of the Local Medical War Committee (name and address will be supplied on application), asking that the name of the applicant be placed on the list of those available for pension boards, or any similar work for which local practitioners are being employed.

8. So far as whole-time appointments are concerned, with the exception of an uncertain number which will be made by the Ministry of Pensions, the Committee knows of none except those connected with the local public health and education authorities. The latter are advertised in the medical journals, and the central Government departments concerned are being asked to press on the local authorities the necessity for stating that men who are on service may apply though they have not yet been demobilized. Application should be made to the Ministry of Pensions for information about pensions medical appointments. Many applicants seem to be under the impression that the Ministry of National Service and the Ministry of Health have, or may shortly have, numbers of appointments of an administrative kind. There is no reason for this belief. The Ministry of National Service is shortly coming to an end while the Ministry of Health is not yet in existence.

9. The experience of the Committee goes to show that doctors who return to civil life should have little difficulty in finding work, though it may be difficult for them to find just the kind of work they would prefer. Before the war the annual normal supply of doctors was hardly keeping pace with the demand, so there is little doubt that for some years to come there will be work for all. For five years the normal supply of fresh blood for the profession has been flowing into the services; consequently there are now many openings in all kinds of practice, but particularly of course in general practice. Moreover, during the years of the war the death-rate of the profession, both in and out of the services, has been higher than normal, and there are many doctors who in the ordinary course would have retired from practice, but who have carried on and are now anxious to be released. The Committee must refer men who are on the look-out for such openings to the usual channels—the Deans of medical schools, the columns of the medical journals, the medical agents.

Post-graduate Training for Men who have Served.

10. The Committee has asked the Ministry of Labour to make available to all medical men on demobilization who may wish for it, a course of instruction which will enable them to refresh their knowledge of civil, as opposed to military, medicine and surgery, and thus fit them for civil practice. It was suggested that those who apply for such a course of training should either retain their commissions (and pay) during the course, or should receive adequate maintenance. The matter is still under the consideration of the authorities, and an announcement

will at once be made in the medical journals as soon as their decision has been received.

It may be pointed out that even if the suggestions of the Committee should not be accepted by the Ministry of Labour, arrangements have been made by the Fellowship of Medicine with the medical schools in London for an emergency post-graduate course of three months for qualified medical men belonging to the Medical Services of the Royal Navy, Army, Air Force, the Overseas Contingents, the United States and Allies. Officers joining the course will be admitted to the general practice of the hospitals, including the clinical work of the wards and out-patient departments, clinical lectures and demonstrations, *post-mortem* demonstrations and laboratory work. Tickets for the whole course, or for one or two months, are issued at the rate of £3 10s. for each month. Particulars can be obtained from the Secretary of the Fellowship, 1, Wimpole Street, London, W.1.

Financial Assistance.

11. For those officers who need such assistance the following funds are available:—

War Emergency Fund of the Royal Medical Benevolent Fund.

This fund is prepared to give grants in respect of rent, insurance, taxes, family maintenance, and education. The circumstances should be stated to the honorary secretary in a letter marked "Confidential," and applicants need not be deterred by the fear of publicity. The application is investigated by one member of the committee and laid before the executive committee anonymously. Nor need applicants be deterred by any feeling that they are asking for "charity." A considerable sum has been subscribed, mainly by members of the medical profession, and it was intended to be used, and will be used, to help men who need such assistance either during their term of service or on their return without any question of "charity." The honorary secretary is Major G. Newton Pitt, 11, Chandos Street, Cavendish Square, W.

Civil Liabilities Committee.

Grants of not more than £104 per annum can be made to officers or ex-officers of rank not above captain to meet serious hardship due to (a) rent, (b) interest, instalments on loans, including mortgages, (c) instalments on purchase of house or furniture, (d) taxes, (e) rates, (f) insurance, (g) school fees, (h) maintenance of children.

Forms of application may be had from army agents or from Military Service (C.L.) Committee, Imperial House, Kingsway, W.C.

INSURANCE.

INSURANCE MEDICAL SERVICE.

PROPOSED EXTENSIONS.

We have received for publication the following statement headed "Preliminary Discussions as to Medical Services under National Health Insurance, and Possible Extensions of These."

Having practically completed the examination of the present conditions of service, and possible modifications of them, as regards the duties of insurance practitioners (subject to the present limitations of the scope of services provided), the Commissioners and the Conditions of Service Subcommittee of the Insurance Acts Committee¹ were proposing to proceed, in their twelfth conference on February 6th, 1919, to the consideration of possible extensions of the scope of service, including both those new services for which grants were voted by Parliament in August, 1914, and any other extensions that might appear desirable.

It had been agreed, both by the Commissioners and the Insurance Acts Committee, that a satisfactory examination of this subject would not be possible unless there were present to take part in this portion of the discussions an adequate number of physicians and surgeons and other medical practitioners representing types of experience specially involved in the subjects now to be discussed, and not included in the membership of the Conditions of Service Subcommittee. With this object the Commissioners, with the concurrence of the Insurance Acts Committee, invited on this occasion the attendance of the following individuals, each of whom attended in a per-

sonal capacity only and to take part in the discussions, not to formulate definite conclusions:

- Norman Moore, Esq., M.D., President of the Royal College of Physicians; Physician St. Bartholomew's Hospital.
- Sir George Henry Makins, G.C.M.G., C.B., President of the Royal College of Surgeons; Surgeon St. Thomas's Hospital.
- H. A. Ballance, Esq., M.D., F.R.C.S., Surgeon Norfolk and Norwich Hospital; late member of the Norwich Insurance Committee.
- Lady Barrett, M.D., Physician Royal Free Hospital; late member of the London Insurance Committee.
- R. A. Bolam, Esq., M.R.C.P., M.D., Physician Skin Department, Royal Victoria Infirmary, Newcastle-on-Tyne; member of Northumberland Insurance Committee.
- G. S. Buchanan, Esq., C.B., M.D., one of the Medical Officers of the Local Government Board.
- Sir Bertrand Edward Dawson, G.C.V.O., C.B., M.D., F.R.C.P., Physician London Hospital, E.; Dean of Faculty of Medicine, University of London.
- A. Freeland Fergus, Esq., M.D., F.R.F.S.P.Glas., Surgeon, Eye Infirmary, Glasgow; Lecturer on Ophthalmology, Anderson College, Glasgow.
- A. Fulton, Esq., M.B., Vice-Chairman, Nottingham City Health Committee and Nottingham Insurance Committee.
- H. R. Kenwood, Esq., C.M.G., M.B., D.P.H., President of Society of Medical Officers of Health.
- E. J. Maclean, Esq., M.R.C.P., M.D., Gynaecologist King Edward VII Hospital, Cardiff; late Chairman Cardiff Insurance Committee.
- Sir Berkeley G. A. Moynihan, K.C.M.G., C.B., M.B., F.R.C.S., Surgeon Leeds General Infirmary; Professor of Clinical Surgery, University of Leeds.
- Lauriston Shaw, Esq., M.D., F.R.C.P., Physician, Guy's Hospital; member London Insurance Committee.

The members of the Conditions of Service Subcommittee are as follows:

- H. B. Brackenbury, Esq., M.R.C.S., L.R.C.P., 21, Quernmore Road, Stroud Green, N. (Chairman).
- T. Ridley Bailey, Esq., M.D., Lyndale, Bilston, Staffs.
- H. G. Cowie, Esq., M.D., 7, Champion Park, Denmark Hill, S.E.5.
- H. G. Dain, Esq., M.B., Bournbrook House, Selly Oak, Birmingham.
- J. R. Drever, Esq., M.B., Lincluden, Cathcart, Glasgow.
- E. R. Fothergill, Esq., M.B., 28, Cardiff Road, Luton.
- P. V. Fry, Esq., M.R.C.S., L.R.C.P., Ryburn House, Sowerby Bridge, Yorks.
- S. Hodgson, Esq., M.D., The Crescent, Salford.
- A. Linnell, Esq., M.R.C.S., Paulerspury, Towcester.
- H. L. Rutter, Esq., M.B.E., M.D., 31, West Parade, Newcastle-on-Tyne.
- J. P. Williams-Freeman, Esq., M.D., Weyhill, Andover, Hants, with
- Alfred Cox, Esq., O.B.E., M.B., Medical Secretary, and
- James Neal, Esq., M.R.C.S., L.R.C.P., Deputy Medical Secretary of the British Medical Association.

It was agreed that (without prejudice to such modification as might appear in the course of discussion to be desirable) the whole subject matter should be considered under the following heads:

- I. The additional services which should be provided.
- II. The practitioners by whom these services should be rendered.
- III. Persons not medically qualified who assist the practitioners—for example, nurse at operation.
- IV. Premises and equipment.
- V. The scheme of organization into which the foregoing should be fitted.

Head I being subdivided as follows:

- (a) Expert "out-patient" medical services.
- (b) General practitioner services not at present available—for example, attendance at confinements, practitioner clinics.
- (c) Laboratory facilities.
- (d) Referees and supervisory medical officers.
- (e) Ancillary services of skilled persons not medically qualified—for example, masseurs.
- (f) Treatment in residential institutions (as in-patients).

This extended conference, just as in the case of the conferences between the Conditions of Service Subcommittee and the Commissioners concerning the present conditions of the existing insurance medical service, is for deliberative purposes only. No decisions will be made by it. The purpose intended to be served is that of bringing together two different kinds of experience and points of view—namely, the public and administrative side and that of the medical profession, respectively, for exploring in advance the various questions which must necessarily or may advantageously arise in the consideration of any future revision of the terms and conditions of insurance medical service, or extensions of the service, so that the ground may be cleared and the task of actual revision,

¹ See SUPPLEMENT, February 1st, 1919, p. 14.

² (i) Medical referees and consultants, with travelling expenses of insured persons presenting themselves for examination. (ii) Provision of specialist consultations in connexion with the treatment of insured persons. (iii) Grants in aid of the equipment and maintenance of clinics for the use of insurance practitioners. (iv) Grants towards the provision of nursing for insured persons. (v) Grants towards the provision of pathological laboratories.

when the time for it arrives, facilitated. For the furtherance of this purpose a report will be issued in due course.

MEDICAL RECONSTRUCTION.

THE Deputy Medical Secretary, Dr. JAMES NEAL, addressed a meeting of the Bucks Local Medical and Panel Committee at the Crown Hotel, Aylesbury, on January 30th. Dr. BAKER, the chairman of the Local Medical and Panel Committee, presided, and there was a large attendance.

Dr. NEAL reviewed the developments which the medical profession was likely to have to face in the near future in connexion with measures of reconstruction which were in contemplation. He negatived any possibility of the immediate introduction of a system of State medical service with whole-time salaried medical officers. He admitted that the State was likely to extend its responsibility in the direction of providing for the medical attendance of increasing numbers of the community, and suggested that the most probable developments in the first instance would be an improvement and possibly an extension of the medical services for which the State had already made itself responsible, including the domiciliary service under the Insurance Acts.

Realizing this a subcommittee of the Insurance Acts Committee had for some months been engaged in discussing with the Insurance Commissioners at round table conferences, and in the light of the experience of the last six years, the lines on which a service might be constituted free from the admitted defects of the present system. The object was to determine the nature of the services which a general practitioner should be required to give under his agreement, what other service ought to be provided, and under what conditions. The question of the amount of remuneration to be paid for those services was not under discussion, and could not be determined until it was known what service the Government was prepared to provide. Then and not till then could the profession be asked to decide the terms on which it was prepared to render the required services.

Mileage had received close attention. It was realized that the special difficulties of country practitioners were not sufficiently appreciated when the present arrangements were made, but their interests were now carefully watched by the Rural Practitioners' Subcommittee, and every effort would be made to secure adequate treatment for them. When the time came, and it was rapidly approaching, for a revision of the bargain made with the profession in 1912, it was absolutely essential that the profession should rally to the support of the Association which a majority of Panel Committees had decided was the proper body to conduct negotiations on their behalf.

Dr. Neal mentioned in detail the more important benefits which the profession had obtained as the result of the Association's efforts, and pointed out that no other medical organization in existence could claim to have accomplished in the interests of practitioners anything that would bear comparison with the achievements of the Association. He deprecated attempts to start rival organizations at this stage, pointing out that it had taken nearly a hundred years to perfect the organization of the British Medical Association, and that it would be quite impossible to build up any new body to replace it. He said that the greatest danger might be looked for in a hitherto unexpected quarter. Thousands of civilian medical practitioners engaged on military service during the last four years had been out of touch with professional opinion. They heard tales of practices which had suffered during their absence, and they too readily believed that those at home had not played the game. That many of those on service had suffered was unfortunately true, but the complaints of disloyal action by men at home were in many cases exaggerated; nevertheless, the feeling was there and must be combated. The efforts made by the men at home to safeguard the interests of absent colleagues must be explained to those returning from military service, and they must be convinced that the conclusions they had so hastily formed were not in accordance with the facts.

He emphasized the value of the work done by the R.A.M.C. as a whole, and suggested that it was only reasonable that the men who returned should have preferential treatment in respect of any public appointments that were available. Many of the men coming out of the army had never yet had any experience of general practice. A State service would naturally appeal to them, and it was therefore desirable to make it easy for them to establish themselves in practice either as principals, partners, or assistants. If the profession was to occupy a proper position in the new order of things, it was essential for

medical practitioners to settle their differences and present a united front. It was idle to suggest that the Association was useless because it could not compel members of the profession to fall into line; nor could any other voluntary organization. The idea that a registered trade union could make outsiders or even its own members fall into line was a delusion. Trade union members joined voluntarily, and could leave when they were not satisfied. The legal immunities of a trade union as applied to the medical profession were of very doubtful value, and could by no means be accepted as an assured fact. Lawyers differed profoundly on this question, and the profession would be ill advised to place any reliance on a form of organization which was at least of doubtful value, and which moreover would never be acceptable to a large proportion of the profession.

British Medical Association.

ANNUAL REPRESENTATIVE MEETING.

JULY 24th, 1919.

THE Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30. By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting. Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

All concerned are reminded that nominations of candidates for election as members of Council by Home Branches or groups require to be forwarded to reach the Acting Financial Secretary and Business Manager not later than May 17th. Nominations may be either by a Division or by any three members of a Branch. Members and Divisions can obtain copies of the appropriate nomination form on application to the office. The nominations will be published in the SUPPLEMENT of May 24th. Where contests occur, election will be by voting papers sent direct by post from the Head Office to each member.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—
Surgeon Captain C. M. Beadnell to the *Victory*, for R.N. Barracks.
Surgeon Commanders: W. S. H. Sequeira to Dartmouth College, W. B. Macleod to the *Iron Duke*, L. E. Dartnell to the *Impregnable*, A. X. Lavertine to the *Marlborough*, R. W. G. Stewart to the *Ajax*, F. Fedarb to the *Vernon*. Surgeon Lieutenants (temporary): W. Edgar to the *Kent*, S. H. M. Johns to the *Esprit*, W. G. Clark to the Portland Depot and Yard, A. B. Danby to R.N. Hospital, Queensferry; S. W. F. Underhill to Naval Base, Granton; E. A. Green to Keyham College, H. O. Blanford to the *Zaria*, E. S. Bowes to the *Royal Arthur*, A. L. Blunt to the *Warspite*, J. H. Blackburn to Naval Base, Falmouth; F. W. Paul to Haslar Hospital, D. Macgregor to R.M.A., Eastney; H. V. Edwards to the *Caesar*, H. J. Bates to the *Sandhurst*, J. Morrison to R.N. Hospital, Peebles; H. C. Broadhurst to Plymouth Hospital, G. H. C. Harding to Malta Hospital, P. Banbury to the *Yarmouth*, A. M. Dunlop to R.N. College, Greenwich; S. L. Harke to the *Columbine*, for Port Edgar; T. W. Drummond to the *Resolute*, for Antigua Naval Base; A. F. R. Wollaston, D.S.O., to the *Wahine*, E. B. Kelley to the *Titanica*, J. Kirker to the *Arrogant*, additional, N. Braithwaite to the *Orion*, A. P. Barrett to the *Cyclops*, for Hova Batt., G. B. S. Long to the *Vivid*, for Withnoe Camp, M. K. Cooper to the *Satellite*, W. L. Berry to the *Centaur*, W. E. Heath to the *Constance*.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Sub-Lieutenant (temporary) G. L. Stanley to the *Gentian*.

ARMY MEDICAL SERVICE.

Temporary Colonels S. M. Smith, C.B. (Captain R.A.M.C.(T.F.)), and W. Thorburn, C.B. (Lieut.-Colonel R.A.M.C.(T.F.)), relinquish their temporary commissions on reposting.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel W. L. Steele, C.M.G., to be acting Colonel whilst employed as Assistant Director of Medical Services of a Division.
To be acting Lieut.-Colonels whilst in command of a medical unit:—
Majors: L. V. Thurston, D.S.O., A. C. H. Gray, Temporary Major H. M. Chasseaud, Captain (acting Major) G. F. Allison, Captains: B. A. Odum, B. Varvill, M.C. (from September 7th, 1917, to February 28th, 1918).

The following relinquish the acting rank of Lieut.-Colonel on reposting:—Majors: F. J. Garland, D.S.O., G. G. Tabuteau, D.S.O., J. M. B. Rahilly, Temporary Major C. V. Mackay.

Captain St. J. D. Buxton relinquishes the acting rank of Major.

The following relinquish their acting rank on reposting: Captains (acting Majors) J. P. Litt, C. J. O'Reilly, M.C., Temporary Captain (acting Major) G. Taylor, Temporary Captains H. B. Atlee, M.C., J. A. Jones, R. S. Frew, P. M. Heath, D. M. Ross, H. D. Ledward, J. L. Gordon, W. Anderson, C. A. H. Gee, P. L. M. Hackett, M.C., B. H. Barton, M.C., S. J. Rowntree, H. W. Gabe, J. R. Craig, M.C., W. H. W. Atlee, A. M. Caverhill.

To be acting Majors:—Captains: W. H. S. Burney, W. D. Anderson, M.C., W. W. MacNaught, M.C., A. L. Aymer, Temporary Captains: A. Mathieson, D. Cowin, W. M. Oakden, T. Winning, A. T. W. Forrester, N. E. Kendall, A. C. Renton, A. Feiling, A. Farquhar, A. Grant, W. E. R. Dimond, A. Scott, S. E. Picken, M.C., F. O. Clarke, M.C., A. V. Craig, M.C., J. Morrison, B. Pickering, H. R. Davies, J. G. Moseley (from October 28th to November 15th, 1918). Whilst specially employed: Temporary Captains J. F. Venables, A. H. Thomas, S. A. W. Munro, M.C.

Captain and Brevet Major J. Gilmore, M.C., retires, receiving a gratuity.

Temporary Captain R. M. Clarke to take rank and precedence in the corps as if his appointment to that rank bore date November 23rd, 1918.
The notification regarding temporary Captain H. T. Lippiatt in the *London Gazette* of January 24th is cancelled.

To be temporary Captains: C. H. Lloyd, temporary Lieutenants B. Blacklock, C. H. G. Goswyck, H. F. Hutchinson.

Late temporary Captains granted the rank of Captain: J. S. S. Steele-Parkins, J. C. King.

Temporary honorary Lieutenant L. M. Earle to be temporary honorary Captain whilst serving with the British Red Cross Hospital, Netley.

The undermentioned temporary Captains relinquish their commissions, and are granted the rank of Majors (substituted for notifications regarding these officers in previous *Gazettes*): J. L. Gordon, B. H. Barton, M.C., S. J. Rowntree, C. A. H. Gee, R. S. Frew, H. B. Atlee, J. R. Craig, M.C.

The following officers relinquish their commissions: Temporary Major and retains the rank of Major: G. F. B. Shapson. Temporary Captain (acting Major) T. D. H. Holmes on account of ill health contracted on active service and retains the rank of Major. Temporary Captain E. L. M. Hackett, M.C., and is granted the rank of Major (substituted for notification in the *London Gazette*, January 6th). Temporary Captains on account of ill health contracted on active service and retain the rank of Captain: B. E. Bailey, M.C., E. C. Gimson, D.S.O., C. E. Droop, R. J. Blenkhorn. Temporary Captain A. G. Brand on account of ill health, and retains the rank of Captain. Temporary Captains and retain the rank of Captain: B. W. Mosher, N. M. Keith, J. A. Matson, J. A. Jones (substituted for notification in the *London Gazette*, January 29th), W. A. L. Marriott, W. Anderson (substituted for notification in the *London Gazette*, January 6th), C. M. G. Elliott, R. M. Walker. Temporary honorary Captains and retain the honorary rank of Captain: A. C. Inman, S. E. T. Shann (on ceasing to be employed with No. 5 British Red Cross Hospital), H. F. Bold-Williams (on ceasing to serve with No. 8 Red Cross Hospital). Temporary Lieutenant E. Cansfield on account of ill health contracted on active service and retains the rank of Lieutenant. Temporary honorary Lieutenant J. O. B. Hodnett on ceasing to serve with No. 8 Red Cross Hospital, and retains the honorary rank of Lieutenant. On ceasing to be employed with St. John Ambulance Brigade Hospital, and retain their honorary rank:—Temporary honorary Majors: C. W. M. Hope, T. Houston. Temporary honorary Captains: F. Coates, W. F. Matthews, F. Hall, C. E. Butterworth, J. M. McCloy.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Lieutenant-Colonel T. D. C. Barry, C.B.E., is granted the acting rank of Colonel.

Majors granted the acting rank of Lieut.-Colonel: R. H. McGiffin, C. D. Bateman, B. R. Bickford, D.S.O.

Captains granted the acting rank of Major: W. Darling, M.C., J. M.

Kirkness, T. S. Rippon, B. A. Playne, D.S.O., P. H. Hadfield, R. J. Knowles, P. L. Moore, A. A. Atkinson, J. J. C. Hamilton, F. C. Johnson, M. R. Dobson, J. MacGregor, M.C., F. N. B. Smart, A. A. Bisset, J. Steadman, L. C. M. Wedderburn, H. M. S. Turner, H. E. Whittingham, A. Scott-Turner, C. J. C. Taylor, C. O. H. Golch, H. G. Anderson, M.B.E., H. A. Hewat, W. Ensrach, D. Ranken.

Captain (acting Major) C. B. Thwaites retains the acting rank of Major whilst employed as Major.

Lieutenants granted the acting rank of Captain: C. H. Vernon, G. W. Harbottle, L. C. Broughton-Head.

Captain D. Ross is transferred to the unemployed list.

Granted temporary commissions:—As Captain: P. O. Moffat, temporary Captain R.A.M.C. (seniority from May 14th, 1918). As Lieutenant: R. H. Turner.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain (acting Major) T. Y. Barkley to be acting Lieut.-Colonel whilst in command of a medical unit.

Captains relinquish the acting rank of Major on reposting: W. C. B. Meyer, A. A. Smalley, M.C.

Captains to be acting Majors: W. Dunlop, O.B.E., G. G. Jack, D. M. Lyon (from January 4th to September 26th, 1918).

Lieutenants to be Captains: C. F. J. Carruthers, J. W. C. Fairweather, H. Roger, A. Bulleid, C. F. Rainer, A. Blackstock, L. C. Goument, W. E. L. G. Clark, A. W. Wells, T. Davies, E. B. Ash, G. W. Coombes, D. V. Halstead, J. R. Cox, M. W. Geffen.

To be Lieutenants: A. St. G. J. McG. Huggett, R. Gainsborough, and W. H. Palmer, from University of London Contingent O.T.C.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

The undermentioned Colonels are granted precedence from June 1st, 1916: A. W. Sheen, C.B.E., W. Ranson, D.S.O., H. E. B. Bruce-Porter, C.M.G., K.B.E., A. M. Connell, A. D. Sharp, C.B., C.M.G., E. J. R. Evans, D.S.O.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieut.-Colonels are granted precedence from June 1st, 1916: R. M. West, D.S.O., F. W. Higgs, J. Mackinnon, D.S.O., E. C. Montgomery-Smith, D.S.O., A. B. S. Stewart, P. S. Hichens, G. A. Troup.

Captain (acting Lieut.-Colonel) G. H. Spencer and Captains (acting Majors) H. B. Low, M.C., and A. G. T. Hanks relinquished their acting rank on ceasing to be specially employed.

Major W. R. N. Smithard to be acting Lieut.-Colonel whilst specially employed.

The announcement regarding Captain J. H. Chaney which appeared in the *London Gazette*, December 21st, 1918, is cancelled.

2nd London General Hospital.—Captain A. S. Daly is seconded for service with a military hospital.

4th Northern General Hospital.—Captain G. J. Lowe to be acting Major whilst specially employed.

1st Western General Hospital.—Captain (acting Lieut.-Colonel) J. M. Hunt relinquishes his acting rank on ceasing to be employed.

APPOINTMENTS.

DOUBLEDAY, F. N., F.R.C.P., M.R.C.S., L.D.S., Assistant Dental Surgeon to Guy's Hospital.

GOULDEN, C. B., F.R.C.S., M.A., M.Ch., M.D. Camb., Assistant Surgeon to Royal London Ophthalmic Hospital (Moorefields Eye Hospital).

KHILIC, C. M.D., F.R.C.S., Honorary Surgeon, Bradford Eye and Ear Hospital.

WAINMAN, James S., M.D., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit 48, and to be attached more particularly to the Dartford and Gravesend County Courts, vice C. J. W. Pinching, M.R.C.S., deceased.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

PRAILL.—On January 31st, 1919, at "Loreto," Mornington Road, Wood-
green, Green, Adela (née Porter), wife of Captain Edward Praill,
R.A.M.C., North Russia Expeditionary Force, of a son (Douglas
Edward Michael).

WRIGLEY.—On February 25th, at 8, Conyngham Road, Victoria Park,
Manchester, the wife of Captain P. R. Wrigley, R.A.M.C.(T.F.), of
a daughter.

MARRIAGE.

BURKE-STEWART.—At St. Columba's Parish Church, Knightsbridge,
London, by the Rev. Archibald Fleming, D.D., on February 25th,
Lieutenant-Colonel Edmund T. Burke, D.S.O., R.A.M.C.(S.R.), son
of Mr. and Mrs. W. M. Burke, Bingham Terrace, Dundee, to Haina
Duff, daughter of the late Charles Stewart and Mrs. Stewart,
Queen Street, Perth.

DEATHS.

SENIOR.—On February 24th, following an operation, Jessie Marguerite,
wife of Dr. A. Senior of Thames Ditton, Surrey, aged 38. Funeral
at Thames Ditton on February 27th, at 2.30 p.m. Friends kindly
accept this the only intimation.

STEPHENSON.—At 11, Bonaccord Crescent, Aberdeen, on February 24th,
William Stephenson, M.D., J.L.D., F.R.C.S.E., Emeritus Professor
of Midwifery of the University of Aberdeen, in his 82nd year.

WISE.—On February 24th, at Dunstowe, Launceston, Cornwall,
Charles Henry Wise, M.D., J.P. (late of Walthamstow), in his
65th year.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Social Evening, Wednesday, 3.30 p.m.
Dr. A. F. Hurst: War Neuroses illustrated by cinematograph
films and lantern slides. Section of Bacteriology and Climatological
Thursday, 5.30 p.m., Discussion: The Spa Physician in Relation
to the Proposed Ministry of Health, to be opened by Dr. C. W.
Buckley (Buxton). Section of Laryngology: Friday, 5.45 p.m.,
Cases and specimens.

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 8TH, 1919.

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British Medical Association.

CLINICAL MEETING, LONDON. APRIL 8th to 11th, 1919.

THE programme for the special clinical and scientific meeting of the British Medical Association to be held, as already announced, in London from April 8th to 11th, is subject to revision, but will not probably undergo any material change. The arrangements have been made by a committee of which Sir T. Clifford Allbutt, K.C.B., F.R.S., President of the British Medical Association, is chairman; it includes the Presidents of the Royal Colleges of Physicians and Surgeons in London; Sir William Osler, Regius Professor of Medicine at Oxford; the Directors-General of the Medical Departments of the Royal Navy, of the Army Medical Service, of the Army Medical Services, France, and of the Canadian Army Medical Service, the Director of Medical Services of the Australian Imperial Force, representatives of the medical services of New Zealand and South African overseas forces, the Medical Adviser to the Secretary of State for India, and the Medical Administrator Royal Air Force.

ACCOMMODATION.

Four subcommittees have been formed, and one of these, that charged with the duty of obtaining premises for the meeting and accommodation for visitors, has arranged that the sections shall be held in the Imperial College of Science, South Kensington, placed at the disposal of the Association for the purpose by Sir Alfred Keogh, G.C.B., M.D., the Rector. The other duty of this subcommittee is causing some anxiety, as hotel accommodation in London is difficult to obtain: many of the large hotels are still occupied by various Government departments, and the others are very full. It is expected that private hospitality will be offered by members living in London, but the extent to which such hospitality will be available has not at present been ascertained, though steps are being taken to do so. Meanwhile, those who intend to be present at the meeting are advised to secure rooms as early as possible; it may be necessary to pay a deposit.

POPULAR LECTURE.

A popular lecture, on the surgery of the war, will be given by Major-General Cuthbert Wallace, C.B., C.M.G., Surgeon to St. Thomas's Hospital; the chair will be taken by Sir John Goodwin, K.C.B., Director-General Army Medical Service.

EXHIBITION.

An exhibition of surgical instruments, hospital furniture, drugs, foods, sanitary appliances, etc., will be held in the Physics Examination Hall, Imperial College of Science and Technology, South Kensington, from Wednesday, April 9th, to Friday, April 11th, both days inclusive. Information as to space, which is being rapidly allotted, can be obtained from Mr. W. E. Warne, Acting Financial Secretary and Business Manager, 429, Strand, W.C.2.

ENTERTAINMENTS.

A reception arranged by the Metropolitan Counties Branch of the British Medical Association will be held at the Guildhall, London, kindly lent by the Lord Mayor, on the evening of Tuesday, April 8th. The guests will be received by Sir T. Clifford Allbutt, K.C.B., F.R.S., Regius Professor of Physic, University of Cambridge, President of the British Medical Association.

On Wednesday evening, April 9th, the Royal Society of Medicine will hold a reception at its house, 1, Wimpole Street, W. The guests will be received by Sir H. D. Rolleston, K.C.B., President of the Society.

On Thursday evening, April 10th, a dinner will take place at the Connaught Rooms (10s. 6d. without wine).

Ladies will be invited to these entertainments. The number of invitations which can be issued is in each case limited, and early application should be made.

GENERAL SECRETARIES.

The General Secretaries of the meeting are:

Mr. CUTHBERT WALLACE, C.B., C.M.G., F.R.C.S., 26, Upper Wimpole Street, W.1.

Dr. GORDON HOLMES, C.M.G., 101, Harley Street, W.1.

Mr. S. MAYNARD SMITH, C.B., F.R.C.S., 28, Wimpole Street, W.1.

The Chairman of the Programme Subcommittee is Colonel J. G. ADAMI, F.R.S., C.A.M.C., Pembroke House, 133, Oxford Street, W.1.

PROVISIONAL PROGRAMME.

SECTION OF MEDICINE.

DISCUSSIONS will be held as follows:

Wednesday, April 9th.—10 a.m. to 1 p.m.

War Neuroses.—Chairman: Colonel H. MAUDSLEY, C.M.G., C.B.E., F.R.C.P., A.A.M.C. Introducer: Lieut. Colonel F. W. MOTT, F.R.S., R.A.M.C. A discussion will follow.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(In conjunction with the Section of Preventive Medicine and Pathology, *q.v.*) The subject will be treated under the following headings:

1. Clinical Aspects. Introduced by Major-General Sir WILMOT HERRINGHAM, C.B., A.M.S.

(a) Short account of epidemics of 1918 in France. Contrast between clinical features of spring and autumn epidemics—for example, respiratory complications.

(b) Epidemic in England. Contrasts and resemblances to above.

2. Epidemiology. Introduced by Captain M. GREENWOOD, R.A.M.C.

3. Etiology. Introduced by Major BOWMAN, C.A.M.C.

N.B.—The pathological aspects will be treated by means of demonstrations.

Friday, April 11th.—10 a.m. to 11.30 a.m.

Venereal Disease.—Chairman: Sir WILLIAM OSLER, Bt. The subject will be introduced by Brevet Colonel L. W. HARRISON, D.S.O., K.H.P., Lecturer in Venereal Diseases Military Hospital, Rochester Row. A discussion will follow.

11.30 a.m. to 1 p.m.

Prognosis in Cardio-vascular Affections.—Chairman: Sir JAMES MACKENZIE, M.D., F.R.S. Introducer: Dr. THOMAS LEWIS, F.R.S. A discussion will follow.

DEMONSTRATIONS.

It is hoped that the following demonstrations may be arranged to take place in the afternoon beginning at 2.30:

Wednesday, April 9th.

Neurological Cases. National Hospital for Paralyzed and Epileptic, Queen Square.

Diseases of the Chest. Brompton Hospital.

Mine Gas Poisoning. Lieut.-Colonel D. Dale Logan, D.S.O., R.A.M.C.

Thursday, April 10th.

Newer Methods in Cardio-diagnosis. National Heart Hospital, Westmoreland Street, Marylebone.

Cases and Specimens illustrating Cardio-vascular Disease. Dr. Thomas Lewis, F.R.S., at University College Hospital.

Air Force Tests.

Drawings of Throat in various Acute Infectious Diseases. Dr. H. Drinkwater, at St. Thomas's Hospital.

Friday, April 11th.

Venereal Diseases. Colonel L. W. Harrison, D.S.O., Military Hospital, Rochester Row.

War Neuroses. Lieut.-Colonel F. W. Mott, F.R.S., Maudsley Clearing Hospital, Denmark Hill.

Diseases of Children. Hospital for Sick Children, Great Ormond Street.

It is probable that other demonstrations will be arranged and that some of the above will take place on more than one afternoon.

Secretaries of Section.—Colonel C. T. C. DE CRESPIGNY, D.S.O., A.A.M.C., Colonel R. J. MILLARD, C.M.G., D.D.M.S. A.A.M.C., 429, Strand, W.C.2.

"SECTION OF SURGERY.

Discussions on the following subjects have been arranged to take place in the morning of the day indicated.

Wednesday, April 9th.

Gunshot Wounds of the Chest.—Chairman: Sir GEORGE MAKINS, G.C.M.G. Introducers: Colonel T. R. ELLIOTT, D.S.O., F.R.S., and Colonel G. E. GASK, C.M.G., D.S.O.

Thursday, April 10th.

Wound Shock.—Chairman: Sir ANTHONY BOWLEY, K.C.M.G. Introducers: Professor W. M. BAYLISS, F.R.S., and Dr. H. H. DALE, F.R.S.

Friday, April 11th.

A Review of Reconstructive Surgery.—Chairman: Sir ROBERT JONES, C.B. Introduced by Major R. C. ELMSLIE and Major W. R. BRISTOW, R.A.M.C.

DEMONSTRATIONS.

The following demonstrations have been arranged to take place in the afternoon, beginning at 2.30:

Wednesday, April 9th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.
2. Specimens illustrating Wounds of Arteries; at the Royal College of Surgeons.
3. On X Rays.

Thursday, April 10th.

1. On Facial Injuries; at Sidecup.
2. On Injuries of the Eye.
3. Specimens illustrating Fractures of the Skull; at the Royal College of Surgeons.

Friday, April 11th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.
2. Specimens illustrating Gunshot Wounds of the Abdomen; at the Royal College of Surgeons.
3. On X Rays.

Secretary of Section.—Mr. C. H. S. FRANKAU, D.S.O., 7, Tenby Mansions, Nottingham Street, W.1.

SECTION OF PREVENTIVE MEDICINE AND PATHOLOGY.

Discussions have been arranged for the morning meetings on the following subjects:

Wednesday, April 9th.—10 a.m. to 1 p.m.

The Dysenteries: Bacillary and Amoebic.—Introduced by Colonel L. S. DUDGEON, C.M.G., A.M.S., and Professor W. YORKE.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(At a joint meeting with the Section of Medicine, *q.v.*)

Friday, April 11th.—10 a.m. to 1 p.m.

Malaria.—Chairman: Sir RONALD ROSS, K.C.B., F.R.S. Introduced by Lieut.-Colonel S. P. JAMES, I.M.S.

DEMONSTRATIONS.

Demonstrations have been arranged to take place in the afternoon, beginning at 2.30.

Wednesday, April 9th.—On Malaria.

Thursday, April 10th.—On the Pathology of Dysentery; at St. Thomas's Hospital, Albert Embankment.

Friday, April 11th.—On the Anaerobic Bacteria which infect Wounds; and On the subject of Filter-passing Viruses in Influenza and other Diseases, and Rickettsia Bodies; at the Lister Institute of Preventive Medicine, Chelsea Gardens. On Malaria; by Sir Ronald Ross.

Secretaries of Section.—Dr. J. A. ARKWRIGHT, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.1; Major A. M. W. ELLIS, C.A.M.C., 429, Strand, W.C.2.

THE WAR COLLECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The collection of pathological specimens from the seat of war in France will be on view daily from 10 till 6 (on Saturday 10 till 1) at the Royal College of Surgeons, Lincoln's Inn Fields, W.C.2. It comprises a large and complete series of gunshot fractures of the bones; and another series, equally complete, of gunshot injuries of the different organs and soft structures, as well as specimens of disease incident to warfare, the effects of gassing, trench nephritis, gas gangrene, etc. The entire collection is systematically arranged, and each preparation is furnished with a brief description and history. So far, three demonstrations have been arranged. Each will occupy about one hour, and will be given from 3.30 till 4.30.

Wednesday.—Sir George Makins: Injuries of Arteries.

Thursday.—Professor Arthur Keith, F.R.S.: Fractures of the Skull.

Friday.—Mr. C. S. Wallace, C.B.: Abdominal Injuries.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL, 1919-20, BY BRANCHES NOT IN THE UNITED KINGDOM.

The following nomination has been received from the undermentioned grouped Branches (By-law 49):

THOMAS DUNCAN GREENLEES, M.D., F.R.S.E., of "Rostrevor," Kirtleton Avenue, Weymouth, for the Border (S. Africa), Cape of Good Hope (Eastern and Western), East Africa and Uganda, Egyptian, Gibraltar, Griqualand West, Malta and Mediterranean, Natal Coastal, Natal Inland, Orange Free State, Pretoria, Rhodesian, and Witwatersrand grouped Branches.

No other nomination having been received, the said Dr. T. D. Greenlees is hereby duly elected as a Member of the 1919-20 Council.

By order of the Council,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

March 1st, 1919.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

CENSUS OF MEDICAL STUDENTS, JANUARY, 1919.

At the request of the Ministry of National Service, the President of the General Medical Council has obtained returns from the medical schools of the United Kingdom, giving the number of medical students in actual attendance on courses of professional instruction in January, 1919, for each year of the curriculum. The statistics, compared with the corresponding returns (in italics) for May, 1918, give the following aggregate results:

	First Year.		Second Year.		Third Year.		Fourth Year.		Fifth Year.		Totals.			
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	All Students.	
England and Wales ..	1089	350	700	326	451	291	354	141	428	108	3022	1216	4238	
	<i>92</i>	<i>329</i>	<i>472</i>	<i>256</i>	<i>362</i>	<i>226</i>	<i>300</i>	<i>116</i>	<i>514</i>	<i>71</i>	<i>2140</i>	<i>1019</i>	<i>3159</i>	
Scotland ..	617	295	483	306	335	210	252	155	333	108	2020	1075	3095	
	<i>565</i>	<i>222</i>	<i>329</i>	<i>259</i>	<i>319</i>	<i>185</i>	<i>231</i>	<i>129</i>	<i>315</i>	<i>103</i>	<i>1587</i>	<i>898</i>	<i>2485</i>	
Ireland ..	446	112	396	125	400	92	339	64	175	10	1756	403	2159	
	<i>391</i>	<i>111</i>	<i>418</i>	<i>164</i>	<i>369</i>	<i>73</i>	<i>278</i>	<i>80</i>	<i>115</i>	<i>12</i>	<i>1553</i>	<i>373</i>	<i>1886</i>	
Totals ..	2152	755	1579	757	1186	593	945	361	936	222	6798	2592	9190	
	<i>1878</i>	<i>665</i>	<i>1249</i>	<i>619</i>	<i>1050</i>	<i>484</i>	<i>739</i>	<i>275</i>	<i>944</i>	<i>200</i>	<i>4880</i>	<i>1770</i>	<i>6650</i>	
Grand total for January, 1919	3490	...	Grand total for October, 1917	7048
Grand total for May, 1918 ..	...	...	...	...	2676	...	...	...	...	January, 1917	...	...	6582

FUTURE OF THE VOLUNTARY HOSPITALS.

BY

JAMES PHILLIPS, F.R.C.S. (EDIN.).

SURGEON, ROYAL INFIRMARY, BRADFORD, YORKS.

The voluntary hospitals have always been staffed by part-time medical officers who have been trained on what may be called the apprenticeship plan. The physician, before he attains to full office, will have served the hospital first as resident and then as assistant physician, usually for a number of years. He is one of several, and knows that his success will depend upon the energy and ability which he puts into his work. There are always colleagues at hand with whom to discuss difficult points. He can call upon the ear or eye specialist, the bacteriologist or the radiographer or the surgeon to assist in the full elucidation of his cases. And he will be sure to put all he knows into the examination of his case before he calls in his colleague, for he will not wish the latter to score a point over him by discovering something which he himself might have found. In these consultations and discussions new facts are communicated, and knowledge kept up to date.

Contrast with this the effect of the kind of whole-time appointments commonly made by public bodies. A clinic is set up in an isolated building and an officer placed in charge of it, who will henceforth have little or no opportunity to see any cases but those of his own speciality; who has no colleagues with whom to discuss his cases, no one to stimulate him to keen emulation; worse still, no one to criticize him and thus to keep in check the all-too-human tendency to remember only our successes and to allow to fade from the memory our failures and so to become puffed up with pride.

In instances known to many of us the results of appointing whole-time officers to isolated clinics has been most unsatisfactory. A newly-fledged medico, with possibly, but by no means necessarily, a year's experience as hospital resident, but otherwise no knowledge of the vast range of medical science except what he could absorb while a student, is appointed to a municipal clinic. He has authority thrust upon him, the civic magnates hasten to acclaim him as a specialist (he whose claim to specialism rests on the fact that he has had no time or opportunity to know anything outside his own particular branch of medicine and so must necessarily lack perspective), and the patients accept his dicta as infallible. Is there any wonder that, given the appropriate temperament, such an one soon forms and gives expression to a belief in his own superability and knowledge beyond that of everybody else?

What I am pleading for is not, of course, impossible outside the voluntary hospital. The Orthopaedic Department at Beckett's Park Hospital has been organized by

Extracts from a paper read at a meeting of the Bradford Division of the Yorkshire Branch of the British Medical Association.

Lieut.-Colonel Littlewood on the plan of the old voluntary hospital, and it is a delight to see the way the work is done there by surgeons and physicians, neurologists, electrical specialists, and massage specialists. New-comers work under the eye of the seniors. Once or twice a week each man brings his cases to a consulting room, where diagnosis and treatment are discussed: interested outsiders are admitted to these consultations. Surely there can be no question as to which is the better method. "The function of the voluntary hospitals should be to supply treatment by specialists, such treatment being made in every respect as perfect as possible, and the hospitals in which it is given equipped and maintained, in all their special and general departments, in the highest state of efficiency to meet the requirements of the latest medical and surgical and nursing science and education."

The war has demonstrated the possibility of setting up and staffing hospitals where large numbers of patients can be admitted for treatment and can remain until they are quite convalescent, instead of having to wait for weeks, perhaps for months, before a bed is available and being hustled out with a wound barely healed, to make room for someone else. If this can be done for the soldier it can surely be done in peace time for the civilian. Only, of course, it will require considerable financial help from the public purse. But it can hardly be said that any principle is at stake.

In Bradford an agreement exists between the Infirmary Board and the Insurance Committee by which the latter should pay for the treatment as infirmary in-patients of cases of surgical tuberculosis; venereal cases and war pensioners are also paid for out of public funds. The same medical officer may be accepting payment for treating a patient in one bed and treating that patient's brother in the next bed for nothing. The radiologist may receive a fee for examining a discharged soldier and may be expected to examine the man's wife for nothing. The laryngologist may remove a child's tonsils at the municipal hospital of which he is a salaried officer, but if the child's older brother requires the same operation he may have to do it at the infirmary for nothing.

Adequate accommodation for all those who require institutional treatment cannot, in my opinion, be obtained by voluntary subscriptions alone. And the chief advantages of the voluntary hospitals have been, I think, not the way in which they have been financed but the way in which they have been staffed.

I understand that in Canada a hospital system is in existence which meets the ideal here indicated. In the provincial capital there is a large hospital to whom all who require specialist treatment are admitted whatever their financial or social position may be. The staff is appointed on the English voluntary hospital plan, but is larger relatively to the number of beds. Patients are divided into three classes. Those who cannot afford to pay

anything are paid for out of public funds, and these are admitted under the surgeon or physician for the week. Those who can afford to pay part of their cost have the right to choose which member of the staff they go in under. Those who can pay all the costs choose their own medical man, whether on the staff or not, and pay for rooms and nurses and extras just as they would do in a nursing home in this country. The medical staff are part-time officers, paid for the work they do, at the hospital, but free to do other work also, therefore having that stimulus to effort which, however much we may regard it as a sign of imperfection, is most assuredly a factor to be reckoned with.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Lieutenant (temporary) A. Muirhead to R.N. War College, Devonport.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Sub-Lieutenant (temporary) J. S. Lyle to the *Sweetbriar*.

ARMY MEDICAL SERVICE.

Temporary Colonel Sir A. E. Garrod, K.C.M.G., F.R.S. (Lieut.-Colonel R.A.M.C.(T.F.)), relinquishes his temporary commission on reposting.

Temporary Colonel Sir Aimroth E. Wright, K.B.E., C.B., F.R.S., relinquishes his commission, and retains the rank of Colonel.

Temporary Lieut.-Colonels to be temporary Colonels: H. Wade, D.S.O. (Captain R.A.M.C.(T.F.)), C. C. Choyce, August 24th, 1918 substituted for notification in the *London Gazette*, September 7th, 1917.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel J. E. Broaden is placed temporarily on the half-pay list on account of ill health contracted on active service (substituted for notification in the *London Gazette*, January 4th).

Lieut.-Colonel D. E. Curme resigns on retired pay.

To be acting Lieut.-Colonels whilst specially employed: Major A. C. Osburn, D.S.O. (Temporary Captain E. R. Hunt).

Major M. C. Wetherell retires with a gratuity on account of ill health contracted on active service.

Captain W. J. Tobin relinquishes the acting rank of Lieut.-Colonel on reposting.

Captain E. L. Puddicombe relinquishes the acting rank of Major on reposting.

Captain J. E. Hepper to be acting Major whilst specially employed.

F. E. T. Nathani, late temporary Captain, is granted the rank of Captain.

Lieutenants (temporary Captains) to be Captains: O. D. Jarvis, (acting Major) J. La F. Lauder, D.S.O., M.C. (and to retain his acting rank); F. H. Sarfield, J. A. Binning, (acting Major) J. F. Bourke, M.C. (and to retain his acting rank); J. E. Rusby, M.C.

Temporary Lieutenants to be temporary Captains: M. P. Thomas, G. R. Bickerstaff, W. P. Philip, M.C., C. I. Iderton, J. W. Robertson, C. M. Bradley, C. Fletcher, E. J. Blewitt, H. E. Kitchen, H. G. G. Neilson, H. C. Attwood, J. D. McKelvie, A. M. Clare, F. L. Rigby, W. Hagby, B. G. Brooke, H. K. Waller, W. Robertson.

Officers relinquish their commissions:—Temporary Major on account of ill health and retains the rank of Major: G. H. W. Humphreys. Temporary Majors and retain the rank of Major: E. D. Hancock (on ceasing to be employed with the Guildford War Hospital); E. Black, Temporary Major G. P. Mills. Temporary Captains (acting Majors) and retain rank of Major: J. P. Cahir, F. C. Greig, M.C.

Temporary Captain on account of ill health and is granted the rank of Major: John Lamont substituted for notification in the *London Gazette*, January 17th). Temporary Captain and is granted the rank of Major: J. L. Menzies, M.C. (substituted for notification in the *London Gazette*, January 7th). Temporary Captains on account of ill health contracted on active service and retain the rank of Captain: H. Bovers, M.C., A. N. E. Rodgers, A. B. Northcote, H. Peters, R. N. Berman, C. E. Redman. Temporary Captain T. D. Miller on account of ill health caused by wounds and retains the rank of Captain.

Temporary Captains, and retain the rank of Captain: T. B. Jobson, A. Drouin, T. S. G. Martin, E. L. MacKenzie, M.C., J. V. Brown, M.C., H. Crassweller, A. W. Allan, J. B. O'Reilly, A. W. S. Siegel, J. H. Addinell, J. B. Alexander, R. L. Rea, J. Hogg, R. M. Hewitt, H. C. Rea, T. J. Kelly, D. P. Curran, T. Tierney, J. R. Williamson, J. Tate, G. P. Burt, H. V. Welch, A. J. L. Speechly, W. S. Lindsay. Temporary Captain R. S. Topham (on transfer to R.A.P.). Temporary honorary Captain S. Wicks (on ceasing to serve with No. 8 British Red Cross Hospital, and retains the honorary rank of Captain). Temporary Lieutenant J. M. Flavell and retains the rank of Lieutenant.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain R. D. Goldie (Captain R.A.M.C. (S.R.)) relinquishes his commission on ceasing to be employed.

Granted temporary commissions:—As Captains: W. F. Jones (Temporary Surgeon Lieutenant R.N.), R. S. Topham (temporary Captain R.A.M.C.).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains relinquish their commissions and retain the rank of Captain: A. C. Court (on account of ill health), N. L. Joynt, M.C., and C. L. Gaussen (on account of ill health contracted on active service).

Lieutenants to be Captains: W. P. Nelson, R. H. Chadwick, J. G. McCann, A. F. M. Phoss, (t. V. MacAlevey, M.C.), I. H. Zortman, C. S. Jaker, R. B. Britton, H. E. Rhodes, A. S. Westmorland.

Police Lieutenants: P. S. G. Cameron, L. H. Bartram.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel T. C. D. Bedell to be acting Colonel while commanding P.P.C.R.C. Hospital.

Temporary Major F. B. Carron to be temporary Lieut.-Colonel.

Temporary Captain (acting Lieut.-Colonel) C. F. Martin to be acting Colonel while employed as Consultant Physician (Branch of the D.M.S.).

To be acting Lieut.-Colonels:—Temporary Majors: W. H. Merritt while employed at a Canadian Special Hospital, J. T. Hill while employed as Senior M.O., Canadian Concentration Camp.

Temporary Captains to be acting Majors:—While employed at Canadian Stationary Hospitals: V. N. Mackay, J. S. Hudson, M.C. While employed with Canadian Field Ambulance: H. C. Davis, M.C. While employed at a Canadian General Hospital: G. W. A. Aitken, A. J. Lomas.

Temporary Captain O. F. Farley is dismissed the service by sentence of a general court-martial, February 3rd, 1919.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

The undermentioned from R.A.M.C.(T.F.) to be Colonels with precedence as from June 1st, 1916:—Lieut.-Colonels (acting Colonels): R. Pickard, C.M.G., P. Kelly, L. J. Blandford, J. Clay, Lieut.-Colonels: A. K. L. Wear, C.M.G., G. C. Averill, H. D. Brook, A. B. Soltan, C.M.G., O.B.E., P. C. Burgess, H. C. Dent, G. H. Edington, J. M. Rogers-Tillstone.

ROYAL ARMY MEDICAL CORPS.

To be acting Lieut.-Colonels whilst specially employed:—Majors: J. Scott, W. A. Thompson, Captains (acting Majors): D. G. Rice-Oxley, M.C., H. J. Dunbar, D. C. L. Fitzwilliams, G. H. Domin.

The following officers relinquish the acting rank of Lieut.-Colonel on ceasing to be specially employed:—Majors (acting Lieut.-Colonels): E. Turton, A. A. Martin. Captain (acting Lieut.-Colonel) H. F. Wilkin, M.C.

Captain (acting Major) C. D. S. Agassiz, M.C., is granted the pay and allowances of his acting rank.

Captains (acting Majors) relinquish their acting rank on ceasing to be specially employed: W. H. Milligan, E. L. Martin, R. C. Clarke.

Captains to be acting Majors whilst specially employed: J. A. Willett, C. D. Law, H. Henry, M.C., H. P. Ashe, J. G. Hill, F. S. Bedale, M.C., A. M. Gibson, G. E. J. A. Robinson, J. G. Morgan, M.C., A. M. Jones, P. J. Smyth.

Captain M. G. Foster to be Major.

Officers relinquish their commissions: Major C. R. Larnie (on account of ill health and retains the rank of Major). Captains (on account of ill health and retain the rank of Captain): E. H. Bingley, T. R. Bowen, E. Smeed.

2nd Eastern Hospital.—Majors T. H. Ionides and W. Broadbent are restored to the establishment.

1st London Sanitary Company.—Lieutenant S. C. Rigg to be Captain.

2nd London Sanitary Company.—Captain (acting Major) J. Chalmers relinquishes his acting rank on vacating the appointment of Deputy Assistant Director of Medical Services. Lieutenant D. M. Neil to be Captain.

3rd London General Hospital.—Captain S. M. Smith, C.B., is restored to the establishment.

Lowland Casualty Clearing Station.—The announcements regarding Captain J. Chalmers which appeared in the *London Gazette* of August 3rd, 1917, and October 31st, 1918, are cancelled.

1st Northern General Hospital.—Captain N. Hodgson to be acting Major whilst specially employed, and to remain seconded.

2nd Scottish General Hospital.—Lieut.-Colonel Sir J. Fayer, Bt., C.B.E., is retired on completion of tenure of command and retains his rank, with permission to wear the prescribed uniform.

3rd Southern General Hospital.—Captain C. H. Saunders to be acting Major whilst specially employed.

1st Western General Hospital.—Captain (Brevet Major) R. B. Kelly, C.B., is restored to the establishment (substituted for notification in the *London Gazette*, February 4th).

2nd Western General Hospital.—Captain (acting Major) G. Wright relinquishes his acting rank on ceasing to be specially employed.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

DEVANE.—On February 26th, 1919, at 1, Upper Hartstonge Street, Limerick, the wife of J. P. Devane, M.D., F.R.C.S., of a son.

SIMPSON.—On February 27th, at 34, Albert Road, Regent's Park, N.W., to Kathleen (née Reid), the wife of Captain K. Simpson, R.A.M.C., a son.

DEATHS.

CHICK.—On February 26th, at 21, Endsleigh Street, W.C., from influenza and pneumonia, Dorothy Chick, M.D., B.S., Resident Medical Officer at Marlborough Maternity Section of the Royal Free Hospital, youngest daughter of Samuel and Emma Chick of Chertsgate, Ealing, and Branscombe, Devon, aged 31.

GRANT.—On March 1st, from pneumonia following influenza, Louisa, wife of Leonard Grant, M.D., New Southgate.

DIARY FOR THE WEEK.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W., Thursday, 5 p.m.—First Milroy Lecture by Dr. J. C. McVail: Half a Century of Small-pox and Vaccination.

ROYAL SOCIETY OF MEDICINE.—Social Evening, Wednesday, 8.30 p.m., Dr. Henry Head, F.R.S.: Disease and Diagnosis. Section of Psychiatry: Tuesday, 5 p.m. Dr. C. Stanford Read: War Psychiatry. Section of Neurology: Thursday, 8.30 p.m. Dr. A. E. Carver: Biological Effects of High Explosives. Section of Epidemiology and State Medicine: Friday, 5.30 p.m. Dr. H. M. Vernon: Industrial Accidents. Members wishing to dine are requested to communicate with Captain Greenwood, 7, Northumberland Street, W.C.2, not later than March 12th.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
MARCH.	
15. Sat.	London: Science Committee, 11 a.m.

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 15TH, 1919.

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THE BRITISH MEDICAL ASSOCIATION AND THE MINISTRY OF HEALTH.

THE following statement has been issued by the Medical Department of the British Medical Association:

I.—GENERAL

1. In view of the misconceptions that appear to exist regarding the action the Association has taken in connection with the movement to establish a Ministry of Health it is thought desirable to publish the following statement.

2. The Council first took up this matter in the beginning of 1917 on hearing rumours that the Local Government Board proposed to introduce legislation to stimulate local authorities to provide nurses and midwives for expectant mothers, and medical attendance and treatment, possibly including domiciliary treatment, for children under 5 years of age. The possible effects of this were so important that a deputation went to the President of the L.G.B.¹ and the Council as a result of this interview was convinced that its proposal for the creation of a Ministry of Health was the only thorough and scientific way of dealing with such a great and complicated business.

3. In view of the strong lay agitation which was taking place on this subject, the Council felt that the Association must act at once without waiting for a discussion on the subject by the Representative Body in July following.

The Council therefore formulated the outlines of a scheme which was sent to Lord Rhondda, then President of the L.G.B., published in the Supplement to the *Journal*² and presented to the Representative Meeting, July, 1917, when it was discussed.³

4. The Meeting gave general approval to the scheme and instructed the Council to consider the amendments presented to that Meeting or subsequently by any Division; to present the amended scheme to the Government; and secure its acceptance so far as that was found to be possible. The Meeting also passed the following resolution:—

"That a Ministry of Health should be created to take over from the existing Government Departments such duties as are concerned with the health of the community, and to deal with these duties only."

5. The Council then set up a special Ministry of Health Committee to consider the question. The members of this Committee were specially chosen so that all branches of the profession should be represented, also different parts of the country.⁴ This Committee had before it not only the views expressed by Divisions and Branches of the Association, but representations from the Association of County Medical Officers of Health, the Society of Medical Officers of Health,

the Poor Law Medical Officers' Association of England and Wales, and various bodies representing National Health Insurance interests. The Committee early found that all parties were agreed in objecting to the Local Government Board's proposed legislation for conferring new powers on local authorities as regards maternity and infant welfare, in lieu of the larger scheme of a Ministry of Health. The Committee accordingly forwarded to the War Cabinet a letter of protest.⁵

6. In December, 1917, the representatives of the Association had an informal conversation with Dr. Addison when he stated the general position of the Government on the question of creating a Ministry of Health, viz., that it was prepared to bring in a Bill for such a Ministry if substantial agreement could be come to between the various bodies affected, and that he had been deputed by the Government to confer with these bodies. Dr. Addison was informed of the action so far taken by the Association, and the scheme formulated by the Association was laid before him. He asked for the views of the Association upon certain specific points, which were afterwards sent to him.

7. In March, 1918, the Council published its scheme with an introduction suitable for the public, placed it on sale, and sent it gratis to the newspapers, to Members of Parliament, to the officials of many public bodies, and to the Secretaries of Divisions and Branches.

8. In March, 1918, the Committee again met Dr. Addison after seeing the draft Bill. They informed him of the objections that were made to some of the provisions of the Bill, and to the omission of certain powers which they thought the Ministry ought to have. Special attention was given to the question of the constitution and powers of the Advisory Committee, and Dr. Addison promised to give the representations made to him his serious consideration. The latest draft of the Bill shows that he has done so.

9. In placing the Association's scheme before Dr. Addison, opportunity was taken to modify it in certain details, though no alterations in principle took place, and the altered scheme was placed before the Representative Body in July 1918, when the action of the Council was approved. The Representative Meeting further passed the following resolutions:—

"That this Representative Meeting of The British Medical Association urges upon the Government the importance, for the general welfare of the nation, of immediately establishing a Ministry of Health upon a comprehensive basis, and provided with adequate expert medical and scientific advisors. This Meeting trusts that the conflicting interests of Government Departments may not be allowed to obstruct the early realisation of this urgent reform."

which was afterwards sent to the Prime Minister and Sir George Cave, the Chairman of the Cabinet Committee on Home Affairs which then had the draft Ministry of Health Bill under consideration.

10. The Meeting⁶ further instructed the Council to get into touch with the Royal Colleges, and such other bodies or corporations as might interest themselves in the matter of securing a Ministry of Health.

¹ *B.M.J.*, 5th May 1917, p. 102.

² *B.M.J.*, Supplement, 5th May, 1917, pp. 89-90.

³ *B.M.J.*, 4th Aug., 1917.

⁴ The members of the Committee are:—Sir T. Clifford Allbutt, K.C.B. (Cambridge), Dr. T. W. H. Garstang (Altrincham), Dr. J. A. Macdonald, LL.D. (Taunton), Dr. G. E. Baskip (London), Officers of the Association; Dr. T. Ridley Bailey (Bilston), Dr. Alice M. Bonham (London), Dr. M. G. Biggs (London), Dr. H. B. Brackenbury (Hornsey), Dr. O. Butler (London), Dr. H. J. Cardale (London), Dr. H. J. Campbell (Bradford), Maj.-Gen. Sir Bertrand Dawson, G.O.V.O. (London), Maj. J. P. Gordon Dill (Hove), Dr. E. J. Donville (Exeter), Dr. J. R. Drever (Glasgow), Maj. W. McAdam Eccles (London), Dr. C. E. S. Flemming (Bradford-on-Avon), Maj. E. R. Fothergill (Hove), Dr. P. V. Fry (Sowerby Bridge), Mr. N. Bishop Harman (London), Prof. A. Hestock Hill (Birmingham), Dr. J. Kennish (London), Sir Malcolm Morris, K.O.V.O. (London), Mr. E. B. Turner (London), Mr. T. Jenner Verrall.

⁶ *B.M.J.* Supplement, Dec. 1st, 1917.

11. A copy of the Association's scheme was sent to the Royal College of Physicians of London, the Royal College of Surgeons of England; the Royal Colleges in Scotland and Ireland, and the Faculty of Physicians and Surgeons of Glasgow, and they were informed that the Association would be glad to co-operate with them in the matter. Various expressions of opinion were received in reply.

12. The Royal College of Physicians, London, and the Royal College of Surgeons, England, had set up a Joint Committee to consider the question, and the Royal Society of Medicine had also set up a Committee for the same purpose. A joint conference with these Committees was held on November 1st, 1918, at which it was found that there was very general agreement on main principles.⁷

13. Another conference took place on February 4th, 1919, when the question as to whether there should be a separate Medical Advisory Committee, or whether the medical members should form part of a general Advisory Committee of the Ministry was discussed together with certain proposals as to the method of nomination of the medical members to any Advisory Committee or Committees that might be set up.

14. In October, 1918, Dr. Addison met the Ministry of Health Committee and explained the alterations that had been made in the Bill, which was presented to the House of Commons in November, 1918.⁸

15. The Government introduced the Bill in the new Parliament on February 17th, 1918. With the exception that the promise of the Government to deal as soon as possible with the Poor Law question is now embodied in the Bill it remains as before with minor exceptions.

II.—EXAMINATION OF THE MAIN PROVISIONS OF THE BILL.

1. The Ministry of Health is to have for its duty the carrying out and co-ordination of measures for all health purposes, but for certain reasons which have been fully explained, it is declared not to be possible at the beginning to disassociate from the Ministry some administrative matters of a non-medical kind, which are at present under the jurisdiction of the Local Government Board, though powers are taken in the Bill to transfer these by Order in Council as soon as possible.

2. All central departments dealing with health matters, are not as yet included under the Ministry but only those of the L.G.B. of the Insurance Commissioners, the health duties of the Board of Education concerning expectant mothers and children under 5 years of age, the powers of the Privy Council as regards The Midwives Act, the Home Office duties under The Children Act. The Local Government Board and The National Health Insurance Commission will cease to exist.

3. Powers are taken to enable the Ministry to take over, as thought advisable, and under Orders in Council, the other health duties of the Board of Education, the Powers of the Ministry of Pensions with respect to the health of disabled officers and men, the powers of the Home Office, so far as concerns the Lunacy and Mental Deficiency Acts, and the powers of any other Government Departments which relate to health.

4. Consultative or Advisory Councils are to be provided for the Ministry and it is agreed that they shall (i.) include persons of both sexes and consist of persons having practical experience of the matters referred to the Council; (ii.) have direct access to the Minister; (iii.) meet regularly; (iv.) have power to appoint Subcommittees which may contain persons not members of the Council; (v.) consider not only matters referred to them, but have the right to make representations which the Minister is bound to consider and (vi.) be subject to triennial election.⁹

5. There is to be a separate office in Wales for dealing with the powers and duties transferred to the Ministry from the Welsh Insurance Commissioners.

6. The Bill applies to Scotland but sets up a Scottish Board of Health with the Scottish Secretary at its head, and includes the L.G.B. Scotland, and the Scottish Insurance Commissioners. The Government have however announced their intention of bringing in a separate Bill for Scotland.

7. Ireland is not included and the Irish Insurance Commission is to act under the Irish Secretary. The Government, however, on First Reading left it to the Grand Committee to include Ireland if it thought fit so to do.

8. The Bill does not deal in any way with local administration, which is left for further legislation. The Government has declared it to be impossible at the present time to undertake this legislation, which presents great difficulties.

⁷ B.M.J., November 9th, 1918, p. 625.

⁸ B.M.J. Supplement, November 20th, 1918.

⁹ Items (ii.) to (vi.) are dealt with, not in the Bill, but in a Draft Order in Council, which it is stated will be made as soon as the Bill is passed.

III.—FUTURE ACTION.

1. The Ministry of Health Committee is concentrating its attention at present, in co-operation with the Conjoint Committee of the Royal Colleges and the Committee of the Royal Society of Medicine on the important problems connected with the formation constitution and duties of the Medical Advisory Council or Councils. On these points it expects shortly to be in a position to consult the profession.

2. When the Ministry is formed it will be necessary for the profession to consider the many problems involved in local organisation and administration, including the questions of the improvement of the medical service by provision of more and better institutional treatment, consultative clinics or centres, etc. These cannot be immediate objects of practical politics until the Ministry and its Advisory Councils have had time to get established and take a survey of the possibilities and needs of the situation. But the profession must be prepared with its views in order that it may place them before the Government and the Minister, and so take its part in guiding the reconstructed health administration of the country. On all these subjects the Committee proposes in due course to consult the profession.

SOUTH AFRICAN COMMITTEE.

A meeting of the South African Committee of the British Medical Association was held in Government Buildings, Bloemfontein, on September 12th and 13th, 1918, with Dr. A. Jasper Anderson, President, in the chair. The following represented the several Branches: Dr. Jasper Anderson and Dr. H. W. Reynolds (Cape of Good Hope Western Province), Dr. A. Barcroft Anderson and Dr. L. Hill (Border), Dr. Dunston (Pretoria), Dr. Watkins-Pitchford and Dr. Napier (Witwatersrand), Dr. Manning and Dr. de Kock (Orange Free State and Basutoland).

The Committee had before it an invitation from the Minister of the Interior to appoint a delegate to a conference on forthcoming public health legislation. The President was appointed delegate, and the Committee passed a number of resolutions bearing on the agenda of the conference. In these the Committee expressed the opinion that a Minister should be appointed holding a portfolio of public health, that the medical officer of health for the Union should be the administrative head of the department, but that the establishment of an advisory board of health was inadvisable. The Minister of Public Health should be ultimately responsible for all measures dealing with infectious diseases throughout the Union. In view of the fact that a Public Health Bill concerned the functions of general medical practitioners, the Committee held that, as the only representative of these practitioners, it should have more than one delegate.

A vote of condolence was passed on the death of Dr. Loughborough, a member of the Committee, and a vote of thanks was passed to Dr. Greenlees for his services as representative of South African Branches on the Council of the British Medical Association. A letter of regret was sent to Sir Kendal Franks on his inability to be present through illness.

After a discussion on the care of the feeble-minded, correspondence with the various education departments on the medical inspection of schools was read, and a report was received from the subcommittee on railway medical officers' grievances. Consideration was given to correspondence with the medical officer of health for the Union on protection of the interests of district surgeons whilst on active service.

The honorary secretary, Dr. A. W. Reed, was instructed to write to the Medical Secretary of the parent Association as to the recognition of the South African Committee as a standing committee of the Association, like the Scottish and Irish Committees. The draft annual report of the activities of the South African Committee during 1917 was read and adopted. It was decided not to hold a medical congress until the end of the war.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Association Notices.

MEETING OF COUNCIL.

THE next Meeting of Council will be held on Wednesday, April 16th, in the Council Room, 429, Strand, London, W.C.2.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

March 13th, 1919.

INSURANCE.

NATIONAL INSURANCE (ENGLAND).

REPORTS OF INQUIRIES AND APPEALS.

THE National Insurance Commissioners (England) have recently issued vol. ii of Reports of Inquiries and Appeals under the Medical Benefit Regulations, including cases which have been dealt with since June, 1918. The volume is divided into five parts. The first contains reports of inquiries relating to panel practitioners, and, apart from a number of cases where the names of doctors were removed from the list on the charge of neglect or improper filling up of the record cards or giving certificates without examination and so on, there are two cases which deserve a short notice. In the first the doctor was removed from the list on the ground that he had made improper use of his position as chairman of the Insurance Committee with the object of limiting the number of insured persons accepted for treatment by practitioners other than himself, and had acted for his own private advantage. In a second case the name was removed from the list on several grounds; first, that he had received fees from an insured woman, afterwards shown to have been entitled to medical benefit, without making an attempt, which, under all the circumstances of the case, he should have made, to satisfy himself as to her position as an insured person and her consequent right to medical benefit. A second charge was the failure to order medicines except at the patient's expense, and when he was surcharged by the Insurance Committee, attempting to recover or actually recovering the surcharge from the patient. He was further found guilty "of an attempt to abuse the arrangements for the treatment of temporary residents in claiming fees from the Insurance Committee of the adjoining county for the treatment at his surgery in the county borough as temporary residents in the county of insured persons who were on his panel for the county borough." The second part, dealing with chemists, contains only one case, that of a chemist who was removed from the list for allowing dispensing to be done by an unqualified assistant.

Appeals by panel doctors against surcharges for excessive prescribing are reported in the third part. In one case the doctor had prescribed as a routine practice certain proprietary medicines, and he was surcharged £24. This was reduced to £10, it being held that though he had been animated by good intentions he had taken a wrong view. Out of eight other appeals it is noteworthy that in all but one the amount of the surcharge was reduced. The following paragraph is of interest:

In deciding whether particular drugs are "reasonably necessary" due allowance must be made for the personal element and within reasonable limits a doctor should be allowed to follow methods of treatment most congenial to him. . . . If a proneness to use more expensive drugs is coupled with a very high average cost, strong evidence would be required to show that the high cost is due solely to the conscientious exercise of a discriminating judgement.

In the fourth part, relating to general appeals against decisions of Insurance Committees, the first case brings out the fact that if a panel doctor refuses to accept a person for treatment he must give the person the proper form containing instructions as to the steps to be taken to obtain treatment, and that failure to do so is a breach of his agreement. In another case it was held that if a panel doctor failed to attend a meeting of the Medical Service Subcommittee, of which he had had due notice, he could not afterwards appeal against any decision of the committee. In another case a doctor was held to have disparaged the system of medical benefit by telling a patient that she required a particular drug which was very expen-

sive and which he could not order owing to her being on the panel. A second doctor was called in and paid for his services, and it was held that the expense thus incurred by the patient was reasonably incurred in consequence of the appellant's breach of his agreement.

The fifth part contains reports of two cases referred to the Commissioners for arbitration under Clause 14 of the agreement. In the first case an insured person was recommended by a dentist to have a number of teeth extracted, and it was arranged that the person's panel doctor should attend at the dentist's house to give a general anaesthetic. It was not suggested that such service was beyond the competence of a general practitioner, but it was decided that the doctor was not required by his agreement to administer the anaesthetic in those circumstances. The second case was one in which a rural practitioner, who had entered into an agreement with the Insurance Committee to provide drugs at a capitation fee, claimed a refund of the sum of £4 for the cost of antitetanus antitoxin which he had provided for a patient. Here it was decided that antitetanus antitoxin is a drug or medicine to which the insured person was entitled as part of his medical benefit, and the doctor, having accepted an inclusive capitation fee, was not therefore entitled to be paid separately for it. This case has already been commented on in a leading article published last summer.

COUNTY OF LONDON INSURANCE COMMITTEE.

Insurance Practitioners with the Forces.—At the meeting of the London Insurance Committee on February 27th it was reported that of the practitioners on the London panel 396 served with the Forces during the war, and of these, 9 had been killed in action or had died on active service. The number of insurance practitioners still with the Forces was 134, and it was decided to apply for the release of all those whose practices were in boroughs in which the population per general practitioner exceeded 2,000, and any others elsewhere who had more than 1,000 insured persons on their lists. If these applications are granted, 67 will still remain in army service.

Complaints against Insurance Practitioners.—In 1918 the number of complaints against practitioners brought before the London Insurance Committee was 77, of which number 13 dealt with questions of certificates, and 62 were in connexion with the treatment given or the general discharge of his duties by the practitioner. In 48 of the cases the complaint was found to be substantiated. In no case was it found necessary to recommend the removal of the practitioner from the panel, but in one case that course would have been taken had not the practitioner voluntarily withdrawn.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: A. X. Lavertine to the *Princess Royal*, W. Jackson to the *Marlborough*, R. H. Atkins to the *Dido*. Surgeon Lieutenant Commander G. L. Buckeridge to the *Hecla*. Surgeon Lieutenant A. C. Saw to the *Clio*. Surgeon Lieutenants (temporary): E. V. Corry to the *Endeavour*, F. J. R. Cowie to the *Dwarf*, R. G. Elwell, D.S.O., to Chatham Dockyard (temporary), A. T. McDonald to Plymouth Hospital A. Patton to the *Vindictive*, C. J. A. McKillop to the *Kent*, H. F. Stephen to the *Vivid* for R. N. Barracks, Devonport, J. H. Kerr to the *Stuart* (temporary), K. E. Attenborough to *Attentive II*, W. P. Elford to the *Glory*, F. Caldecott to the *Powerful*, H. C. Apperly to the *Greenwich*, A. R. Upton to the *Fernon*, I. H. Beattie to the *Resolution*, R. W. Nesbit to the *St. George*, I. P. L. Finin Edwards to the *Implacable*, N. Parry-Price to the *Lion*, G. Millar to the *Carlisle*.

ARMY MEDICAL SERVICE.

Colonels R. W. Wright, C.M.G., and H. C. Thurston, C.B., C.M.G., retire on retired pay.

Colonel H. D. Rowan is placed on retired pay.

Temporary Colonel L. S. Dudgeon, C.M.G., relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

The following relinquish the acting rank of Lieut.-Colonel on re-posting:—Majors and Brevet Lieut.-Colonels: P. Davidson, C.M.G., D.S.O., C. R. Sylvester-Bradley; Major F. A. Stephens, D.S.O.; temporary Major E. A. Chartres; Captains J. G. Gill, D.S.O., M.C.

To be acting Lieut.-Colonels whilst in command of a medical unit: Majors E. G. French, S. E. Lewis; Captain (acting Major) J. R. Hill.

Major (acting Lieut.-Colonel) E. L. Moss, M.C., to be acting Colonel whilst specially employed as A.D.M.S.

The undermentioned relinquish the acting rank of Major on re-posting:—Captains: A. R. Wright, D.S.O., H. F. Joynt, A. E. Richmond. Temporary Captains: G. D. Mathewson, S. B. R. Campbell, M.C., J. R. Hayeratt, M.C., A. G. Hamilton, J. Hendry, J. W. Elliott, A. Leeming, C. H. S. Webb, A. L. Saunders, J. W. Dow, M.C., W. R. P. McNeight, B. Hogan.

To be acting Majors:—Captains: E. C. Lambkin, D.S.O., R. G. Shaw, M.C. Temporary Captains: R. MacDonna, J. C. Robb, F. W. Diamond, G. C. Adeney, A. Gray, A. T. Todd, C. F. Strange, W. K. A. Richards, M.C., A. G. Gilchrist, J. A. Currell, C. L. Forde, V. D. C. Wakeford, J. Buchanan, R. S. Barker, F. G. Ralphs (from December 24th to 29th, 1918, inclusive), D. G. Wishart, E. E. Chipp, F. K. McCowan, J. M. MacKenzie, M.C. (whilst specially employed).
Temporary Captain R. L. Crabb to be acting Major, November 20th, 1918 (substituted for notification in the *London Gazette*, January 30th).
A. Griffiths, late temporary Captain (acting Major) is granted the rank of Major.

Late temporary Captains granted the rank of Captain: A. Whitley, B. H. Shaw.

Temporary Lieutenants to be temporary Captains: L. O. Weinman, W. W. Pearce, F. O. Stedman, J. H. White-side, G. R. Wilson.

The following officers relinquish their commissions:—Temporary Lieut.-Colonels and retain the rank of Lieut.-Colonel: A. Stewart (on ceasing to be employed at the Whipp's Cross War Hospital), H. B. G. Newham. Temporary Major (acting Lieut.-Colonel) H. MacCormac, and retains the rank of Lieut.-Colonel. Temporary Majors and retain the rank of Major: F. S. Langmead, F. C. Hart-Smith. Temporary honorary Majors R. F. Kennedy, on ceasing to serve with No. 22 General Hospital, and retains the honorary rank of Major. Temporary honorary Major C. McNeil and temporary honorary Captain D. H. D. Cran, on ceasing to serve with the Scottish Red Cross Society, and retain their honorary rank. Temporary Captains (acting Majors), and retain the rank of Major: G. Buchanan, D. W. Torrance (on account of ill health). Temporary Captains on account of ill health contracted on active service and retain the rank of Captain: C. P. Symonds (substituted for notification in the *London Gazette*, February 1st), D. Haig, G. H. Wilkinson. Temporary Captains and retain the rank of Captain: H. C. Mulholland, J. R. Magee, C. F. Nicholas, G. Y. Caldwell, H. U. Leembruggen, A. E. Fiddian, G. W. Huggins, M. S. Fraser, D. M. Hunter, M.C., J. H. Wilkinson, E. L. Council, W. A. Rees, W. A. Anderson, H. Yellowlees, C. M. Wilmott, J. M. Edis, J. Elliott, H. A. R. E. Unwin, L. S. Davison, C. B. Goulden, C. R. Beckitt, N. Glegg, B. Kelly, V. L. Connolly, M.C., A. L. Vaughan, W. B. Wilson, M.C., G. S. Thomson, A. S. Wilson, F. A. Anderson, W. F. Eskine, M.C., J. Johnston, R. D. Bridger, C. Butler, R. C. Berg, M.C., H. H. Siff, S. H. Nathan, R. S. Scott, S. Brée, S. R. Mackenzie, F. G. Chandler, V. J. Batteson, J. A. Marsden, D. G. MacArthur, M. H. Pearson, W. B. Walker, H. H. Carter, F. W. Bartlett, A. H. John (on account of ill health). Temporary Captain: J. E. Briscoe, D.S.O. Temporary honorary Captain G. S. Peppers, and retains the honorary rank of Captain. Temporary Lieutenants and retain the rank of Lieutenant: C. Edwards, J. G. Glasgow, B. H. Stewart, J. Clarke, R. H. Watt, R. Theron, A. S. Ransome, G. C. Maguire, A. L. Sutherland. Temporary honorary Lieutenant C. E. Fearn, on account of ill health (September 28th, 1918), and is granted the honorary rank of Captain (substituted for notification in the *London Gazette*, September 27th, 1918).

ROYAL AIR FORCE. MEDICAL BRANCH.

Lieutenant O. Hilton is transferred to the unemployed list.

INDIAN MEDICAL SERVICE.

To be acting Lieut.-Colonels whilst commanding hospitals in the field for the periods specified: Majors W. S. McGillivray (August 10th, 1917, to November 14th, 1917), C. G. Seymour (October 12th, 1916, to April 12th, 1917), H. W. Illius (September 19th, 1914, to April 25th, 1917), D. H. F. Cowen (August 24th, 1916), Captains G. McG. Millar (March 28th, 1918), G. F. Graham (April 16th, 1917, to August 3rd, 1917), R. S. Kennedy (April 4th, 1916, to October 15th, 1916).

Granted temporary rank of Lieutenant: Maneck Sohrabjee Hormusjee Mody, Brij Ratan Jain, Raghavendr Purushotham Bhat, Chandrian Krishna Row, Ganesh Dattatraya Apte, Pandipedi Kutumbiah, Krishna Kamal Das, Prabodh Nath Bagchi, Kailashnath Waghlay, Dharendra Chandra Mazumdar, Jagan Nath Goli, Sahibzade Ahmad Khan, Kanai Lal Bose, Indra Bhusan Mazumdar.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains relinquish the acting rank of Major on reposting: C. V. Nicoll, T. O. Graham, J. C. Brash, M.C., G. V. Stockdale, D.S.O., M.C., G. G. Jack, H. D. Rollinson, W. Murdock, M.C.

Captains to be acting Majors: L. J. Sheil, M.C., C. S. Staddon, M.C., D. Colombos, W. Broughton-Alcock, S. W. Lund (from January 4th to May 9th, 1918, inclusive).

Captain H. T. Lamb, M.C., relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

The name of Captain William Ulio Desmond Longford is as now described and not as in the *London Gazette* of September 5th, 1917, and November 4th, 1918.

Captain S. A. Lane relinquishes his commission on account of ill health, and retains the rank of Captain.

To be Lieutenant: W. B. Watson, from Edinburgh University Contingent O.T.C.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Major F. E. Walls to be acting Lieut.-Colonel while employed at a Canadian General Hospital.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major H. A. Leebody to be an Assistant Director of Medical Service, and to be acting Colonel whilst so employed.

Captain (acting Major) H. Henry, M.C., to be acting Lieut.-Colonel whilst specially employed.

Captain (acting Lieut.-Colonel) H. F. Humphreys, M.C., relinquishes his acting rank on ceasing to be specially employed.

Captain (acting Major) H. G. W. Dawson is granted the pay and allowances of his acting rank whilst holding the appointment of Assistant Director of Medical Services.

Captain (acting Major) F. J. Green, M.C., to be Major.

1st London General Hospital—Lieut.-Colonel Sir A. E. Garrod, K.C.M.G., F.R.S., is restored to the establishment.

1st London Sanitary Company—Captain (acting Major) F. E. W. Rogers, M.C., relinquishes his acting rank on ceasing to be specially employed. Lieutenant R. W. Brearey to be Captain.

2nd London Sanitary Company.—Captain A. G. G. Thompson to be Deputy Assistant Director of Medical Services, and to be acting Major whilst so employed. Captain D. Smith is now seconded whilst employed as Education Officer.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Major: Major A. Callan, D.S.O., 2nd East Lancashire Field Ambulance (substituted for notification in the *London Gazette*, January 15th). To be Captains: Captains A. E. Barnes, 3rd Northern Field Ambulance, December 18th, 1918 (substituted for notification in the *London Gazette*, January 10th, 1919); A. C. H. McCullagh, 2nd Northern Field Ambulance, December 18th, 1918 (substituted for notification in the *London Gazette*, January 10th, 1919); G. N. F. Reddan, 2nd London Sanitary Company; A. M. Johnson, M.C., 3rd East Lancashire Field Ambulance (substituted for notification in the *London Gazette*, January 7th, 1919); J. W. Dale, M.C., 3rd Welsh Field Ambulance, December 28th, 1918 (substituted for notification in the *London Gazette*, February 11th, 1919); J. Derham Reid, M.C., Welsh Border Mounted Brigade, Field Ambulance (substituted for notification in the *London Gazette*, January 7th); T. H. Peyton, 1st Home Counties Field Ambulance (substituted for notification in the *London Gazette*, January 16th).

VOLUNTEER FORCE.

Kent R.A.M.C.—Temporary Captain E. L. N. Pridmore.

City of London R.A.M.C.—Temporary Major B. Duke to be temporary Lieut.-Colonel.

County of London R.A.M.C. (V.)—Temporary Captain R. C. Wakefield resigns his commission on account of ill health.

APPOINTMENTS.

DORAN, W. M.; L.R.C.P. and S. Edin., L.R.F.P.S. Glas., Assistant Medical Officer, Southampton Parish Infirmary.

LOOSELY, Alfred, M.A., B.M., B.Ch. Oxon., F.R.C.S. Eng., Assistant Surgeon in the Ophthalmic Out-patient Department at the London Temperance Hospital.

NUTHALL, A. W., F.R.C.S. Surgeon to Queen's Hospital, Birmingham.

SLADDEN, A. F. S., M.D. Oxon., Pathologist to the Swansea Hospital.

DISTRICT MEDICAL OFFICERS.—W. J. V. Curtin, L.R.C.P. and S. Edin., L.R.F.P.S. Glas. (West Ham Union). J. E. S. Smith, M.B. (Hemel Hempstead Union). W. P. Ker, M.R.C.S., L.R.C.P. (Rugby Union).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGE.

WATERHOUSE—CONNOR.—On February 11th, at St. Peter's, Bayswater, Rupert Waterhouse, M.D., M.R.C.P. Lond., of 25, The Circus, Bath, to Mabel Dorothy, elder daughter of Mr. J. T. Connor, of 34, Charlton Street, Maidstone.

DIARY FOR THE WEEK.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday and Thursday, 5 p.m., Milroy Lectures by Dr. J. C. McVail: Half a Century of Small-pox and Vaccination.

ROYAL SOCIETY OF MEDICINE.—General Meeting of Fellows, Tuesday, 5 p.m. Social Evening, Wednesday, 8.30 p.m.—Mr. Walter G. Spencer: Larrey and War Surgery. Section of History of Medicine.—Wednesday, 5 p.m.—Dr. Ralph Leftwich: The Evidence of Disease in Shakespeare's Handwriting. Rev. Father Fletcher: The Medical Book of St. Isidore. Section of Dermatology: Thursday, 4.30 p.m. Cases. Section of Otolaryngology: Friday, 5 p.m. Demonstration.—Sir Thomas Wrightson, Bt., and Professor Arthur Keith: New Theory of Hearing. Specimens and Cases. Section of Electro-Therapeutics: Friday, 8 p.m. Joint meeting with the Institution of Electrical Engineers: Discussion (1) Electrical Methods of Measuring Body Temperature; (2) The Electrocardiograph, to be opened by Mr. R. S. Whipple. Exhibition of apparatus.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
MARCH.	
15 Sat.	London: Science Committee, 11 a.m.
24 Mon.	London: Naval and Military Committee, 2.30 p.m.
25 Tues.	London: Public Health Committee.
26 Wed.	London: Medico Political Committee.
APRIL.	
9 Wed.	London: Finance Committee, 2.30 p.m.
16 Wed.	London: Council Meeting.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 22ND, 1919.

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WHY SHOULD THE MEDICAL PROFESSION BE ORGANIZED, AND HOW SHOULD IT BE DONE?

WITH SPECIAL REFERENCE TO TRADE UNIONISM.

BY

ALFRED COX, M.B., O.B.E.,

MEDICAL SECRETARY TO THE BRITISH MEDICAL ASSOCIATION.

WE are on the threshold of a period of reconstruction, a time when all established things will be put to the question, which some people think will come to be looked back upon as a great renaissance in the world's history, while others are afraid it may be the beginning of the decline of Western civilization. Whether you are an optimist or a pessimist, you will agree that we cannot win through to a new and better era without a struggle into which we must put all the goodwill and intelligence of which we are capable. What applies to us generally as citizens applies to us in particular as members of a great profession. It is for us to consider anxiously and soberly what can and ought to be done to make our profession more useful to the community and at the same time to make our calling more interesting and more inspiring to those now or in future to be engaged in it.

What is Organization?

To do these things we must be organized. What do we mean by that? To organize any profession or calling is to place it in such a position that it can collect the views of its individual members, can blend them into something which may fairly be termed the "collective will," can place them effectively before the Government or other bodies or persons concerned, and can provide means whereby the special interests of that profession or calling can be reconciled with the general interests of the community.

Organization is difficult and laborious. It is estimated even now by the most recent writer on trade unionism (Mr. G. H. D. Cole) that the number of male manual workers who are organized into trade unions is only a little over 50 per cent. of the whole, and of the women workers less than 10 per cent. The 50 per cent. or so of the medical profession which is inside the British Medical Association compares very favourably on the whole with these industrial organizations, though it is poor when compared with the very high percentage inside the strongest trade unions, such as the National Union of Railwaymen, the Amalgamated Society of Engineers, and the Miners' Federation.

Medical Organization in Relation to the Ministry of Health.

It will be useful as an illustration of the need for organization now to allude to an outstanding subject of practical medical politics. There is now going through

* An address delivered at a meeting of the profession at Newcastle upon Tyne on March 15th.

the House of Commons a bill to establish a Ministry of Health for England and Wales, and as the Government is pledged to it, it will shortly become an Act. With its primary object the profession can have nothing but sympathy, for it is to collect in one hand all the threads of public health administration that are still scattered through many Government departments. The Association has been freely consulted in the preparation of this bill, and has made its mark on its draftsman-ship. It is due to Dr. Addison, a member of our own profession as well as a distinguished politician, to say that he never hesitated to give us the fullest information, to discuss our views with us, and to modify his bill to meet those views so far as he could do so with due regard to Cabinet policy.

In the case of the Health Ministry we have consulted with representatives of the Royal Colleges and the Royal Society of Medicine, and have succeeded in getting a very close agreement with them which has greatly strengthened the professional position in regard to the bill.

All that the Act will do, at the outset, is to amalgamate two Government departments—the Local Government Board and the National Health Insurance Commission—and bring certain of the medical duties of the Board of Education, the Home Office, and the Privy Council at once, and the health work of some other departments gradually, under one Minister. But when the Minister is once in the saddle and possessed of the power of initiative, he will decide how far his new powers can be made effective in improving the medical service of the community. Public opinion would insist on it even if he were inclined to mark time. And the changes which will occur centrally must soon be followed by changes in local administration, and sooner or later by changes in the relation of every member of the profession to the community. The bill contains one clause of great interest to the profession.

Clause 4.—(1) It shall be lawful for His Majesty by Order in Council to establish consultative councils for giving, in accordance with the provisions of the Order, advice and assistance in connexion with such matters affecting or incidental to the health of the people as may be referred to in such Order.

(2) Every such Council shall include persons of both sexes, and shall consist of persons having practical experience of the matters referred to the Council.

That is to say, there will be possibly a general Advisory Council on which medical men will sit, and there will certainly be a Medical Council composed of representatives of the various types of medical practice and experience. An order which, we are told, will be made as soon as the bill passes will provide that this council or these councils shall be consulted by and have direct access to the Minister, shall have the right of making representations on any subject relevant to their duties without being asked by the Minister, and shall be renewed every three years. No advisory committee hitherto known in any Act has had such powers, and it should be noted that it was the British Medical Association which first declared them to be

essential, and published them in the scheme approved by the Annual Representative Meeting in 1917, before any bill had been drafted, or, at any rate, long before any draft had been made known to us. It will need careful organization to get the right representatives of the profession on the Medical Advisory Council, which will be the means of bringing the Minister and the Government into close touch with the views and desires of the profession. But it will not exist to look after the interests of the profession. Its business will be to act as expert advisers to the Minister in the best interests of the community at large. If it were once looked upon as seeking to protect merely sectional interests its influence on health legislation would be destroyed. It will be the business of medical organization to see that the Advisory Council is kept freely supplied with ideas and from time to time with fresh blood. It will be the business of medical organization to look after the special interests of the profession and to press them on the Government.

THE ESSENTIALS OF AN ORGANIZATION.

An effective organization must be (a) democratic—able to represent all sections of the calling—and (b) it must be strong.

Democratic Basis.

It must be open to all members of the calling. I do not say it must contain all members of the calling—that is probably an unrealizable ideal. But, given a constitution which offers free scope to the influence of the individual, those who stay outside must be prepared to find themselves committed by its actions. Trade unions which contain a far less proportion of their calling than the British Medical Association does of our profession are constantly fixing with employers and with the Government conditions of service which bind the whole calling. Employers and Governments cannot deal in such matters with individuals. A democratic organization must provide means by which all its members may take part in and influence its deliberations and actions, but it cannot force them to take their part. Even in the most successful organizations it is always found that the real work is carried on by a small minority. The British race has been experimenting for centuries and has arrived at the practical device of representation—that is, the election, by comparatively small units, of men into whose hands the members of that unit by a majority place for a limited time the responsibility of stating their views. In co-operation with other representatives they decide on action. I call it a practical device because it works, but, like most practical devices, it is a compromise. And this body of representatives—Parliament in the case of the country, our Representative Body in the case of our Association—has the duty of choosing an executive and of acting as a check on it. All executives tend to grow autocratic or bureaucratic if not kept in close touch with their constituents. The complaint which is so often made that “the profession has not been consulted,” is founded on an erroneous idea of the possibilities of the case. It is, of course, essential that the small units should be consulted on all new and important developments, but the individual member cannot be consulted at every step. The democratic organization must get the right men as representatives and put its confidence in them. They will come back to their constituents for fresh guidance when events make that step necessary, and at regular intervals the constituents can, if they choose, get rid of their representatives if they are not satisfied with them. But to withhold from them full confidence and responsibility while they are in office, to insist that the small units must be consulted at every step, is bound to result in a clumsy organization, unable to act promptly in emergency.

Source of its Strength.

Secondly, the organization must be strong, not only in numbers and in finance, but in energy, sanity of outlook, and sense of proportion. As members of a profession from which the exercise of judgement and the possession of a cool head are daily expected, we ought to set an example when we deal with matters of professional politics. Strong language does not generally denote strength of character or purpose, and to be perpetually pointing a pistol which will not go off, or goes off at the wrong end, is not the way to impress anyone worth impressing.

Infallible tests of the strength of an organization are the respect in which it is held by those to whom it appeals for its membership and the estimation in which it is held by the public. If it commands the respect of the calling to which it appeals it will grow, perhaps not steadily or continuously, but if a long enough curve is taken there ought to be an unmistakable rise. The trade unions, for example, always find that they get a large accession of membership when trouble is brewing and that large numbers of the indifferent drop out when it is over. We found the same thing over the Insurance fight—a big rise and a bigish drop, which is gradually righting itself. An organization is not likely to gain the respect of those with whom it has to deal if candid friends, inside and outside, are continually “crabbing” it. Every successful organization has to stand that kind of thing, but if it leads the public to believe that the calling is worse organized than it really is, the interests of the calling are likely to suffer. It is of the first importance that our organization should command and keep the respect of the public. Nobody knows better than an audience in an industrial centre like this that the best organized strikes of the strongest trade unions fail if public sympathy is against the strikers. If the public regard the body concerned as wrong-headed and arbitrary they will stand anything rather than give in.

Necessity for Concentration on One Organization.

To accomplish its purposes the calling must concentrate on one organization. Probably the most noticeable movement in the labour world during recent years is the tendency for the various competing bodies inside one calling to amalgamate. It does not pay to have several organizations competing the one against the other: ostensibly representing the same people but speaking with different voices and often in different languages. Mr. Lloyd George, in a speech on May 1st, 1912, said:

As any one knows who has to do with any profession or any other combination where there is a dispute as to terms or conditions of labour, it is infinitely better you should deal with a united body than with a number of sporadic interests and conflicting interests.

This is sound common sense, yet during the last few years we have had quite a crop of new bodies, most of them very short-lived, all making a claim to speak for the medical profession or certain sections of it. I know that I am prejudiced in favour of the Association, and am sometimes accused of believing it to be perfect. I certainly do not consider it perfect. No man in my position could remain under that delusion for a single day. It welcomes honest criticism, and tries to benefit by it. But the Association is bound to fight all attempts to split the profession and set up several weak organizations instead of concentrating on one strong one.

Reasons given for Discontent with the British Medical Association.

The reasons given for starting fresh movements may be roughly divided into two: (1) That the Association is not active enough, is too slow, or is “out of touch with the profession”; and (2) that its organization is on wrong lines—that to be really effective it must adopt a particular form of constitution and become a registered trade union.

The people who say we are not active enough are, generally speaking, either those who have taken little or no trouble to find out what we have done or are doing, or belong to the disgruntled class. I will not waste time over the latter class, and I find that the former class either have never belonged to the Association, and knew nothing about it, or have been passive members, and will not read anything about the Association's work. To honest and fair-minded doubters as to the value of our work I would say, “Read *merely* the SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL every week, and the Annual and Supplementary Reports of Council once a year. If you will do this for one year you will be compelled to admit that, whatever our faults may be, inactivity is not one of them.”

No organization, however strong, can always get all it asks for. But there is a section of the profession which is very fond of telling the public of the “failures” of the Association. It is a sort of shibboleth with this section to repeat that the Association “failed over the Insurance Act fight.” I deny it. What happened was that up to the

eleventh hour the Association was misled as to the determination of the majority of the profession to refuse the terms which were then being offered by the Government. It was quite evident—afterwards—that the representatives who attended the Representative Meeting just before the Act came into operation were misled by their constituents. They came instructed to pledge their constituents not to accept terms which the events of the next week or two showed a very large number were quite prepared to accept. But to cull the affair as a whole a "failure" is grotesque. Everybody in the political and labour world looked upon it as a great victory until our candid friends carefully explained that they were wrong. A fight which succeeded in altering almost out of recognition the medical clauses of the bill and extracted over 1½ millions extra of public money is no "failure," unless you insist that nothing shall be called a victory except you get everything you ask for. The opinion of the public was well put by the *Westminster Gazette*, which said: "We all admire people who don't know when they are beaten, but the trouble about the British Medical Association is that it doesn't know when it has won."

IS TRADE UNIONISM "THE ONLY WAY"?

It is very difficult to deal with the advocates of medical trade unionism, because they are so vague about their reasons. They merely tell us that trade unionism is the "only way." This is no subject for rhetoric; it demands cold analysis. I have examined very carefully the speeches and writings of those who advocate trade unionism, and they can be divided into two classes: Those who think that the trade union possesses peculiar advantages in holding its members together—in making them do things; and those who believe that the chief advantage lies in the legal immunities of the trade union.

Alleged Superior Ability of Trade Union to Keep its Members Together.

In examining the arguments of those who think the profession should organize as a trade union, let me premise that there is a large number of our profession who loathe the idea, so that its advocates start with a great disadvantage unless they are prepared to spend years in bringing the majority over to their side. And what is to happen in the disorganized interval? I went through the speeches of the most prominent advocates of medical trade unionism at their meeting in the Wigmore Hall on February 23rd. I was trying to find their strongest arguments, but its advocates do not argue with you, they simply tell you that trade unionism is "the only way." Dr. Angus said that other sections of the community "had found that in every case, and only in those cases where a trade union was backing them up, did they succeed." As against this I could submit the experience of the Association in scores of cases. I would simply mention that the legal profession, whom Dr. Stancomb, a later speaker, spoke of as the "most powerful trade union in the world," is not a trade union any more than is the British Medical Association; and the National Union of Teachers, which has carried out many most successful "strikes" recently, is not a trade union, but a body organized very much as the Association. Dr. Stancomb said a "trade union was legal, constitutional, and protective, and it gave them the right to do things," but he did not say why. The same statement could be made about many other organizations, including the British Medical Association, which are not trade unions. And the advocates of trade unionism contradict one another. Dr. Dunstan, a convinced trade unionist, explained that it was "not because the miners were a trade union" that they got better treatment than some medical deputations had received, "but because they were a part of the great Labour movement." Ergo, the medical profession must join the Labour party!

A trade union is a voluntary organization, just like the British Medical Association; it cannot force people to join it; it cannot force them to stop in; it cannot force them to pay their subscriptions or their levies. Indeed, it is worse off than other voluntary bodies as regards subscriptions or levies. We could sue members for arrears—a trade union cannot. Why, then, do its advocates think a trade union can hold its members together better than any other form of organization? Because they are led away by a false

analogy between medical men and workmen. They see a union—say the Miners' Federation—making its demand, threatening to "down tools," and succeeding in extracting from the employers sometimes all (but more often not all) they demand. "Why should not doctors do this?" the medical trade unionist says. Well, part of the answer is, that doctors have quite often done it, though not in the same way, and can do it again with a good case on which they are united and one which they can convince the public is just. But how do the miners do it, even sometimes with a bad case? They are strong in numbers, in many areas they control the election of the M.P., collectively they are powerful as voters. They can force the hand of the public by completely stopping industry. We are in no such position, and never can be. Even the extremists propose, in the event of a medical "strike," merely to change the way in which medical attendance will be given—a course quite as open to the British Medical Association as it is to them. Indeed, it has been done in several British Medical Association disputes. Then the miners succeed in holding their own members together (not always) because, working together in large numbers, the active and determined few are able to bring to bear on the passive—or, at any rate, less determined—many an influence which is very difficult to resist. Only those who have seen a picketed mine or workshop can estimate the moral courage that is necessary to defy the majority. Nothing like this, I am glad to say, could be done as regards doctors. We do not work together in masses; to picket the individual patient is unthinkable, or to picket the house of the recalcitrant doctor; and the doctor who made up his mind to go his own way, union or no union, would always find medical help in those cases in which he must have it, and he would find abundant public sympathy. The weapons by which the trade union holds its members together are not available for doctors, or would be scorned by them. The thing which is common to both miners and doctors, namely, *esprit de corps*, does not depend on the form of organization at all. To call yourself a trade union no more makes you invulnerable to weakness on the part of your members than to call yourself an Association. Calling yourself a union, even if you were registered as a trade union, would not put doctors in possession of the weapons of industrial trade unionism. But we have many proofs, even in recent industrial struggles, that trade union organization cannot keep its members together if they do not want to be kept together, or when they know they have a bad case and that public sympathy is against them. In the medical world we have one interesting example, and it happened in connexion with the only instance I know in which the one active medical trade union, the Medico-Political Union, ever tried to do anything. It exhibits not only the hopeless want of common sense and lack of faith in democratic government which may go with trade unionism, but also its inability to do what it claims as its speciality—namely, by some magic in the words "trade unionism" to force its members to do what they are told.

In 1917 the question of how the medical attendance on discharged disabled soldiers and sailors should be paid for came up for discussion. The Insurance Acts Committee after careful and prolonged consideration reported to the Conference of Panel Committees in October that it was impossible to suggest a capitation fee that would meet the case, as the condition of these men was so uncertain and variable. The Committee therefore recommended that the payment should be on the basis of work done, and the Conference, after a long discussion, agreed by a large majority to accept the payment per attendance. It must be remembered that this Conference was a democratic and representative gathering consisting of representatives from nearly every Panel Committee in the country, and every committee had been invited. The Medico-Political Union immediately after this decision circularized every insurance practitioner in the country advising them not to accept these terms but to fill up and return to the Union a form of refusal. This was a fiasco; so in December, 1917, the Union advised all insurance practitioners to continue to attend the discharged men gratuitously. I do not think a single practitioner has carried out this suggestion, but it is a sad reflection on the common sense of those who made it, and the result showed that they were unable to bind their own members.

Alleged Legal Advantages of Trade Unionism.

But the advocates of trade unionism say, "Registration as a trade union gives us legal protection which is denied to other forms of organization—it protects our funds from actions for conspiracy, libel and slander, and it would enable us to publish lists of 'blacklegs.' We have no right to deprive the medical profession of a form of protection which is available to other callings."

I agree that this requires careful consideration. We would have no right to refuse any legal protection which would really protect. In the Coventry case the Association was cast in damages for conspiracy, libel and slander—for doing things which our medical trade unionists say could have been done with impunity had we been a trade union. Since that trial we have taken the highest legal opinion we could get on certain aspects of the judgement. We went, not to the eminent counsel who defended us in court, but to two who were chosen because one, Mr. F. Gore Browne, K.C., was an acknowledged authority on company law, and the other, Mr. H. H. Slesser, had written the latest book on the legal position of trade unions and is the standing counsel to the Labour party and to many trade unions. We selected these gentlemen because we believed they formed the most powerful combination we could consult; and among other things we asked for their opinion on trade unionism as applied to the profession and the Association. I want you to note very carefully the way in which the question was put by me:

At almost every meeting of the medical profession I have attended during the past few years I have been cross-questioned by those who have been led to believe that trade unionism offers a short cut out of all our legal difficulties. . . . All the authorities I have consulted are dubious as to the extent of the protection that could be expected by the medical profession from trade union organization, and some think that a way would always be found of securing damages from the individuals, even though the union funds were proved to be immune.

It is necessary that these doubts should be cleared up and removed once and for all with as little delay as possible, and the present case to counsel affords suitable opportunity for this being done. If full protection can be obtained by trade union registration *without counterbalancing disadvantages*, we cannot fairly continue to discourage the profession from seeking this protection, even though it means that the Association must give up some of its work. Would a medical trade union have been immune if it had had the Coventry case brought against it, and would that immunity have extended to the individual members who were sued? . . .

Their answer may fairly be condensed in laymen's language as follows (I will read the actual words if desired):

The British Medical Association could not be registered as a trade union. The protection given to trade unions depends on whether the action complained of occurred in connexion with a "trade dispute," and a trade dispute is a dispute between employers and workmen or workmen and workmen. In counsel's opinion, medical men are not "workmen" in the meaning of the Act, and therefore a dispute about the conditions of employment of a medical man would not be "trade dispute."

They point out that in any case the Acts do not give any protection to individuals, whether officials or members of a trade union, sued in their own capacity. In the opinion of counsel, if an action similar to the Coventry case or for breach of contract were being taken against members of a medical trade union, it would be taken not against the union as such but against the individuals. If the individuals lost the case they would have to pay and the union would have to indemnify them. So that the only advantage to be gained (even if it were found that doctors were "workmen" and that therefore their trade union could not be proceeded against for certain actions) would be that the doctors would pay out of one pocket instead of out of the other. Prompt corroboration of this view was forthcoming. In the *Times* of March 7th you will find the judgement of Mr. Justice Astbury who granted an injunction against two officials of one trade union restraining them from inducing a colliery company to terminate the contract of another trade unionist or from interfering with his right to dispose of his labour as he would.

In the opinion of the eminent counsel consulted by us there is "little or no legal advantage" to be got for the medical profession by registration as a trade union. As professional men, they consider that the effect on the profession in the public estimation would be bad, if the

profession deliberately put itself on a level with bodies whose chief objects are wage raising and shortening of hours, and whose methods exhibit a constant truculence which the public may have to stand, but which it certainly does not like.

The Form of Organization comparatively Negligible.

The fact is there is a great deal of loose talk, and still looser thinking, on this question, and it is not confined to medical trade unionists. In an article in a Sunday paper on November 25th, 1916, Mr. Hogge, M.P., said: "The British Medical Association is the most powerful syndicalist trade union in the kingdom." The *Daily Express*, apropos of the Coventry trial, said on October 17th, 1918, "The British Medical Association is the strongest trade union in the world." I could give you scores of statements of this kind about the British Medical Association. One more will suffice. I had to meet the representatives of a miners' committee in South Wales a few weeks ago, about a dispute in which we had been engaged for nearly five years. The miners admitted that we had beaten them; that wherever they had turned they found the British Medical Association in their way; their efforts to secure doctors to do their work on their terms had failed. One of them congratulated me on being the Secretary of the "strongest trade union in the country," and when I said we were not a trade union he said that whatever we called ourselves we were doing for our members what they do for theirs—namely, looking after their interests.

The fact is that outsiders have the firm conviction that, whatever we may call ourselves, the British Medical Association does for the medical profession what the trade unions do for their respective callings, with the additional advantages in their eyes that we also look after the scientific interests of our members. It will be due to our own foolishness and mismanagement if this confidence is shaken. Every Government department comes to the Association for information about the views of the medical profession; every department listens to our representations when we put them forward, even if it does not agree with them. The British Medical Association organized the whole of the machinery of the Central Medical War Committee, and the Local Medical War Committees, which have done such splendid service for the community and the profession during the war, and it was only the other day that the Secretary of State for India, after announcing to a British Medical Association deputation the grant of an advance of 33½ per cent. in the salaries of the Indian Medical Service, together with other important concessions, said: "I therefore thought it wise to ask you to come here to-day and to tell you myself what had been done and what was being done, because I thought I could produce to you satisfactory results of the representations that you made last year, and because I thought I had grounds, with confidence, to ask you, as representatives of your great and influential Association, to assist us in recruiting the medical officers whose services we so much need."

What is the Alternative to the British Medical Association?

I assume that every one of my hearers is convinced that the profession must be organized as well as we know how; that if we had no organization it would be necessary to start at once and make it. But is it seriously contended by anyone that because of either fancied or real deficiencies in our present organization we should scrap it all and begin again? Is there any serious alternative to the British Medical Association? It has taken nearly 100 years to build up. It has funds, offices, staff, and a JOURNAL which is recognized as the chief medical organ in this country. What has any other organization to offer? What has any one of them done? Why should we encourage the growth of rival organizations which can at best only divert the money and energies of the profession into several channels instead of directing them into one strong stream? And what prospect is there of any of them securing a position of real usefulness in face of the strong opposition of the Association?—for we must oppose any pretensions on their part to represent the profession as a whole, as we represent it. We should be betraying the very object of our existence—the promotion of the honour and interests of the profession—if we by word or deed encouraged anyone to

suppose that we were prepared to renounce our position as the only body which can fairly be said to represent the profession in this country. If you encourage the pretensions of other bodies you are only weakening the position of the whole profession.

I am not here to apologize for the Association. I am proud of it and of what it has done. Its failures can, I believe, be traced, not to any weakness in that great body of honorary workers which has devoted itself to our work, centrally and locally, but to the apathy of a great number of its members and to the lack of support by thousands of doctors who should be but are not members. If every Division would make use of the powers it now has; if every member would give but a little of his time to the business brought before his Division and would consider it a duty that so far as in him lies he will try to see that that business is done with judgement and energy, our Association would really become what many public men now believe it to be—the strongest professional organization in the world.

The need for organization is clear enough. The existence of the Association as the one great democratic organization which alone can be said to represent the profession as a whole, however imperfectly—that is clear enough. What is not clear is whether the profession intends to use the weapon which lies ready to its hand and improve and strengthen it, or whether it considers this is a time to trifle with forcible feeble imitations of labour organizations whose objects and outlook are entirely different from ours. If the profession refuses to learn the lesson which is forced upon us by the everyday experience of the whole of the industrial world—to concentrate on what we have got—we shall fail not only to retain our position in the public estimation, but also to protect the interests of the profession. And the failure will be richly deserved.

This address, as stated, was delivered at Newcastle-upon-Tyne. Similar addresses were delivered by Dr. Cox to meetings of the medical profession at Oldham, Bury, Dundee, and Glasgow.

Oldham.

In the discussion which followed at Oldham Dr. J. G. KERSHAW, in criticizing the action of the British Medical Association, recognized the valuable work it had done in the past, and was of opinion that every member of the profession should be a member of the Association. At the same time he thought no harm would be done by members joining a trade union.

Dr. CLEGG held the same opinion and complained strongly of the constitution of Insurance Committees. The approved societies held an overwhelming majority over representatives of both insured persons and doctors.

Dr. MARSHALL, who complained of the apathy of the profession, thought much good would follow if meetings were held more frequently, and particularly if men who were in touch with what was going on would address local meetings.

Dr. RADCLIFFE considered that much of the diversity of opinion in the profession was due to the fact that conditions of practice varied so greatly in different parts of the country.

Drs. MCGOWAN, HENDERSON, LENDRUM, EDWARDS, and MARTIN also addressed the meeting.

Dr. Cox having replied, a hearty vote of thanks to him was carried.

Bury.

In the discussion which followed at Bury, the Vice-President, Dr. J. C. TURNBULL, who took the chair, said he thought Dr. Cox had come not only to impart but to gain information—the information of what was at the back of men's minds regarding this subject.

Dr. A. P. NUTTALL expressed his interest in the new light thrown on the question of a medical trade union by Dr. Cox, and stated his belief in the necessity for more organization and education of the medical profession in these matters, which he thought could best be attained by the appointment of skilled, well-paid, travelling organizing secretaries.

Dr. GREENHALGH referred to the reduction of the fee for notification of infectious diseases. Dr. R. CROMPTON spoke on the subject of the British Medical Association and the National Insurance Act, and stated that although an extra 1½ million pounds had been granted, he did not think that the Insurance Act was to the highest interests of the profession. Dr. J. P. SPURGEON asked Dr. Cox if he did not think the Medical Political Union had had the effect of "gingering up" the British Medical Association.

Dr. A. B. VINE asked whether it would not be possible to unite all these unions and associations, or to absorb them all into the British Medical Association, to avoid the dissipation of energy into several channels. Drs. L. W. JOHNSON, SMITH and MCLACHAN also spoke briefly.

Dr. TURNBULL concluded the discussion, and Dr. Cox answered the various points raised.

In conclusion, a warm vote of thanks to Dr. Cox was

unanimously passed by the meeting, and it was resolved to request the Council to forward a copy of Dr. Cox's address, after publication, to all non-members of the Association.

Newcastle-upon-Tyne.

The meeting of the medical profession of Northumberland and Durham was held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on March 13th. It had been arranged as the result of a conference of the Panel Committees in the area, which considered it desirable that the medical profession should be fully acquainted with the difficulties confronting it at the present time; 140 doctors were present, with Professor RUTHERFORD MORISON in the chair. Owing to train delays Dr. Cox was unable to be present at the earlier part of the meeting, and in his absence Professor MORISON gave an interesting and lucid survey of the position as affecting panel practitioners, and various methods by which he thought these difficulties could be surmounted and an increased efficiency be given to the medical service of the country. In the debate which followed, Dr. DAVID DRUMMOND, Colonel BOLAM, and others from various parts of the two counties took part. Dr. Cox's address was listened to with deep interest, and at the close a number of questions were asked to which he replied.

In the evening a very successful dinner was held at the Station Hotel, this being the first time since the beginning of the war that any social function had been held under the auspices of the Branch. Dr. Howell, the President, occupied the chair, and Dr. Cox was the guest of the evening. A large company assembled to do honour to the Medical Secretary, who is well known to those present, having practised in the neighbourhood before migrating to the head office of the Association in London.

THE MINISTRY OF HEALTH.

DISCUSSION BY THE MARYLEBONE DIVISION.

A MEETING of the Marylebone Division of the British Medical Association was held on March 12th at the rooms of the Medical Society of London to discuss the Ministry of Health and the attitude of the medical profession in relation thereto.

Major MCADAM ECCLES, who took the chair, said that the medical profession claimed to have knowledge, experience, sympathy, definite proposals, and determination, all of which were necessary for effecting a great public health reform; no such reform could be carried through effectively without the co-operation of the profession in all its branches. Their position, therefore, was strategically strong, and they had met to discover what, if any, modifications or additions they, as the profession so intimately concerned, might consider necessary. The powers under the bill were great, in fact almost infinite, and it was of the utmost importance that the constitution of a supreme consultative council and its proper relation to the Minister should be safeguarded.

Sir BERTRAND DAWSON said that that meeting was not a second-reading debate, but more of a discussion in committee, and he hoped that the play of question and answer would be restricted by no formality. The changes partially formulated in the bill were not new; the movement which the bill represented dated back for a very long time, but it was natural that the changes, when they were immediately impending, should give rise to some doubt and hesitation. The state had for many years been making fitful and disjointed efforts in the direction of state service, though many of these efforts had been inconsistent with one another and had led to confusion. Furthermore, for long there had been a movement of increasing volume towards making the health of the citizen of paramount interest to the state. The present bill was simply the culmination of that movement. The bill, however, did little more than lay foundations. It gave powers to the Ministry it created to co-ordinate and centralize the various health services. The medical profession would not actually feel the effect of the changes until the health organization was extended to the periphery—that is, the counties and boroughs—and this gave time for reflection. One big principle must be fought for above all others—that of medical guidance in medical affairs. An advisory council had now been conceived, although, when the subject was first opened, it looked as though such a council would not be a reality, but a figment. The council must not be too big; it must be efficient, and it must represent varieties of knowledge and experience. It would be absurd to try to make it representative in the parliamentary sense. Moreover, its members must possess not only individual excellence, but also the power of fitting in with one another so as to make a team. The right of such a body to have direct access to the Minister and its power to initiate policy must be insisted on. It was only fair to say that in the prospective Minister of Health they had a sympathetic head both in

health matters and in matters relating to the proper rights of the profession. He thought it would be found that Dr. Addison was extremely anxious to get the aid of the medical profession as represented by the advisory council. The profession in its turn must get a larger conception of its duties and, so to speak, learn its relations to the community. The bill aimed primarily at co-ordinating the medical services at the centre. It was becoming clear that the efficient care of the sick was developing along lines beyond the control of the individual doctor. Every new discovery of science which made the diagnosis and treatment of disease more complex made it more expensive—more the work of a team than of an individual—and added to the requirements in the way of equipment. This did not, however, mean a whole-time state salaried service. The problem was how to get an adequate organization for the care of patients and at the same time maintain the freedom of private practice. The right solution was state endowment and maintenance of fabric. All the various public health services should be brought into geographical propinquity as far as possible, so that the interests of the men working the services might blend—they might have intellectual traffic and be good comrades: the part-time appointments in these services should be held by the local practitioners, apart from big towns, where some specialists would have to be appointed. The thing to concentrate on at the moment was to secure a strong advisory council, reasonable in size, representative in character, and, as a consequence of these two conditions, very carefully selected.

The CHAIRMAN pointed out that in the bill the councils were called consultative, not advisory, and there was a world of difference. He wished also to know where in the bill there was provision for direct access to the Minister.

SIR BERTRAND DAWSON replied that the professional bodies which had been considering the bill had done their best to get the word altered from "consultative" to "advisory," but if the word went unaltered he did not think there was any intention on the part of the Minister to make the council less effective from the professional point of view. The principle of direct access was embodied in an Order in Council.

Dr. LOCKHART STEPHENS (Emsworth) thought it important to insist on the word "advisory." It was the duty of the medical profession to see that this was a real advisory body, and the profession must rise to the opportunity presented to it.

SIR BERTRAND DAWSON said that there were two ways of solving the advisory council problem. One was to have one big council on which medical men would have a certain representation, and the other to have a council exclusive to the profession. The latter was laid down in the Order in Council.

Dr. J. METCALFE desired that the advisory council should be given statutory powers. Dr. MARY S. JEVONS thought that care should be taken lest the impression went out that the profession was fighting for its own interests alone. Dr. J. D. MOIR referred to certain of the dangers of a whole-time state service: medical men did not want interference by officials. Dr. C. HARFORD said that the general body of the profession wished to know what scheme of medical service was being put forward by those who were concerned in the negotiations. Mr. BISHOP HARMAN said that the bill was simply an attempt to produce unity of control, not unity of initiative. What was wanted was not a bureaucracy, but a body which would encourage individual initiative.

In reply to Major O'Malley, and also to Dr. Harford, Sir BERTRAND DAWSON said that no scheme of public health in relation to the profession was on the table. It was for it to formulate such a scheme. Only by discussion among the members of the profession would a scheme be gradually evolved. The bill was like the laying down of a concrete foundation to a building; it was for the profession during the next two years to rear the superstructure. At the moment the advisory council was the thing to focus on.

The CHAIRMAN, in summing up the discussion, said that there were four courses along which the medical profession might act. One was for the different branches of the profession to act by themselves; a second was to act through a strong democratic body like the British Medical Association; a third, to ask the medical members of the House of Commons to act as a first consultative committee, not under the Order in Council, but for the profession; a fourth, to have a committee appointed from various organizations, including the Royal Colleges. He thought, when all was said and done, that it was the British Medical Association which would have to speak for the profession, but the general body of the profession should assist it by constructive and not destructive criticism.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Overseas Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting. Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

All concerned are reminded that nominations of candidates for election as members of Council by Home Branches or groups require to be forwarded to reach the Acting Financial Secretary and Business Manager not later than May 17th. Nominations may be either by a Division or by any three members of a Branch. Members and Divisions can obtain copies of the appropriate nomination form on application to the office. The nominations will be published in the SUPPLEMENT of May 24th. Where contests occur, election will be by voting papers sent direct by post from the Head Office to each member.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, April 16th, in the Council Room, 429, Strand, London, W.C.2.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

March 15th, 1919.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

HIGHLANDS AND ISLANDS OF SCOTLAND.

The Highlands and Islands Subcommittee of the Scottish Committee of the Association has recently been completed by the voting of the practitioners resident in the Highlands and Islands. This subcommittee is empowered to consider and deal with questions affecting practitioners in the Highlands and Islands of Scotland and consists of the chairman and secretary of the Scottish Committee (Dr. James R. Drever, Glasgow, and Dr. R. C. Buist, Dundee, respectively), Dr. Michael Dewar, Edinburgh, Dr. John Hume, Perth, Dr. Wm. Sneddon, Cupar, appointed by the Scottish Committee; and the following members elected by the practitioners in the constituencies referred to serving under the Highlands and Islands Medical Board: Dr. J. L. Ure, Tighnabruach (Argyllshire), Dr. J. R. Kennedy, Dunbeath (Caithness), Dr. A. C. Miller, Fort William (Inverness-shire), Dr. J. Mackay, Aberfeldy (Highland District of County of Perth), Dr. J. Pender Smith, Dingwall (Ross and Cromarty), and Dr. Stuart Bolton, Lerwick (Shetland).

INSURANCE.

THE NATIONAL INSURANCE DEFENCE TRUST.

In October last the conference of representatives of Local Medical and Panel Committees approved the establishment of a fund for the general organization and protection, primarily of the interests of insurance practitioners, but also of those of the whole profession who are, or may be, involved in the administration of the Insurance Acts or similar measures. After close consideration by the Insurance Acts Committee and the Council of the British Medical Association, it has been decided to inaugurate a "National Insurance Defence Trust," of which particulars have now been circulated to Local Medical and Panel Committees in England, Scotland, and Wales. The scheme aims at building up a strong financial reserve for the defence of professional interests.

Before proceeding to define the constitution, objects, and legal position of the Trust, the circular (M.21) gives a brief account of the Central Insurance Defence Fund, which was established when the first National Insurance bill was before Parliament. This Fund was administered by the Insurance Acts Committee on behalf of the Council of the British Medical Association. Its objects were to defray the expenses of organizing combined action of the medical profession, and to provide monetary assistance for practitioners who might suffer through loyalty to the policy recommended by the Association. For administrative purposes nearly £17,000 were raised, and this was supplemented out of Association funds by some £30,000. For compensation purposes £18,000 were subscribed, of which £12,500 remain in this account. For reasons which should appeal to all, it was felt that the right course would be to wind up the old Fund under legal guidance, returning the balance of their subscriptions to those who wished it; but it is believed that many subscribers will be willing to transfer their balance to the Trust.

The trustees of the new fund will be the Insurance Acts Committee of the British Medical Association, that term being defined to include not only the present committee, but any committee of the Association which may be formed in substitution for it, or to which work now discharged by that committee may in future be transferred.

As the majority of the Insurance Acts Committee now consists of members directly elected by Local Medical and Panel Committees, and as the Council of the Association is recommending the forthcoming Annual Representative Meeting to alter the constitution of the committee so as to allow of the direct representatives being selected irrespective of whether they are members of the Association or not, all insurance practitioners will be directly interested through their committees in the administration of the Trust.

Panel Committees cannot subscribe to the Trust out of their funds if these are obtained from a statutory levy, but they can subscribe from a voluntary fund. The statutory levy is subject to Government audit and restrictions, but a voluntary fund is at the absolute disposal of the Panel Committee to be used in any way approved by its constituents. It is suggested that every Panel Committee should pay 3d. per insured person per annum, and at a time of special stress the rate of subscription could be raised temporarily.

Assuming an insured population of 10 millions, and the support of all Panel Committees, the Trust could thus rely on a normal income of £21,000 a year. Such an income would place the Local Medical and Panel Committees, and the Insurance Acts Committee as their central negotiating body, in a very strong position.

The objects of the Trust, which have been drawn up in consultation with the solicitor of the Association in order to cover every possible contingency, are as follows:

(i) To assist in defraying the expenses incurred in organizing or taking any action to protect the interests of the medical profession in connexion with the present National Insurance system or any extension or modification thereof;

(ii) To include, where necessary, financial support of medical practitioners who require such support owing to action taken by them in accordance with any policy laid down or approved by a Conference of Representatives of Local Medical and Panel Committees or of such Committees as may be formed in place of or in substitution for them or either of them, or to which the work now discharged by such Committees or either of them may, as the result of new legislation, be transferred.

(iii) The Conference referred to in (ii) shall take place entirely and solely in the discretion and judgement of the Insurance Acts Committee of the British Medical Association.

The fund should appeal not only to insurance practitioners but also to those who, while not now in panel practice, realize that every section of the profession may be affected by future extensions of national insurance or under the Ministry of Health. A duly audited account of the Trust will be sent each year to the committees subscribing, and will be submitted for approval to the annual conference.

As regards the legal position of the Trust, it will be the duty of the trustees to administer the fund in accordance with objects which are legally advised to be sound and comprehensive. The Trust will have no connexion with the funds of the Association, and any restrictions on the use of Association funds will not apply to it. The cost of defending any legal case which might arise in connexion with the action of the trustees would fall on the Trust fund. Lastly, the argument that the fund would be more secure if the Trust were registered as a trade union is shown to rest on no secure legal foundation, apart from the fact that many members of the profession object strongly to trade unionism as applied to medicine.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—
Surgeon Commanders: S. H. Woods to the *Victorious*, C. T. Baxter to the *Maidstone*, Surgeon Lieutenant Commander F. H. Stephens, O.B.E., to the *Calliope*, Surgeon Lieutenant F. E. Fitzmaurice to the *Cyclops*, Surgeon Lieutenants (Temporary): H. Clough to the *Cesar*, J. B. Mutch to the *St. Margaret of Scotland*, F. E. G. Watson to Hospital Ship *Agadir*, A. C. C. Craig and E. M. Landerdale to the *Englet*, J. R. W. Stephens to the *Defiance*, M. O. Hunter to the *Fisgard*, A. H. J. Smart to the *Victory*, additional, G. A. S. Shacklock to the *Talant*, J. Ryan to Chatham Hospital, J. H. Crawford to the *Dartmouth*, B. S. Collins to the *Amethyst*.

ARMY MEDICAL SERVICE.

Colonel S. F. Clark, on completion of four years' service in his rank, to be retained on the active list under the provisions of Articles 129 and 522 Royal Warrant for Pay.

Temporary Colonel Claude H. S. Frankau, D.S.O. (Captain and Brevet Major R.A.M.C., T.F.), relinquishes his temporary commission on reposting.

Colonel C. K. Morgan, C.M.G., relinquishes the appointment of Assistant Director of Medical Services at the War Office.

Major A. B. Smallman, D.S.O., to be Assistant Director-General, and to be temporary Lieut.-Colonel, vice Brevet Colonel A. L. A. Webb, C.M.G.

Major G. A. D. Harvey, C.M.G., to be a Deputy Assistant Director-General, vice Major A. B. Smallman, D.S.O.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel A. L. A. Webb, C.M.G., is seconded whilst employed under the Ministry of Pensions.

Temporary Lieut.-Colonel J. A. Wait (Lieut.-Colonel R.G.A., T.F.) relinquishes his temporary commission.

Temporary Lieut.-Colonel W. L. W. Marshall, C.M.G., relinquishes his commission on ceasing to be employed with the Huddersfield War Hospital, and retains the rank of Lieut.-Colonel.

The following relinquish the acting rank of Lieut.-Colonel on reposting: Majors G. E. Cathcart, A. E. S. Irvine, D.S.O.; Captains P. G. M. Elvey, D.S.O., M.C., J. H. Beckett.

Temporary Major E. G. Coward to be temporary Lieut.-Colonel, and temporary Captain R. H. Rigby to be temporary Major whilst employed with the Huddersfield War Hospital.

To be acting Lieut.-Colonels: Captain (acting Major) D. H. C. MacArthur (from December 7th to 11th, 1918, inclusive, when he reverts to the acting rank of Major), whilst specially employed; Major A. E. S. Irvine, D.S.O.; Captain (acting Major) A. G. Wells, D.S.O. Whilst in command of a medical unit: Captains E. R. Laing, R. O'Kelly.

The following relinquish the acting rank of Major on reposting:—Captains: E. A. Strachan, E. P. A. Smith, M.C., F. A. Robinson, M.C., J. C. A. Dowse, M.C., Temporary Captains: W. Anderson, R. S. Renton, C. A. Boyd, M.C., W. M. Badenoch, M. W. Baker, G. Buchanan, H. R. MacIntyre, D.S.O., M.C., A. T. Edwards, W. A. Curry, J. H.

Legge, M.C., J. B. Cook, M. W. B. Oliver, S. W. McLellan, M.C., H. D. Reed.

Temporary Captain A. G. Southcombe to be acting Major whilst commanding troops on a hospital ship.

Captain W. Tyrrell, D.S.O., M.C., is seconded for service with the R.A.F.

H. Emerson, M.C., late temporary Captain (acting Major) is granted the rank of Major.

Late temporary Captains granted the rank of Captain: G. D. Laing, C. J. Singer, W. J. Macdonald, T. Duncan, M.C.

Lieutenant J. A. Aitken to be temporary Captain.

Temporary Lieutenants to be temporary Captains: J. A. Aitken, J. Loftus, W. Blight, H. C. Sutton, S. Wilton, J. Maxwell.

The notification in the *London Gazette* of May 10th, 1916, regarding Henry Collier is cancelled.

To be acting Majors: Captain P. G. M. Elvery, D.S.O., M.C. Temporary Captains: J. M. Clements, C. A. Weller, J. B. Tomblinson, E. H. Udall (from August 14th to September 15th, 1918, inclusive), T. Kelly, C. C. Irvine, M.C., E. Biddle, M.C., E. Scott, D.S.O., G. Wilson, J. W. Tocher, M.C., J. G. Ackland, J. Kirtton, M.C., M. R. MacKay, M.C., T. W. Melhuish, L. M. Smith, F. R. Sturridge, M.C., G. A. Lilly, M.C. While specially employed: Captains G. W. S. Paterson (Home Hospital Reserve), R. C. Priest. Temporary Captains: E. A. C. Beard, A. C. Pickett, E. A. Lindsay, A. C. Keep, M.C.

Officers relinquish their commissions:—Temporary Major E. L. Gowland, D.S.O., and is granted the rank of Lieut.-Colonel, January 14th, 1919 (substituted for notification in the *London Gazette*, February 7th, 1919). Temporary Major W. H. Whitehouse, and retains the rank of Major. Temporary Captain, on account of ill health contracted on active service, and retains the rank of Captain: J. S. Crichton. Temporary Captains, and are granted the rank of Major: A. H. Spicer, W. G. Johnson, M.C., A. B. Cardew, M.C., W. T. Hessel, A. T. Mackenzie. Temporary Captains, and retain the rank of Captain: L. H. F. Thatcher, R. H. Smythe, R. Rowlands, T. H. G. Shore, D. M. Ross, W. Templeton, F. P. Wigfield, T. Whitehead, D. S. Robertson, W. S. Stalker, J. Robertson, W. J. Paramore, A. T. Moon, D. R. Williams, M.C., J. C. Mann, A. Allison, T. A. Watson, M.C., J. F. Broughton, M.C., J. N. Clark, C. H. Booth, M.C., J. P. Dow, V. J. Woolley, A. W. C. Drake, W. G. Macdonald, R. T. Herdman, S. H. S. Taylor, G. S. Clancy, K. G. Hearne, W. J. Isibister, M.C., T. C. Graves, W. A. Taylor, A. Levy, R. E. G. Gray, J. McMillan, G. H. Hackney, A. B. Fearnley, H. R. Elliott, F. J. Allen, E. A. Lumley, M.C., W. A. Hishop, G. M. Shaw, O. D. B. Mawson, A. C. Farlinger, J. Cairns, C. E. F. Salt, S. K. Vines, J. J. Boyd. Temporary Captain V. J. P. Clifford on appointment under the Ministry of National Service. Temporary Lieutenant J. Taplin on account of ill health, and retains the rank of Lieutenant. Temporary Lieutenants, and retain the rank of Lieutenant: M. Wheeler, R. M. Rendall, J. D. Russell, T. E. Hill, G. Marshall, H. Manage, C. J. Middleton.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to unemployed list:—Captains: R. E. V. Hale, H. G. Sutherland. Lieutenant W. Cahill.

Lieutenant J. Walker-Brash to be Captain.

Lieutenant O. S. Martin relinquishes his commission on account of ill health, and is permitted to retain his rank.

INDIAN MEDICAL SERVICE.

To be acting Lieut.-Colonels while commanding medical units in the field for the periods noted: Major (now Lieut.-Colonel) E. F. E. Baines, from November 19th, 1914, to April 29th, 1916; Major R. B. B. Foster, from December 24th, 1914, to February 20th, 1915, and from November 27th, 1915, to December 13th, 1915; Major J. E. Clements, from January 14th, 1916, to February 21st, 1916; Major T. C. Rutherford from April 14th, 1918; Major (now Lieut.-Colonel) R. W. Knox, D.S.O., from September 21st, 1914, to July 13th, 1915, and from December 13th, 1915, to January 27th, 1917; Major E. C. Hepper, from March 21st, 1918; Major J. Forrest, from February 16th, 1918; Major J. McA. MacMillan, from February 7th, 1917, to May 20th, 1917, from June 6th, 1917, to September 19th, 1917, and from September 25th, 1917; Captain A. G. Coullie, from December 7th, 1916, to February 6th, 1917; Major I. M. Macrae, from November 3rd, 1917; Major (now Lieut.-Colonel) W. R. Battye, D.S.O., from November 19th, 1914, to May 25th, 1916; Major L. E. Gilbert, from March 1st, 1918, to March 22nd, 1918; Major W. Lapsley, from August 11th, 1918; Major S. W. Jones, from March, 19th, 1918.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain (acting Major) R. Green relinquishes his commission on account of ill health contracted on active service and retains the rank of Major.

Captains relinquish the acting rank of Major on reposting: G. Dalziel, M.C., R. MacKinnon, W. W. Wagstaffe, O.B.E.

Captains to be acting Majors: W. H. Dye (from August 14th to September 15th, 1918, inclusive), (honorary Lieut.-Colonel) D. J. Armour, C.M.G., A. Winfield, R. H. Williams.

Captains I. G. M. Firth and J. W. Brash relinquish their commissions on account of ill health and retain the rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major A. Fowler resigns his commission.

To be acting Lieut.-Colonels whilst specially employed:

Captains (acting Majors) F. Darlow, J. D. Fiddes, M.C.

The following officers relinquish their acting rank on ceasing to be specially employed: Major (acting Lieut.-Colonel) A. P. Swanson, Captains (acting Lieut.-Colonels): A. W. B. Loudon, N. C. Rutherford, Captains (acting Majors): W. Briggs, E. Babst, R. J. Chapman, F. Coleman, M.C., T. J. T. McHattie, L. A. Mackenzie, M.C., W. D. Frew, J. W. Kemp.

Captain (Brevet Major) C. H. S. Frankau, D.S.O., is restored to the establishment.

Captain (acting Major) H. E. Fox relinquishes his commission on account of ill health, and retains the rank of Major.

Captain (acting Lieut.-Colonel) H. Henry, M.C., to be Major, and to retain his acting rank.

To be acting Majors whilst specially employed: Captains F. P. Gibson, W. G. McKenzie, M.C., C. G. K. Sharp, J. G. F. Hosken, E. C. Plummer.

Captain P. H. Mitchiner from 5th London General Hospital to be Captain with precedence from November 9th, 1914.

1st *Eastern General Hospital*.—Captain R. C. Canney is restored to the establishment.

2nd *Northern Field Ambulance*.—Captain (acting Major) W. H. Morrison relinquishes his acting rank on ceasing to be specially employed, March 25th, 1918.

1st *Scottish General Hospital*.—Captain A. W. Falconer, D.S.O., is restored to the establishment.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

To be Major: Major J. Leach, Highland Mounted Brigade Field Ambulance. To be Captains:—Captains: S. McCausland, M.C., 1st West Lancs Field Ambulance, December 15th, 1918 (substituted for notification in the *London Gazette* of January 14th, 1919), D. Lamb, 4th Scottish General Hospital, December 22nd, 1918 (substituted for notification in the *London Gazette* of January 17th, 1919), J. E. G. Thomson, M.C., 1st Highland Field Ambulance, December 15th, 1918 (substituted for notification in the *London Gazette* of January 11th, 1919).

APPOINTMENTS.

DENNE, F. Victor, M.D.BruX, M.R.C.S., L.R.C.P., L.D.S., Dental Surgeon to the Margaret Street Hospital for Consumption, W.I.

HUTT, C. W., M.D.Camb., D.P.H.Oxon., Medical Officer of Health and School Medical Officer, Dudley Town Council.

KER, W. P., M.R.C.S., L.R.C.P., District Medical Officer of the Lutterworth Union.

WATERHOUSE, Rupert, M.D., M.R.C.P.Lond., Physician to the Royal United Hospital, Bath.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

BARLING.—On the 11th inst., at 6, Vicarage Road, Edgbaston, the wife of Lieut.-Colonel S. Barling, F.R.C.S., R.A.M.C.(T.F.), of son.

DEATHS.

DE DENNE.—On March 17th, at 18, High Street, Fareham, the residence of his brother-in-law, Thomas Vincent de Denne, M.R.C.S., L.R.C.P., late of Sidmouth, Devonshire.

GALLOWAY.—At 16, Saltwell View, Gateshead-on-Tyne, on March 15th, Walter Galloway, Surgeon, late of Wrekenton and Low Fell, county Durham. Cremated at Darlington, March 20th.

POTTS.—At Palace Pound, Ross, Herefordshire, on the 14th inst., of pneumonia following influenza, James Ashford Potts, M.B.Edin., M.R.C.S.Eng., eighth son of the late George Potts of Broseley, Shropshire, aged 63.

TORBITT.—On the 11th inst., at Queen's Road, Nuneaton, of acute influenza and pneumonia, Frederick Charles Torbitt, L.S.A., L.M.S.S.A.Lond., in his 46th year.

DIARY FOR THE WEEK.

HARVEIAN SOCIETY, 11, Chandos Street, W.I.—Thursday, 8.30 p.m., Harveian Lecture by Mr. Edred Corner: Nerves in Amputation Stumps.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday and Thursday, 5 p.m., Goulstonian Lectures by Dr. W. W. C. Topley: The Spread of Bacterial Infection.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Social Evening, Mr. Walter G. Spencer: Larrey and War Surgery. Section of *Odontology*: Monday, 8 p.m., Captain Kelsey Fry and Mr. F. N. Doubleday: Treatment of War Injuries of the Maxilla. Section of *Study of Disease in Children*: Friday, 4.30 p.m., Abdominal Cases. Section of *Ophthalmology*: Friday, 8 p.m., Captain Maxted: Malignant Tumour of the Pituitary Body. Mr. J. Herbert Fisher: Migraine. Captain E. M. Eaton, R.A.M.C.: Stereoscopic Vision. Cases.

TUBERCULOSIS SOCIETY, 1, Wimpole Street, W.I.—Monday, 8.30 p.m., Sir William Osler, Bt.: Acute Pneumonic Tuberculosis.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
MARCH.	
21 Mon.	London: Naval and Military Committee, 2.30 p.m.
25 Tues.	London: Public Health Committee.
APRIL.	
2 Wed.	London: Medico-Political Committee.
9 Wed.	London: Finance Committee, 2.30 p.m.
15 Wed.	London: Council Meeting.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MARCH 29TH, 1919.

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THE ORGANIZATION OF THE MEDICAL PROFESSION.

CORRESPONDENCE.

SIR,—Dr. Cox's able apologia for the present attitude of the executive of the British Medical Association towards medical trade unionism (SUPPLEMENT, March 22nd) invites comment. As a member of the Association, I had hoped the Coventry case and its result would have shown our leaders the imperative necessity for reconsidering their attitude towards the Medico-Political Union, in which I am also interested; for years I have endeavoured with others to bring about a *rapprochement* between the two organizations, and it has been chiefly in the hope of such a consummation that I have retained my membership of both. It is therefore a matter for perturbation that apparently the reconsideration alluded to has taken place, without resulting in a change of view; and those of us (and I believe I speak for a not inconsiderable body of opinion) who desire to see the Association and the Union flourishing side by side, and each taking its own part in working for the good of the profession, must examine very closely this reasoned statement. If it appears that the executive of the Association have indeed justified their attitude, and that a large and increasing body of the profession in favour of trade unionism have been misled, the only honest course for its protagonists lies in admitting the claim, and directing their energies towards removing those defects in the organization of the Association which appear most to have militated against successfully resisting the injustices from Government departments and others from which the profession suffers.

A large part of the statement necessarily is not new, and much of it is really a defence of the medico-political activities of the Association in the past; it is with the question of principle, trade union or non-trade union, that I desire to deal, and Dr. Cox's remarks on this head amount to (1) the statement (apparently backed by eminent counsel) that the legal advantages of a medical trade union are practically *nil*; and (2) that the cohesion of a trade union is not more but rather less than that of the British Medical Association.

The first statement, quoting as it does so eminent a counsel in trade union law as Mr. H. H. Slessor, must give all medical trade unionists furiously to think; and on first reading Dr. Cox's article I was at a loss to make it fit with an opinion secured from the same eminent counsel by the Council of the Medico-Political Union in reference to a case having many of the features of the Coventry one: it looked as if Mr. Slessor had changed his views in the interim. The case I refer to is one in which a branch of the Medico-Political Union has taken the action of refusing to meet a medical practitioner on certain grounds not dissimilar to those at Coventry. A variety of coercive measures were proposed, and a case was put to Mr. Slessor; he was asked whether, if these were carried out, an action could lie against the Medico-Political Union or its branch, or whether the registration as a trade union

would protect them against action for damages (libel, slander, conspiracy, or in restraint of trade). I have a copy of his reply, the final gist of which is that Mr. Slessor is of opinion that the Medico-Political Union is covered by the Trades Disputes Act of 1906, and that this statute gives protection for the acts proposed to be carried out.

A careful investigation, however, brings to light a certain essential difference between the Coventry case and the one in question. In the Coventry case the British Medical Association and others were convicted of malice, while the Medico-Political Union entirely avoided this imputation. Now, there is no doubt that the members of a trade union which should be guilty of acts of malice would not be protected by the Trades Disputes Act. The individuals, if not the union, could be sued and mulcted in damages. On the other hand, acts such as refusal to meet, which if carried out in conspiracy by a corporate body, not a trade union, render that body liable, cannot be regarded as cause for action against individuals, who may meet or refuse to meet whom they please. The whole question in relation to the Coventry case therefore resolves itself into whether the Association, had it been registered as a union (which it could not be), and had it not been guilty of malice, could or could not have been mulcted in damages for the action which it took in restraint of trade? It is noteworthy in this connexion that the learned judge specifically referred to the action as being "in restraint of trade." Mr. Slessor has expressed his conviction that such action, free from malice, taken by the Medico-Political Union is protected by its registration under the trade union Acts. I shall be happy to quote Mr. Slessor's opinion if desired.

With regard to the second point raised by Dr. Cox, the question of the relative cohesion of a medical trade union and an association, the proof of the pudding is in the eating, and very little evidence is yet to hand; it is manifest that a union must possess a relatively large membership to secure coherent action, and the Medico-Political Union is still in process of securing that membership. Wherever, in certain districts, it possesses such a preponderating membership, local action has been taken, and I instance my own district of York as an example of what can be done in that direction. But Dr. Cox chooses one instance of general action—the treatment of invalid seamen, marines, and soldiers—in which he is singularly unfortunate. Either he is entirely misinformed of the sequence of events, or he is deliberately misleading his readers. I prefer to think the former, and for his information I will point out that, so far from "no single insurance practitioner" carrying out the suggestions of the council of the Medico-Political Union, they were carried out to the letter by every practitioner in several districts where the membership of the Union was sufficient to prevent a fiasco.

In York, for example, the advice of the Medico-Political Union was followed, and no practitioner accepted discharged soldiers for treatment under the new regulations, but continued to treat them gratuitously until the end of the second quarter after their introduction. At this time the Council of the Union having done its best to secure the withdrawal of regulations which, as I will show, a considerable proportion of panel practitioners throughout the country dislike, came to the conclusion that in face of the opposition of the British Medical Association it was futile to continue the struggle, and recommended that the regulations should be complied with under protest. Then, and not till then, this was done. That the Union was justified in its action is evidenced by the fact that the Association of Panel Committees, representing some 20 per cent. of all panel practitioners, has repeatedly endeavoured to secure the withdrawal of the regulations, and by the opinion which I will venture that these are so irksome that not one-half of the cases treated are actually claimed for at all.

We are left, therefore, much in the same position as before, with the notable exception that while in the past the British Medical Association has taken illegal action in restraint of trade with apparent impunity, it is very doubtful, after the Coventry case, whether any attempt will be made to repeat it, and the adherents of medical trade unionism may take courage to proceed with the only legally protected form of combination for the defence of what is after all, trade or no trade, their means of livelihood.—I am, etc.,

Heworth, York, March 22nd.

J. C. LYTH.

SIR.—I read Dr. Cox's address with much interest. If the British Medical Association's representations are received with attention and acted upon as Dr. Cox claims, instancing the Indian Medical Service pay question, how is it that the rural panel medico has been allowed to struggle on in a position so manifestly unfair compared with that of his brethren in towns? Of my panel patients 50 per cent. live at distances varying between four and seven miles, and yet I get no more than the man in a town whose people are near and easily accessible.

The bonus system is unfair. Take the case of the rural practitioner doing a practice of over £1,000 a year. Although of necessity his panel work is large, he gets nothing. Again, the reduction of notification fees rankles. This, too, in a time when everything is up in price. This reduction the British Medical Association appeared to acquiesce in quite passively. Were representations made in this matter? Why is the Scottish practitioner allowed his mileage and the rural practitioner here deprived of it? Were representations made on this point?

The decline in membership and want of interest in the British Medical Association I attribute to the following causes:

First, the defection at a very critical time of Dr. Smith Whitaker. This aroused a feeling of resentment and betrayal.

Secondly, the capture of the Association by the consultant class and the politician medico. These live with their heads in the clouds and are far too superior to study the needs and welfare of the general practitioner. For myself I am a lukewarm doubting member. I require to have my faith in the British Medical Association quickened. This calls for deeds, not words.—I am, etc.,

Deddington, Oxon., March 24th.

G. H. JONES.

SIR.—Under the heading "Why should the medical profession be organized, and how should it be done?" Dr. Cox, Medical Secretary to the British Medical Association, writes convincingly (SUPPLEMENT, March 22nd, p. 39). The main point of his address is contained in the last paragraph in these words, "to concentrate on what we have got." Better by far the devil we know than the devil we do not know; and I agree with Dr. Cox that it would be better for the whole profession to help to improve the working of the British Medical Association than start an opposition, unless they are convinced that the working of the opposition would be better than improving the working of the British Medical Association.—I am, etc.,

London, W.C., March 21st.

EDWARD YEATES, F.R.C.S.I.

VISIT OF THE MEDICAL SECRETARY TO DUNDEE.

The Dundee Branch of the British Medical Association met in University College, Dundee, on March 19th. Dr. Dalgetty, President, was in the chair, and in spite of the appalling weather there was a good attendance, nearly forty being present, including visitors from Aberdeen, Fife, and Perth. Dr. Cox spoke on the organization of the medical profession (SUPPLEMENT, March 22nd, 1919), and seemed to meet the needs of some of those present by his frank and full exposition of trade unionism in medical affairs. Many questions were asked and answered, and Dr. Cox received a hearty vote of thanks. Dr. Buist was appointed Representative for the Annual Representative Meeting, and Dr. C. S. Young was nominated for representation of the combined Branches in the Council.

MEDICAL REFORM FOR IRELAND.*

BY

T. HENNESSY, F.R.C.S.I., D.P.H.,

IRISH MEDICAL SECRETARY, BRITISH MEDICAL ASSOCIATION.

WHEN Sir William Thompson, President of the Section of State Medicine, invited me to read a paper on the Ministry of Health Bill, I understood his wishes to be that I should address myself as to how the medical situation in Ireland could be fitted in with a Ministry of Health established for this country. With that object I have studied the proposals put forward by the British Medical Association for a Ministry of Health for Great Britain, and from these I have freely borrowed as many ideas as I am of opinion can be included in an Irish Ministry of Health. My views, however, are unofficial and non-committal so far as the profession in Ireland is concerned.

Perhaps not the least of my few qualifications to deal with Irish medico-political questions is that I was for almost twenty years a dispensary doctor in the Poor Law Medical Service, under which between 50 and 70 per cent. of the Irish population are at present receiving free medical treatment as "poor persons." That this is the case is the fault of our legislators who are too indifferent to make themselves acquainted with the medical needs of this country, or to take the advice of those who can best give it. Though the late Chief Secretary for Ireland stated that it was his intention to introduce into Parliament a bill to establish a Ministry of Health for this country, yet he did not consult, in regard to this complicated problem, any body representative of the Irish medical profession, either to ascertain their views or to enlist their support. It is, however, to be hoped that his successor will take steps at an early date to remedy this omission.

It is generally agreed that the main function of a Ministry of Health should be to secure the development and administration throughout the country of adequate health services. That Ireland is in need of such legislation more than any other country in western Europe there will be found few medical men acquainted with Irish health questions to dispute. If, however, legislation is to meet the peculiar medical and economic conditions of this country, they must be dealt with by a measure entirely separate from the English and Scottish bill recently introduced into Parliament.

The main principles governing the establishment of a Ministry of Health either for Great Britain or Ireland are, as regards Central and Local Organization, as follows:

Central Organization.

1. That a Ministry of Health should be created to take over the complete control of all the health services belonging at present to the different Government departments.

2. That the administrative function of a Ministry of Health should be carried out by a central body called the Board of Health, presided over by a Minister of Cabinet rank.

3. That to this Board of Health should be transferred, in Ireland: (a) The duties of the Local Government Board with regard to health; (b) the duties of the Home Office with regard to the inspection of workshops and factories, and those of the Board of Trade—that is, medical inspection of ships; (c) the Irish Insurance Commission; (d) administration of Lunacy Laws; (e) health functions of the Privy Council with regard to midwives, etc.; (f) Education Extension Act, 1915, and medical inspection of school children.

4. That on the Board of Health there should be members of the medical profession representing, in equal numbers, the clinical and preventive sides of medicine. There should be appointed in connexion with the Board of Health a Consultative Council for giving advice and assistance in relation to all health matters. The major portion of the medical representatives on such a council should be selected by the profession as a whole.

For Local Organization.

The country should be divided into suitable administrative areas which might correspond with the existing local

* A paper read before the Section of State Medicine, Royal Academy of Medicine in Ireland, January 17th, 1919.

government areas, or such combination thereof as will require the services of whole-time administrative medical officers, both clinical and preventive. In each of the county and county borough areas there should be formed for administrative purposes a County Health Committee or Borough Health Committee respectively. These committees should consist of representatives (a) of the rating authorities—for example, county councils; (b) of the education authorities; (c) of insured persons and employers of labour—for example, those contributing to a scheme of health insurance; (d) the medical profession; (e) public hospitals; (f) dentists; (g) pharmacists; and (h) nurses.

The Borough and County Health Committees may have the option, with the approval of the Central Board of Health, of appointing in their administrative areas subcommittees, called District Health Committees, to which certain administrative duties might be assigned. These District Health Committees should, in relation to the Borough and County Health Committees, take within certain defined limits the place of boards of guardians and district councils so far as these bodies are at present concerned with the administration of health questions. The different interests represented in the Borough and County Health Committees could be provided for as far as practicable in the District Health Committees.

The principal medical officers of each Borough and County Health Committee should be two, who should be of equal status and whole-time officers—one representing the clinical side of medicine (chief clinical officer), and the other the preventive side of medicine (medical officer of health). The duties of the chief clinical officer should be to advise on questions of medical treatment. The duties of the medical officer of health should be in connexion with preventive medicine generally. The present medical officers of health in the dispensary districts should act as his assistants within the areas assigned to him. A number of whole-time medical inspectors will be also required who might act as medical referees under the Insurance Act, medical inspectors of schools, and carry out public health inspections under the county medical officer of health. For each area the County Health Committee should establish hospitals, including where necessary sanatoriums, clinics (including natal and prenatal maternity and child welfare), nursing schemes, and medical and dental inspection of school children. Those entitled to treatment should be able to obtain institutional, consultative, and specialist services on the recommendation of their medical attendant. There should be also provided, within easy reach, pathological laboratories.

The scheme I have outlined will, for the purpose of discussion, serve as the framework of an Irish Ministry of Health, which can only be applied to this country by accompanying it with a radical reform of the Irish Poor Law Medical Service. It is by the gross abuse of the Medical Charities Acts that between 50 and 70 per cent. of the people in this country receive free treatment. If these Acts in Ireland were administered as rigidly as similar Acts in England, no wage-earners, including their dependants in most cases, would receive free medical treatment in this country. That the abuse of the Irish Poor Law Medical Service is so extensive is not the fault of the people, who, in many cases, are reluctantly compelled to avail themselves of it owing to the failure of the State to provide them, as in England and elsewhere, with a medical service within their reach on a contributory basis.

Outside the half-dozen county boroughs and a few urban centres the population of Ireland is mainly rural and sparse, which for the doctor, whether he is a Poor Law medical officer or private practitioner, means long and expensive journeys. Indeed, if a doctor were to give his time and professional services for nothing and only charge for his travelling expenses it would debar many comparatively comfortable people from availing themselves of his treatment. In the great majority of cases in rural Ireland the car hire at hackney rates would average 10s. a visit and as much as £1 per visit at taxi or garage rates. It is well also to bear in mind that many a dispensary doctor's district is fifteen miles in length by ten or twelve miles in breadth.

The statistics in the annual reports published by the Local Government Board for the past three years (which do not include 1918 with its influenza epidemic) show that on an average for each of these three years the dispensary doctors attended and registered, as poor persons or paupers, 610,322 new cases. Of these about one-third were attended at the patients' homes. Though the number registered may be surprisingly high, yet it does not represent half of those actually attended, particularly of those patients who come to the dispensaries for treatment. The medical attendance on Poor Law patients is never registered unless they present tickets. Poor Law patients, for different reasons, have an objection to provide tickets. Presentation of tickets to the dispensary doctor means no money to him, directly or indirectly; they only mean to him a huge amount of clerical work for which he has neither the time nor the inclination. The result is that

he is pleased to be spared the trouble of registering. This is appreciated by the more observant of his patients, and thus it comes about that as many as half the new cases attended by the dispensary doctors are not registered and are not included in the statistics given by the Local Government Board.

The incidence of sickness amongst potential Poor Law patients is, one year with another, about one in two. The average number registered as being attended as new cases for each year is 610,322, but for the reasons I have given we must at least double this to arrive at the number actually attended. Now with the incidence of sickness as one in two, the Irish dispensary doctors are liable to attend almost 2½ millions of Irish people as "paupers" or "poor persons." For their actual work, and liabilities for the treatment of 2½ millions of people, the dispensary doctors received in 1917 £109,604 in so called salaries, or, on an average, approximately £130 per annum, which is considerably less than half what would be charged by a posting establishment or a garage for the gross mileage covered in travelling to and from the patients who were attended at their homes.

Further, it is by no means unusual to find a dispensary doctor of 75 valiantly trying to discharge the duties of a district some twelve miles long by almost as many broad. Sparsely scattered through such a district there are between 4,000 and 5,000 people solely dependent for their medical treatment on this doctor. He cannot afford to resign, because he was unable to put anything aside for his old age out of his miserable salary of £120 or £130 a year.

All this is very bad for the dispensary doctors, but worse for the unfortunate people who are dependent for their lives on such an ill-requried medical service. Yet the existence of this Poor Law Medical Service was made a pretext for deleting the medical benefits from the Insurance Act in its application to Ireland. The question now is, will history repeat itself in the case of the Ministry of Health legislation?

The provisions made for the administration of the Public Health (Ireland) Act (1878) are farcical in their application. In this country there are no whole-time, part-time, or any kind of county medical officers of health. The dispensary doctor is the medical officer of health of the district assigned to him for the discharge of his duties under the Medical Charities Acts. The average population for whose "public health" he is responsible is between 4,000 and 5,000. His salary is usually about £15 per annum. His board of guardians, under the name of the district council, is the executive sanitary authority. The same board of guardians, *alias* district council, is his employer in almost all his many and varied official capacities. He is also dependent on the goodwill of the members of his board of guardians for his private practice. The guardians and their friends are as often as other members of the community misdemeanants against the sanitary laws, so that if the medical officer of health had the temerity to report his patrons to themselves he would be asking them in their executive capacity to execute themselves. With these few remarks we can afford to quit the Irish sanitary burlesque.

In dwelling so much on the appalling drawbacks of the Irish Poor Law Medical Service my object is to make, in the interests of its medical officers and the public health of Ireland, an imperative case for its immediate reform, so that it can be adapted to the best advantage to fit in with a Ministry of Health for this country. To prepare for some suggestions I am about to make, I will quote briefly some recommendations by Irish Commissions and Irish Conventions which cannot be ignored if we desire to accomplish our purpose.

In 1906 the Vice-Regal Commission published its report on Poor Law reform in Ireland. It recommended amongst many very important reforms a State medical service for county and Poor Law hospitals, and the cost thereof defrayed out of money voted by Parliament. The entrance into this State medical service was to be by competitive examination.

The Irish Convention appointed in the year 1917 for the purpose of "drafting a constitution for their country which should secure a just balance of all the opposing interests," recommended by 42 votes to 18 "that there shall be a Civil Service Commission consisting of representatives of Irish universities which shall formulate a scheme of competitive examination for admission to the public services, including statutory administrative bodies." In the statutory administrative bodies mentioned in this recommendation are included the appointments made by boards of guardians. Whatever may be our individual political views we can all, as Irishmen, rejoice at this finding of the Irish Convention, as it at once places Ireland as a pioneer of a movement that we all hope may become world-wide for the abolition of existing patronage and its vitiating abuses.

In 1913 a Departmental Committee was appointed by the Treasury with regard to the extension of medical benefits to Ireland. The majority reported in favour of the extension of medical benefits to the six county boroughs, but at the time did not proceed with the inquiry in regard to the rest of Ireland.

In 1910 a referendum of the Irish medical profession was taken and considerably over 90 per cent. voted for a national medical service with entrance by competitive examination, and placed under the control of a board containing a due proportion of medical men elected by the service, with laymen chosen by the county councils.

In 1917 the Irish Medical Committee, an executive body representing the entire Irish profession, endorsed the recommendation of its Irish Poor Law Medical Committee, which approved of the principle of the establishment of a Ministry of Health for Ireland, and urged that any legislation for this purpose should embody the unification of all the different medical services on the lines of a national service with entrance by competitive examination and compulsory superannuation.

To meet the peculiar position of medical affairs in Ireland and their relation to the political and national situation, I do not advocate such a State service as would include medical treatment for rich and poor, with doctors paid a fixed salary by the State. I am strongly of opinion that, according to the areas we have to deal with in Ireland, we must adopt a more or less mixed system.

As I have quoted above, a Departmental Committee in 1913 recommended the extension, under the Insurance Act, of medical benefits to Ireland with free choice of doctor, for the six county boroughs. In that report provision for treatment was made not only for the insured persons but also for their dependants. The capitation rates offered by the approved societies were ridiculously inadequate. The unreasonable attitude, with regard to remuneration, of many of the approved societies was of course influenced by their knowledge that they could always fall back on abuse of the Medical Charities Acts for the treatment of the majority of the insured and their dependants. Anyhow, so far as I know, nothing at present stands between the insured persons and their dependants, in the six county boroughs, having the advantage of the medical benefits of the Insurance Act if the Irish Insurance Commission and the approved societies are prepared to meet the doctors in a reasonable spirit. Nor do I see the difficulty of providing medical benefits on similar terms and conditions for some dozen or fifteen of the larger urban areas outside the six county boroughs.

For the rural areas I must propose an entirely different scheme. Nine out of every ten rural districts are one-doctor areas. That they are so is due to the economic factor that there is very much less than a living for one. More important to the public than the choice of one of two doctors in these areas is to place one doctor on such an economic basis that he shall be in a position to set aside enough of his salary to pay for the necessary conveyances to give adequate and speedy attendance to those who depend on him for their medical treatment.

For rural areas I would propose a medical service with entrance by competitive examination, open to both sexes. The successful candidates should be granted a choice of vacancies—for example, "districts"—in the order of merit in which they were placed in the examination. The doctor having selected his district should assume office under the County Health Committee, and be put in touch with any District Health Committee which might be appointed for his district or combination of districts. His public duties would be to attend all insured persons and their dependants, the destitute poor, and possibly some others. He would also act as assistant medical officer of health for his district under the county M.O.H. For all this work, in the average district as at present constituted, he should be paid a minimum salary of £350 per annum, with yearly increments of £10 until a maximum of £500 is attained. He would, of course, be permitted to engage in private practice in his locality. He should be liable to be compulsorily retired on pension at the age of 65, or at any time earlier if he is unfit to discharge his duties. In the event of meeting a fatal accident, or contracting a fatal illness in the discharge of his duties, provision should be made for his widow and children. Where the injury or illness does not end fatally, but renders the medical officer permanently unfit to discharge his public duties, provision should be made for compensation.

Provision should be made in the Irish Medical Service for promotion within itself. All the higher appointments, including inspectorships, etc., should be filled, after a limited time, by selection from the rank and file. Promotion should be made in accordance with length and character of service, and post-graduate study, particularly when this takes the form of attaining one or more of the higher diplomas in medicine, surgery, obstetrics, or public health.

Association Notices.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, April 16th, in the Council Room, 429, Strand, London, W.C.2.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

March 13th, 1919.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Lieutenant Commanders: A. C. Malcolm to the *Dartmouth*, E. M. Browne to the *Inflexible*, W. H. Hastings to the *Anethyst*. Surgeon Lieutenants: J. Hollings to the *Hecla*, G. F. B. Page to the *Vivid* for St. Budeaux Camp. Surgeon Lieutenants (temporary): L. H. Woods to the *Greenwich*, R. W. W. Ford to the *Iron Duke*, F. Ewart to the *Crecent* (temporary), G. L. Ritchie to the *Crecent* (additional), R. P. Ninnis to the *Hercules*, E. V. Corry to the *Iron Duke*, B. Dakers to the *Indomitable*, A. F. Grimby to Chatham Hospital, A. W. Gunn to the *Carnarvon*, C. M. Williams to the *Wallington*.

ARMY MEDICAL SERVICE.

Colonels retained on the active list under the provisions of Article 120, Royal Warrant for Pay and to be supernumerary: R. L. L. Macleod, C.B., N. C. Ferguson, C.M.G., S. G. Allen, P. C. H. Gordon, C.M.G., C. H. Melville, C.M.G., J. S. Davidson, J. Fallon, G. H. Barefoot, C.B., C.M.G., T. du Bédat, White, C.M.G., H. T. Knaggs, C.M.G., R. H. Penton, D.S.O., A. L. F. Bate, C.M.G., F. J. Morgan, C.M.G., B. H. Scott, C.M.G., W. L. Gray, C.M.G., C. A. Young, C.M.G., E. M. Hassard, G. T. Rawnsley, C.B., C.M.G., A. J. Luther, C.B., S. G. Moores, C.B., C.M.G., T. B. Beach, C.M.G., C. W. R. Healey, C.M.G., W. T. Mould, A. W. Bewley, C.M.G., R. J. Copeland.

ROYAL ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel C. J. Trimble, C.B., C.M.G. (Lieut.-Colonel and Honorary Colonel T.F. Res.), relinquishes his temporary commission.

Lieut.-Colonel H. K. Palmer is placed temporarily on the half-pay list on account of ill health contracted on active service.

To be acting Lieut.-Colonels:—Whilst employed as Assistant Director of Medical Services of an Army: Major G. A. D. Harvey, C.M.G. Whilst in command of a medical unit: Captain A. H. T. Davis, Captain (acting Major) N. T. Whitehead, M.C., Major G. de la Cœur.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

YOUNGER.—On 25th March, 1919, at 2, Mecklenburgh Square, the wife of G. C. Nelson Younger, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

BROOKE.—On the 19th inst., at Talma House, Victoria Park, Manchester, Henry Ambrose Grundy Brooke, M.B., B.A.Lond., in his 65th year.

CLARKE.—On the 19th inst., at his residence, Gravelly Hill, Birmingham, Walter James Clarke, M.R.C.S., L.R.C.P.Lond. (Medical Officer of the V.A.D. Hospital, "Norlands," Erdington), beloved husband of Emily Hutton Clarke, aged 62 years. Cremated at Perry Barr, March 24th.

CRESWELL.—At Le Guet, Cobo, Guernsey, on March 17th, William George Creswell, M.D.Durh., aged 68.

DIARY FOR THE WEEK.

RÖNTGEN SOCIETY, Royal Society of Arts, 18, John Street, Strand, W.C.—Tuesday, 8.15 p.m., Dr. W. S. Lazarus-Barlow: Biological Effects of Small Quantities of Radium.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday, 5 p.m., Goulstonian Lecture by Dr. W. W. C. Topley: The Spread of Bacterial Infection. Thursday, 5 p.m., Lumsian Lecture by Sir Humphry D. Rolleston, K.C.B.: Cerebro-spinal Fever.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Social Evening. Dr. William Hunter: On Experiences and Results of Antityphoid Inoculation in Eastern War Areas, 1915-19. Sections of Ophthalmology and Laryngology: Wednesday, 8 p.m., Discussion on Injuries and Inflammatory Diseases affecting the Orbit and Accessory Sinuses. Openers: Mr. L. V. Cargill, Mr. G. Seccombe Hett, Mr. A. W. Ormond, and Mr. E. D. Davis. Section of Obstetrics and Gynaecology: Thursday, 8 p.m., Mr. Gordon Ley: Full Time Extrauterine Gestation. Specimens. Section of Laryngology: Friday, 4 p.m., Cases. Section of Anaesthetics: Friday, 8.30 p.m., Election of Officers and Council for 1919-20.

The Royal Society of Medicine keeps open house for medical officers of all the Allied Forces, and invites them to make free use of its library and rooms. The Emergency Post-Graduate Scheme under the charge of the Fellowship of Medicine is also open to all medical officers. Particulars of this will be supplied by the Secretary, "Fellowship of Medicine," 1, Wimpole Street, W.1.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
APRIL.	
2 Wed.	London: Medico-Political Committee.
9 Wed.	London: Journal Committee, 2 p.m. London: Finance Committee, 2.45 p.m.
16 Wed.	London: Council Meeting.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 5TH, 1919.

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British Medical Association.

CURRENT NOTES.

Fees for Notification of Infectious Diseases.

IN the SUPPLEMENT of November 9th, 1918, we printed a letter sent to the President of the Local Government Board and to the Chancellor of the Exchequer by the Medical Secretary of the Association, on the question of the fees payable to medical practitioners for notification of infectious diseases. In pursuance of the policy of not letting this question drop, a further letter upon the same lines was addressed on February 24th to Dr. Addison, now President of the Local Government Board, in the hope that he would see his way to take action "in a matter which has caused and is still causing great resentment and a continual sense of injustice in the minds of the members of the medical profession." The letter recapitulated the facts relating to the reduction of the notification fee from 2s. 6d. to 1s. under the Local Government (Emergency Provisions) Act, 1916. From the first the British Medical Association protested against the reduction, and warned the Government, both by letter and by deputation, of the strong feeling which it would arouse among the general practitioners of the country. The letter ended by urging that as a matter of simple justice the old fee should be restored, and asking Dr. Addison to give the Association an opportunity of laying the case more fully before him by deputation at an early date. The reply to this letter was that "Section 5 of the Local Government (Emergency Provisions) Act, 1916, will come to an end when peace is ratified. The Board understand that the British Medical Association were willing last year that the fee for notification of other infectious diseases should be restored to 2s. 6d. and that the fee for notification of measles should continue at 1s., and I am to inquire whether the President may understand that this is still the view of the Association." In a letter to the Board, dated March 24th, the Medical Secretary challenged the assumption contained in the sentence last quoted. The only possible foundation for it, he said, could be what occurred when a deputation from the Association to Mr. Hayes Fisher, on April 6th, 1916, expressed strong objection to the proposal to reduce the notification fee, as is fully explained by Dr. Cox in his reply on the discussion at Glasgow, reported at page 52.

War Emergency Fund of the Royal Medical Benevolent Fund.

A subscription of £2 10s. has been received from the Wimbledon Division of the British Medical Association (per Dr. G. Cowie, Honorary Secretary) in response to the appeal, and has been passed on to the Treasurer of the War Emergency Fund. The names of individual subscribers are published monthly in the advertisement pages of the JOURNAL.

Membership of Association.

The total number of members of the Association on March 28th, 1919, was 22,812, as compared with a membership of 22,034 on March 31st, 1918.

THE ORGANIZATION OF THE PROFESSION.

GLASGOW MEETING.

A MEETING of the medical profession in Glasgow and district, called by the Glasgow and West of Scotland Branch of the Association, was held in the Christian Institute, Glasgow, on March 18th. There were over 200 present.

Dr. LAWRIE of Greenock, President of the Branch, took the chair, and Dr. COX addressed the meeting on the lines of the speech already reported in the SUPPLEMENT of March 22nd, and afterwards questions were asked.

Dr. GLEN (Glasgow) criticized the composition of the Medical Parliamentary Committee appointed at the meeting held in London on October 1st. He said also that the Committee set up in Scotland to look after the interests of the profession as regards the Ministry of Health only comprised eighteen medical practitioners, and these were members of the Scottish Committee of the British Medical Association. He thought there should have been a vote of the profession on the matter; the great bulk of the members of that Committee knew nothing about the needs of the people who would mainly have to be catered for by the Ministry of Health.

Dr. COLVIN (Glasgow) expressed the general feeling of insurance practitioners that the capitation fee should be raised to 10s., and asked what the British Medical Association was prepared to do if this demand were again made and refused.

Dr. BENNETT (Glasgow) said he was disappointed with Dr. Cox's speech, that Dr. Cox was not a lawyer and therefore his references to the legal protection given by trade unionism must be taken with reserve. The British Medical Association could only speak for a little over 50 per cent. of the profession and the other practitioners who were not members of the Association had not been consulted in regard to many of the matters which affected the profession as a whole.

Dr. BURNS (Bridgeton) and Dr. RUSSELL (Glasgow) asked what the British Medical Association did when the fee for notification of infectious diseases was reduced from 2s. 6d. to 1s., and what it was now doing in the matter. Dr. Russell inquired also what the Association had done to protect the profession from signing the agreement with the Insurance Committees, which, he said, was a one-sided document that did not protect the profession at all.

Dr. LAMBIE (Glasgow) inquired whether the Ministry of Health Bill incorporated a whole-time medical service or whether it was proposed to introduce such a service.

Dr. TAYLOR (Glasgow) asked about the position of the Advisory Council to the Ministry of Health and how it was to be elected.

Dr. Cox, in reply, said he had expected much more heckling from a Scottish audience; he was disappointed, seeing that there were several advocates of trade unionism present, that none of them had tried to expose any fallacy in his arguments on that question. He wanted to make it clear that the argument about trade unionism was not merely a competition between the British Medical Association and the Medico-Political Union. Having been in medical politics for about twenty-five years he had seen many such bodies come and go, and the British Medical Association had kept on with its work as before. The only thing that disturbed him was the effect upon the organization of the profession. It was certain that

if several bodies approached the Government professing to represent the profession, the Government could not resist the temptation to play off one body against the other. As regards the legal arguments, he did not pretend to be a lawyer, but he had given much time to the study of this subject and had recently discussed it at length with the two able lawyers mentioned in his speech. They had convinced him that there was nothing the Association was doing which was not within its powers, though objection had been taken to certain ways in which those powers were used. The moral was that the Association should be more careful in the future in its procedure, but not that it should drop its work of protecting the profession and leave it to other bodies who had proved no capacity for doing it any better.

The complaint that the profession had not been consulted by the Association in regard to the Ministry of Health showed that the questioners had not kept themselves conversant with the *BRITISH MEDICAL JOURNAL*. The Ministry of Health scheme was published for discussion by the Divisions in 1917, and many references were made to it in the *JOURNAL* of that year. It was republished in 1918, and further discussion took place on it at the Representative Meeting. It was open to any Division to have expressed its opinion on that scheme, and, indeed, all the Divisions were specifically asked to send up criticisms or amendments. As for a whole-time state service and the Ministry of Health Bill, there was no more necessary connexion between these two things than there was between the National Insurance system and a whole-time service, and the Government in setting up its National Insurance system had deliberately chosen a part-time service in which the existing medical practitioners were all asked to take a share. He did not believe the Government had any idea of starting a whole-time service; and, indeed, why should they? Such an intention would undoubtedly lead to a bitter conflict, not only with the majority of the medical profession, but with the vast body of the public, whose desire for such a service, if it ever existed, had not been increased by what so many of them had seen in the army. As for the criticism that the British Medical Association represented little more than 50 per cent. of the profession, did that mean that the only large organized body of the profession was to cease making representations because every one did not join it? Surely the duty of that body was to see that the Government and other bodies concerned were at any rate made aware of the views of those medical men who had taken the trouble to organize themselves.

The Scottish Ministry of Health Committee was not an ideally representative body. But some committee was immediately necessary, and a combination of representatives of the various universities and examining bodies with the members of the Scottish Committee of the British Medical Association seemed the most suitable body which could be got together at short notice. When it came to the nomination of an advisory committee to the Minister of Health the profession must of course be consulted on a much broader basis, and also as to the details of the bill when available. In reply to Dr. Colvin's question as to what the Association could do if the profession determined to ask for a higher capitation fee and the Government refused, supposing the profession was united—a big assumption—no Government could coerce it. Having ascertained that the profession was practically unanimous on the subject, the Association would arrange, through the Conference of Panel Committees and the Panel Committees throughout the country, that all practitioners should decline to accept the contract for the ensuing year unless the fee was raised. There was no doubt whatever as to the power of the Association to do this, and in a smaller way the Association had in fact organized many such refusals to accept contracts. But in view of the present situation in the industrial world a Government could no more force upon a practically united profession terms that that they did not want than it could force such terms upon any body of workers.

As to the fee for notification of infectious diseases, there had been much ill-informed criticism on this matter. When the Association first heard that the Government was calling upon every department to find ways of economizing, and that the Local Government Board proposed to cut down notification fees, he went to the Board and ascertained that this was the case. A committee of the Association which met very shortly afterwards appointed a deputation to meet the President, consisting of Mr. E. B. Turner, Mr. Harman, and himself. They saw the Parliamentary Secretary, Mr. Hayes Fisher, together with officials of the Board. They told him that the profession objected strongly to any reduction, and considered the fee well earned. But finding that the Board was apparently determined to put this reduction through, the deputation made this suggestion: "You say this is a war measure; in order to prove that the medical profession is willing to assist the Government at a time like this, we believe the profession would be willing to accept a fee of 1s. for measles until the end of the war, seeing that this is now to become notifiable for the first time." The deputation never said that 1s. was a sufficient fee for this purpose, because they realized that the work and responsibility were just the same for measles as for the other diseases. But they thought it a fair offer which they believed the profession would be willing to back. The Local Government Board, however, insisted upon economizing at the expense of the profession, and although members of Parliament were circularized on the subject the bill went through. When he was asked why the Association took this lying down, he would in turn ask what the objectors would have suggested doing. The only plan open to the Council of the Association was to advise the profession to adopt

passive resistance to the law and refuse to notify. How many would have been prepared in the middle of war to take such a step, or would have supported the Council in advising such a step? There was no other way; the Act had been passed. But the Association had not taken the matter lying down. It had protested again and again. The Representative Meeting had year by year protested against the mean action of the Government, and this resolution, together with a letter explaining the position, had been sent to each successive President of the Local Government Board. When Dr. Addison came into office he was, further, asked to receive a deputation, and it was believed that this would shortly take place. The Council of the Association would leave no stone unturned to secure reversal of the decision to reduce the fee when the present Act came to an end, which it would on the signing of peace. Lastly, the legal status of the insurance agreement was now being discussed at the round table conference between representatives of the Insurance Acts Committee and the Commissioners. Next year, when a new agreement would have to be signed, full opportunity would be given for discussion of this important matter.

Dr. Goff of Bothwell, in moving a vote of thanks to Dr. Cox, expressed the view that the British Medical Association was the only organization which could thoroughly protect the interests of the profession, and that attempts to set up "side shows" would be damaging to all. He urged that more meetings of the Divisions of the Association should be held for free discussion, and that all members should persuade their neighbours to join it.

CORRESPONDENCE.

SIR,—In Dr. Cox's address in the *SUPPLEMENT* to the *JOURNAL* of March 22nd (which many will read with mixed feelings of sorrow and anger) he states on p. 41, with reference to miners downing tools and extracting all they demand, "that doctors have quite often done it and can do it again with a good case on which they are united and one which they can convince the public is just." Now, in Middlesex the insurance practitioner has been compelled to accept 5s. 4d. a head, instead of 7s. 6d. according to our contract. This results in my own case in a loss of £100 a year.

We have been told over and over again what the Association has done. Why in the name of justice did not it prevent this barefaced robbery? I am told by the Medical Defence Union that we have no legal redress in the matter. Would a trade union have knuckled under? Must we sit still and be robbed by the State? If Dr. Cox's assertion quoted above be correct why did not the Association insist on our just rights?

I should like to suggest that before having any dealings with the Government in the matter of the future Health Bill we should refuse to proceed until all arrears (including the difference between 5s. 4d. and 7s. 6d.) be paid to those who worked for it and trusted in the faithful performance of a moral, if not a legal, contract. In conclusion, let me, as a member, congratulate the Association on the war bonus we received in the matter of the notification fees.—I am, etc.,

London, N., March 23rd.

R. MILLS HALL.

SIR,—Dr. Alfred Cox's address on the organization of the medical profession will have been read with much interest. While all will fully agree that organization is now, more than ever, essential to the welfare of the medical profession, Dr. Cox does not appear to advance any practical solution to the problem of organization.

At the moment the status of the British Medical Association, as regards the medical profession, seems far from being defined. It is stated that the membership of the Association is half of the medical profession. Of this half a considerable number is directly opposed to the past and present policy of the Association; therefore the executive of the Association represents a minority of the profession.

It is quite justifiable to ask on what authority did the Association represent the profession over the Insurance Act? Certainly on this occasion the executive of the Association went against the wishes of its members. Again without authority the Association took upon itself to represent the profession as regards the Central Medical War Committee. Now yet again, over proposed new legislation, the Association is making itself a mouthpiece of the profession, though it only represents a minority.

It is greatly to be regretted that the Association declines to or is incapable of converting itself into a truly representative association of the medical profession, also that fair criticism is denied space in the columns of the *JOURNAL*.

I am convinced that if the Association would become

more sympathetic to the needs of the profession and represent its wishes it would receive the unqualified support of the bulk of medical men; but until the Association reforms itself, and so long as it only represents a minority, it is intolerable that the Association should pose as representing the voice and feelings of the medical profession.—I am, etc.,

G. W. C. HOLLIST,
Captain R.A.M.C. (T.F.).

Maidenhead, March 27th.

SCOTTISH BOARD OF HEALTH.

THE Scottish Committee is asking the Secretaries of all Divisions in Scotland to call together all the members of the profession in their areas to consider the Ministry of Health Bill for Scotland, and to forward their opinions and comments to the Scottish Committee without delay. For the convenience of members we print the bill.

A Bill to establish a Scottish Board of Health to exercise powers with respect to Health and Local Government in Scotland, and for purposes connected therewith.

BE it enacted by the King's most excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. *Establishment of Board.*—For the purpose of promoting the health of the people throughout Scotland, and for the purpose of the exercise of the powers transferred or conferred by this Act, it shall be lawful for His Majesty to appoint a Scottish Board of Health (hereinafter called "the Board").

2. *General Powers and Duties of Board in Relation to Health.*—It shall be the duty of the Board in the exercise and performance of any powers and duties transferred to or conferred on them by or in pursuance of this Act to take all such steps as may be desirable to secure the effective carrying out and co-ordination of measures conducive to the health of the people, including measures for the prevention and cure of diseases, the initiation and direction of research, the treatment of physical and mental defects, the collection, preparation, and publication of information and statistics, and the training of persons for health services.

3. *Constitution of Board.*—(1) The Secretary for Scotland may appoint a parliamentary under-secretary, who shall be responsible under him for the administration of the Board. The Secretary for Scotland shall be President, and the parliamentary under-secretary shall be Vice-President of the Board by virtue of their respective offices. *There shall be paid to any parliamentary under-secretary so appointed such remuneration as the Treasury may determine.* The office of an under-secretary so appointed shall not render the holder thereof incapable of being elected to, or sitting or voting as a member of, the Commons House of Parliament.

(2) The Board shall, as at first constituted, include the existing appointed members of the Local Government Board for Scotland, and such two of the Scottish Insurance Commissioners as the Secretary for Scotland shall nominate, and shall at all times include two registered medical practitioners, one or more women, and a member of the Faculty of Advocates or law agent of not less than ten years' standing.

The number of members (other than *ex officio* members) shall at no time exceed six, and subject as aforesaid the power of appointing such members shall be exercisable by His Majesty on the recommendation of the Secretary for Scotland.

Such member of the Board as the Secretary for Scotland, with the approval of His Majesty, may designate shall be (chairman of the Board in the absence of the President and Vice-President.

The Chairman and other members of the Board (not being members ex officio) shall receive such salary or remuneration as the Treasury may determine.

4. *Transfer of Powers and Duties to and from Board.*—(1) There shall be transferred to the Board:—

- (a) All the powers and duties of the Local Government Board for Scotland;
- (b) All the powers and duties of the Scottish Insurance Commissioners;
- (c) All the powers of the Privy Council and of the Lord President of the Council under the Midwives (Scotland) Act, 1915;
- (d) All the powers and duties of the Secretary for Scotland under the Alkali, etc., Works Regulation Act, 1906;
- (e) All the powers and duties of the Secretary for Scotland under the Burial Grounds (Scotland) Act, 1855;
- (f) All the powers and duties of the Secretary for Scotland under the Rivers Pollution Prevention Acts, 1876 and 1893, section fifty-five of the Local Government (Scotland) Act, 1889, and the Rivers Pollution Prevention (Border Councils) Act, 1898;
- (g) All the powers and duties of the Secretary for Scotland under the Births, Deaths, and Marriages (Scotland) Acts, 1854 to 1910, and the Vaccination (Scotland) Acts, 1863 to 1907;
- (h) All the powers and duties of the Secretary for Scotland and the Highlands and Islands (Medical Service) Board under the Highlands and Islands (Medical Service) Grant Act, 1913;

Provided that in such matters of a judicial nature under the National Insurance (Health) Acts, 1911 to 1918, as may be

prescribed under those Acts, the powers and duties of the Scottish Insurance Commissioners by this Act transferred to the Board shall be exercised by the Board through a special body or special bodies of persons constituted in such manner as may be prescribed.

(2) It shall be lawful for His Majesty from time to time by Order in Council to transfer to the Board:—

- (a) All or any of the powers and duties of the Scottish Education Department with respect to the medical inspection and treatment of children and young persons;
- (b) All or any of the powers and duties of the Minister of Pensions with respect to the health of disabled officers and men after they have left the service, so far as those powers and duties relate to Scotland;
- (c) Any other powers and duties in Scotland of any Government department which appear to His Majesty to relate to matters affecting or incidental to the health of the people.

(3) It shall be lawful for His Majesty from time to time by Order in Council to transfer from the Board to any other Government department any of the powers and duties of the Board which appear to His Majesty not to relate to matters affecting or incidental to the health of the people.

And it is hereby declared that it is the intention of this Act that, in the event of provision being made by Act of Parliament passed in the present or in any future Session for the revision of the law relating to the relief of the poor in Scotland and the distribution amongst other authorities of any powers exercisable by parish councils, there shall be transferred from the Board to other Government departments such of the powers and duties under the enactments relating to the relief of the poor then vested in the Board (not being powers or duties relating or incidental to the health of the people) as appear to His Majesty to be such as would be more conveniently exercised and performed by such other departments.

(4) His Majesty may by Order in Council make such incidental, consequential and supplemental provisions as may be necessary or expedient for the purpose of giving full effect to any transfer of powers or duties by or under this section, including provision for the transfer of any property, rights, and liabilities held, enjoyed, or incurred by any Government department in connexion with any powers or duties transferred, and may make such adaptations in the enactments relating to such powers or duties as may be necessary to make exercisable by the Board and the officers thereof, or by such other Government department and their officers, as the case may be, the powers and duties so transferred.

(5) In connexion with the transfer of powers and duties to or from the Board by or under this Act, the provisions set out in the First Schedule to this Act shall have effect.

5. *Consultative Councils.*—(1) It shall be lawful for His Majesty by Order in Council to establish consultative councils for giving, in accordance with the provisions of the Order, advice and assistance to the Board in connexion with such matters affecting or incidental to the health of the people in Scotland as may be referred to in such Order.

(2) Every such council shall include persons of both sexes, and shall consist of persons having practical experience of the matters referred to the council.

6. *Staff and Remuneration.*—(1) The Board may appoint such secretaries, officers, and servants as the Board may, subject to the sanction of the Treasury as to numbers, determine.

(2) *There shall be paid (out of moneys provided by Parliament) to the secretaries, officers, and servants of the Board such salaries or remuneration as the Treasury may determine.*

(3) *The expenses of the Board, including payments to members of consultative councils and committees thereof, to such amount as may be sanctioned by the Treasury, shall be paid out of moneys provided by Parliament; but no such payment shall be made other than the repayment of travelling expenses and payment of subsistence allowance, and reasonable compensation for loss of remunerative time.*

(4) There shall be transferred and attached to the Board the persons employed under the Local Government Board for Scotland, the Scottish Insurance Commissioners, and the Highlands and Islands (Medical Service) Board, and such of the persons employed under any other Government department in or about the execution of the powers and duties transferred by or under this Act to the Board, as the Board and Government department, with the sanction of the Treasury, may determine.

(5) The Board may from time to time distribute the business of the Board amongst the several persons transferred or attached thereto in pursuance of this Act, in such manner as the Board think right, and those persons shall perform such duties in relation to that business as may be directed by the Board.

Provided that such persons shall be in no worse position as respects the tenure of office, salary, or superannuation allowance, than they would have been if this Act had not been passed.

(6) For the purposes of this section a person attached to a Government department, whether as a Commissioner, member of a Board, or otherwise, shall be deemed to be employed under the department.

7. *Seal, Style, and Acts of Board.*—(1) The Board may sue and be sued by the name of the Scottish Board of Health, and may for all purposes be described by that name, and service on the Board of all legal processes and notices shall be effected by service on a secretary of the Board.

(2) The Board shall have an official seal, which shall be officially and judicially noticed, and any act to be done, or deed

to be signed, or instrument to be executed by or on behalf of the Board may be done, signed, or executed in the name of the Board by the President, Vice-President, or Chairman of the Board, or a secretary, or any person authorized by the Board to act in that behalf.

(3) Every document purporting to be an order or other instrument issued by the Board, and to be sealed with the seal of the Board or to be signed as aforesaid, shall be received in evidence and be deemed to be such order or other instrument without further proof, unless the contrary is shown.

(4) The Documentary Evidence Act, 1868, as amended by the Documentary Evidence Act, 1882, shall apply to the Board as if the Board were mentioned in the first column of the schedule to the first mentioned Act, and as if the President or Vice-President or a secretary of the Board or any person authorized by the Board to act in that behalf were mentioned in the second column of that schedule.

8. *Provisions as to Orders in Council.*—(1) Any Order in Council made under this Act may be revoked or varied by a subsequent Order.

(2) Before any Order in Council under this Act (other than an Order appointing a day for the commencement of this Act or any provision thereof) is made, notice of the proposal to make the Order and of the place where copies of a draft of the Order can be obtained shall be published in the *Edinburgh Gazette*, and in such other manner as the Board think best adapted for insuring publicity, and a draft of the Order shall be laid before each House of Parliament for not less than thirty days on which such House is sitting.

(3) In the case of an Order providing for any transfer of powers and duties to or from the Board under paragraph (h) or paragraph (e) of subsection (2), or under subsection (3), of section four of this Act, the Order shall not take effect until both Houses of Parliament have by resolution approved the same and shall take effect subject to any modifications and adaptations which may be agreed to by both Houses of Parliament: and in the case of any other Order if either House before the expiration of such thirty days presents an address to His Majesty against the draft, or any part thereof, no further proceedings shall be taken thereon, without prejudice to the making of any new draft Order.

9. *Short Title, Commencement, Extent, Repeal, Interpretation.*—(1) This Act may be cited as the *Scottish Board of Health Act, 1919*, and shall come into operation upon such day or days as may be appointed by Order in Council, and different days may be appointed for different purposes and provisions of this Act:

Provided that the day appointed for the transfer of the powers of the Minister of Pensions shall not be earlier than one year after the termination of the present war.

(2) This Act shall extend to Scotland only.

(3) The enactments mentioned in the Second Schedule to this Act are hereby repealed to the extent specified in the third column of that schedule.

(4) In this Act the expression "Government department" includes the Scottish Insurance Commissioners, the Highlands and Islands (Medical Service) Board, and any other public department, and any Minister of the Crown acting as the head of a Government department. The expression "law agent" has the same meaning as in the *Law Agents (Scotland) Act, 1873*.

FIRST SCHEDULE.—TRANSITORY PROVISIONS.

1. In the construction and for the purposes of any Act of Parliament, judgement, decree, order, award, deed, contract, regulation, by-law, or other document passed or made before the transfer to or from the Board from or to any other Government department of any powers or duties by or under this Act, but so far only as may be necessary for the purpose of such transfer, the name of the Board or of the Government department shall be substituted for the name of the other Government department or of the Board, as the case may be.

2. Where anything has been commenced by or under the authority of any other Government department or the Board before the transfer to the Board or another Government department of any powers or duties by or under this Act, and such thing is in relation to the powers or duties so transferred, such thing may be carried on and completed by or under the authority of the Board or the other Government department, as the case may be.

3. Where at the time of the transfer of any powers or duties by or under this Act any legal proceeding is pending to which any Government department or the Board is a party, and such proceeding has reference to the powers and duties transferred by or under this Act, the Board or the other Government department shall be substituted in such proceeding for the other Government department or the Board, as the case may be, and such proceeding shall not abate by reason of the substitution.

SECOND SCHEDULE: REPEALS.

Session and Chapter.	Short Title.	Extent of Repeal.
8 & 9 Vict. c. 83.	The Poor Law (Scotland) Act, 1845	Section four, so far as not already repealed.
57 & 58 Vict. c. 58.	The Local Government (Scotland) Act, 1891.	Sections four, five and six.
1 & 2 Geo. 5 c. 55.	The National Insurance Act, 1911.	Paragraph (b) of, and the proviso to, subsection (2) of section sixteen, subsections (1), (2), (3) and (4) of section fifty-seven and section fifty-eight, so far as applying to Scotland. Subsection (1) of section eighty, from "there shall be constituted" to "the purpose aforesaid."

MEDICINE IN IRELAND AND THE MINISTRY OF HEALTH.

A DEPUTATION representing various medical bodies was received last week by the Chief Secretary for Ireland in order that they might lay before him the views of the medical profession in Ireland on the proposal to establish a Ministry of Health in that country. The deputation consisted of the following:

Dr. Joseph O'Carroll (President), Dr. R. J. Rowlette, and Dr. T. Percy C. Kirkpatrick (Registrar), Royal College of Physicians of Ireland; Mr. J. B. Storey (President) and Mr. R. Dancer Purefoy, Royal College of Surgeons in Ireland; Sir John W. Moore (President) and Dr. Purefoy, Royal Academy of Medicine in Ireland; Dr. J. S. Darling and Dr. T. Hennessy, British Medical Association in Ireland; Dr. R. J. Johnstone and Dr. J. Power, Irish Medical Committee; Dr. Edward Magennis and Dr. H. W. Mason, Apothecaries' Hall of Ireland; Dr. George Nesbitt and Dr. Marshall Day, Irish Medical Association; Dr. M. Nolan and Dr. R. R. Leeper, Medico-Psychological Association of Great Britain and Ireland; Mr. G. H. P. Murray and Mr. D. L. Rogers, Irish Branch of the British Dental Association.

Dr. Joseph O'Carroll presented a memorandum setting out the general views of the deputation, of which the following is a summary:

All medical corporations and organizations in Ireland are agreed as to the need for reform and development of health services in Ireland; but they regret that no opportunity was found to put the views of the medical profession before the Government, and that no organization representative of Irish medical opinion was consulted prior to the drafting of the Irish clauses in the Ministry of Health Bill. All the medical bodies believe that a Ministry of Health solely concerned with health duties should be established in Ireland at once. The Ministry should have full powers, and be such as to command the confidence of the public and of the medical profession. The Local Government Board for Ireland is an unsuitable body to undertake the duties of a Ministry of Health, and a new Ministry should be set up. The same objections apply to any new Ministry dominated by the Local Government Board. Equal objections would hold against giving extended powers to the Irish Insurance Commission. With the setting up of a Ministry should go hand in hand a thorough reform of the entire medical services of the country, which should all be under the control of one Ministry. There should be whole-time medical officers of health and school inspectors. Medical relief now given under the Poor Laws should be separated from Poor Law administration, and wage earners should contribute towards their medical treatment. It is suggested that the Ministry should consist of a Minister responsible to Parliament, and a Council with full powers to control policy. The Council should consist of three groups of four members each: (1) representing the County Councils; (2) medical members elected by the medical profession; (3) members appointed by the Government, including a medical practitioner and a dentist. This would be a body with real knowledge which would command confidence. Lastly, it is laid down that ample provision should be made for medical research, for which there is at present almost no provision in Ireland.

Dr. R. J. Johnstone, Dr. M. Nolan, and Dr. Hennessy laid stress on the importance of having in the Ministry a consultative council conversant with the medical needs of the country, and especially of the general practitioner, the administration of the lunacy laws and the Poor Law medical service. The Chief Secretary (Mr. Ian Macpherson) in his reply, reminded the deputation that the object of the present bill was merely to co-ordinate the medical services under the control of one Minister, who would then be in a position to introduce legislation for the reform of those services. He deprecated the strictures on the health administration of the Irish Local Government Board. In conclusion, he stated that if the deputation could gain the unanimous support of the public and the medical profession for any scheme of health reform, he might then be prepared, in consultation with his Council, to consider such a scheme, and, if approved, to bring in legislation to carry it into effect. Mr. J. B. Storey thanked the Chief Secretary for receiving the deputation, which then withdrew.

LOCAL MEDICAL AND PANEL COMMITTEES.

COUNTY OF LONDON.

National Insurance Defence Trust.—At the meeting of the London Panel Committee on March 25th a discussion took place on the proposed establishment of the National Insurance Defence Trust, inaugurated by the British Medical Association (see SUPPLEMENT, March 22nd, 1919, p. 45). A recommendation was proposed, affirming that the Panel Committee desired to act in this matter in

conformity with the advice of the Association of Panel Committees, but expressing to the Executive Committee of that body its view that it was desirable that Panel Committees should accept the invitation of the Insurance Acts Committee to give the required undertaking of support to the fund. Dr. J. A. Angus, vice-chairman of the Committee, protested against support being given to an organization which was prevented by its charter from becoming a trade union; but the recommendation expressing the view that the invitation of the Insurance Acts Committee be accepted was carried by a large majority.

Association Notices.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, April 16th, in the Council Room, 429, Strand, London, W.C.2.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

March 13th, 1919.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Overseas Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting. Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

All concerned are reminded that nominations of candidates for election as members of Council by Home Branches or groups require to be forwarded to reach the Acting Financial Secretary and Business Manager not later than May 17th. Nominations may be either by a Division or by any three members of a Branch. Members and Divisions can obtain copies of the appropriate nomination form on application to the office. The nominations will be published in the SUPPLEMENT of May 24th. Where contests occur, election will be by voting papers sent direct by post from the Head Office to each member.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Commanders: G. Ley to the *Indomitable*, R. Thomson to the *Catmaroon*, C. J. O'Connell to the *Cyclops*, K. D. Bell to the *Victory* for Physical Training School, Portsmouth, C. K. Bushe to the *Crescent*, additional. Surgeon Lieutenant Commanders: C. Ross to the *Queen Elizabeth*, M. F. Caldwell to the *Crickler*, J. S. Orwin to the *Victory* for Royal Naval Barracks, Portsmouth. Surgeon Lieutenant O. J. M. Corrigan to the *Holly*, Surgeon Lieutenants (temporary): A. S. Green to the *Warspite*, R. H. Clarke to the *Cleopatra*, H. V. Edwards to the *Vindictive*, A. J. MacDiamid to H.M. Dockyard, Chatham, B. A. Henderson to the *Tekin*, C. P. G. Wakeley to the *Garth Castle*, J. P. S. Walker to the *Queen Elizabeth*, F. B. Gilhiespy to Chatham Hospital, H. S. Libby to the Royal Marine Division, G. H. Ward to the *King George*, N. Macleod to the *Princess Royal*, A. Symons to the *Eryn*, R. St. L. Brockman to the *Victory* for Royal Naval Barracks, Portsmouth, C. McDonald to the *Eaglet*, J. H. Sheldon to the *Lupin*.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Lieutenant F. W. Willway to the *Froid* for War College, Devonport.

ARMY MEDICAL SERVICE.

Colonel C. J. MacDonald, C.M.G., half-pay list, is placed on retired pay.

To be temporary Colonels: Temporary Lieut.-Colonel C. M. Wenyon, C.M.G., Lieut.-Colonel S. G. Barling, R.A.M.C.(T.F.).

ROYAL ARMY MEDICAL CORPS.

Lieut. Colonel F. W. Hardy retires on retired pay on account of ill health contracted on active service.

Temporary Lieut.-Colonel R. J. Morris, late Surgeon-Major 4th Royal Lancashire Rifles, T.F., relinquishes his temporary commission, and retains the rank of Lieut.-Colonel.

Captain (acting Major) O. B. Pratt to be placed temporarily on the half-pay list on account of ill health.

The following relinquish the acting rank of Major:—Captains: W. W. MacNaught, M.C., V. T. Carruthers, W. Hunt, M.C. Temporary Captains: J. H. Porter, M.C., A. Richmond, M.C., H. H. Warren, H. R. Grellet, W. Mason, A. C. T. Woodward, W. S. Danks, H. G. Willis, D.S.O., C. C. Irvine, M.C., W. S. Stevenson, W. K. A. Richards, M.C., N. B. Stewart, H. R. Davies, J. M. Moyes, V. F. Southall, R. Felton, M.C., W. Crabtree, J. F. Robertson. On reposting: Captains H. A. Stanley, M.C., A. R. Wright, D.S.O., December 11th, 1918 (substituted for notification in the *London Gazette*, March 6th, 1919), T. H. Balfour, M.C., R. H. Leigh, M.C., A. C. Jobb. Temporary Captains: J. G. Heath, W. H. Stott, P. B. Young, M.C., R. C. Harkness, N. C. Lake, A. L. Lockwood, D.S.O., M.C., A. R. Esler, A. Ryland, R. Tindall, M.C., J. A. Conway, D.S.O., M.C., H. R. Evans, P. L. Blaber, D. E. Crosbie, E. B. Walker, W. E. Gemmell, S. G. Luker, M. J. Molltram, A. Gray, V. M. Rich, I. S. Wilson, M.C., C. H. Haddow, M.C., J. G. Heath, W. H. Stott.

To be acting Majors:—Captains W. J. Knight, M.C., T. A. Weston. Temporary Captains: R. A. Parsons (from August 14th to September 15th, 1918, inclusive), W. Deane, D. C. Craig, M.C., C. H. Lloyd, M.C., B. W. Wiberley, M.C., A. C. B. McMurtrie, M.C., G. C. Linder, C. A. R. McCay, G. D. Eccles, M.C., D. Green, J. P. Jones, M.C., C. E. Meryon, E. S. Marshall, M.C., R. S. Armour, O. C. Link, H. F. Mullan, R. B. Heygate, E. W. Sheaf, F. H. Young, J. D. MacEwen, H. McIntyre (whilst commanding troops on a hospital ship). Temporary Lieutenant W. F. Tisdale (from October 18th to December 10th, 1918, inclusive). Whilst specially employed: Captains I. D. Dickson, M.C., S. G. Walker. Temporary Captains: C. W. G. Bryan, M.C., J. McF. Grier, G. B. MacGregor, M.C., Lieutenant (temporary Captain) G. G. Drummond (from December 9th, 1918, to January 28th, 1919).

The following officers are placed on the half-pay list on account of ill health contracted on active service: Captain (acting Major) A. M. McCutcheon, Captain F. T. Turner, M.C.

Temporary Major H. F. Woolfenden relinquishes the acting rank of Lieut.-Colonel on reposting.

Captain (acting Major) H. Burrows to be temporary Lieut.-Colonel.

Captain B. H. C. Lea-Wilson is seconded for service with the Egyptian army.

Temporary Captain F. Fraser to be temporary Lieut.-Colonel.

Late temporary Captains granted the rank of Captain: H. V. Drew, W. Elwood.

The notification in the *London Gazette* of February 22nd regarding Captain W. W. MacNaught, M.C., is cancelled.

Temporary Lieutenants to be temporary Captains: H. W. Bennett, R. H. Peters, J. Rickards, M.C., W. D. Ross, T. M. O'Donnell, G. O. Grain, A. B. Cooke, F. E. Webb, S. E. Murray, W. H. Ross, T. W. Shaw, C. P. Chambers, J. C. Curless, E. Goffon, G. Maclean, T. G. Rothwell, W. S. Perrin, R. L. Hughes, R. H. Martin, R. Harrington, S. Broderick, H. J. Knox, H. N. Crossley, P. B. Whittington.

Temporary honorary Lieutenant C. R. Bird to be temporary honorary Captain.

A. O. Raymond, late temporary honorary Lieutenant, is granted the honorary rank of Lieutenant.

J. McP. Mackinnon to be temporary Captain.

The following officers relinquish their commissions: Temporary Lieut.-Colonels: C. G. Douglas (and retains the rank of Lieut.-Colonel), J. Golt. Temporary Majors and retain the rank of Major: P. Turner, F. R. Seymour, G. Taylor, W. J. Orr (on ceasing to be employed with 1st Birmingham War Hospital). Temporary Captain W. Angus, and is granted the rank of Lieut.-Colonel. Temporary Captains and are granted the rank of Major: N. B. Stewart, A. M. Caverhill, C. Sullivan, J. D. Duncan, L. R. Broster, W. R. Wilson, W. M. Buchanan, S. W. Woodlett, J. H. Thorley, M.C., H. Pringle, E. E. Herga, M.C., M. C. Gardner, M.C., C. E. Sandell. Temporary Captains, on account of ill health contracted on active service, and retain the rank of Captain: C. Bluet, E. Dillon, W. Paul. Temporary Captains, on account of ill health caused by wounds: J. T. Smeall, M.C., J. Ogilvie. Temporary Captains, on account of ill health, and retain the rank of Captain: W. J. Middleton, G. Stewart, P. W. Stewart, J. Wells, J. B. Cooke, A. M. Mitchell. Temporary Captains, and retain the rank of Captain: C. E. Wise, W. H. Johnston, A. C. Greenwood, G. G. Timpson, J. Laseelles, M. P. Scanlon, G. H. Jones, F. S. Hawks, H. P. Aubrey, E. Williams, W. S. Melville, J. Dawson, J. Langwill, W. J. Macnab, E. L. Z. Fickling, F. H. Fuller, C. H. A. Alderton, T. H. Whittington, G. B. King, S. G. McDonald, P. J. Watkin, M.C., C. V. Cornish, J. Henderson, A. G. M. Middleton, H. H. Southam, D. Higgins, A. M. Watts, D. J. Smith, E. G. D. Benson, J. Wyllie, W. P. H. Munden, J. Donaldson, W. Arnott, I. O'Keefe, P. O. Clarke, R. A. Smith, G. H. U. Corbett, E. Maynard, L. W. Rudin, C. W. Hutt, H. McC. Fleming, P. Hudson, J. A. B.

Hammond, W. J. B., Brown, J. R., Rigg, J. F., Gallaher, M., Ffoulkes, T., Gardner, E. C., Sparrow, E. C., Williams, J. Brown, D., Purdie, W., Griffith, F. S., Prior, A. G., Mowat, E. D., W. Reid, S., Gooding, E., Coleman, R. P., Nash, H. L. G., Hughes, D.S.O., W. Amsden, H. E., Moore, G. H., Joseph, J. M. S., Wood, K., Pretty, E., D. Smith, W., Harmsen, J. C., Dunn, D.S.O., M.C., G. Y. Richardson, A., Davies, W., Kelley-Patterson, R., Donald, M.C., T. McL. Galloway, L. H. I. Bell, F. G. Bergin, A. W. C. Lindsay, A. C. Dixon, D. Clow, W. P. Cornwall, M.C., R. Fell, F. M. S. Hulke, W. D. Chambers, W. A. Ferguson, F. E. Chapman, T. W. David, F. W. Twort, J. Tait, B. R. Vickers, R. V. Howell, C. E. Tangye, R. C. Allen, R. C. Leonard, A. D. Campbell, C. F. Harford, J. B. Orr, D.S.O., M.C., R. Robertson, G. C. Birt, J. M. Barkley, A. Kerr, L. U. Geraty, M.C., G. B. N. Flanagan, J. T. Kitchen, H. S. Thomas, A. Naismith, H. C. Addison, D. A. Chamberlain, J. Butler, M. H. Fleming, L. Bensted, D. A. Crow, J. H. D. Webster, J. B. Rae, A. H. G. Burton, H. D. Woodroffe, A. W. M. Sutherland, A. E. Burroughs, J. A. Thomson, B. R. Billings, M. Donaldson, J. A. Jamieson, R. E. Ingram-Johnson, J. I. Arnold, W. E. Passmore, T. J. Buckley, J. E. Judson, J. Carrick, A. Graham-Stewart, A. W. Baker, L. L. Phillips, R. Craig, P. Hall-Smith, H. St. J. Randall, K. C. Middlemiss, R. H. Urwick, J. Laing, D. Walker, D. Brough, E. G. Pringle, T. F. O'Kell, B. S. Taylor, F. L. Pelly, J. A. MacLaren, S. H. Sweet, R. Nicoll, J. A. Liley, A. H. Turner, E. C. White, J. H. H. Pearson, S. S. Rendall, A. Muir, R. M. Menzies, A. T. Wyard, W. D. Ross, J. T. Hefferman, A. Bloom, C. O'Brien, M.C., A. J. W. Compton, A. P. Nicolle, T. F. Moran, R. J. P. Waugh, E. S. Holloway, G. L. Gall, J. B. Lester, J. E. Spence. Temporary Captain R. P. Nash. Temporary honorary Captains and retain the honorary rank of Captain: F. W. Hamilton, on ceasing to serve with No. 2 British Red Cross Hospital; H. de L. Crawford, on ceasing to serve with the Irish Counties War Hospital. Temporary Lieutenants and retain the rank of Lieutenant: P. C. Phillips, A. L. Aymer, N. Lavers, H. S. Lister, D. E. Young, J. V. Rees, J. A. B. Hicks, J. Grimson, R. Tilbury, H. E. Thompson, W. A. S. Magrath, F. H. Boone, W. G. McCowan, C. O. Miller, S. Bardel, H. M. Raphael, W. E. Martin, T. G. Playford, M.C., R. E. Macgregor, M.C., E. D. Kinsey, N. McCullough, R. Walker. Temporary honorary Lieutenant J. Todesco.

ROYAL AIR FORCE.

MEDICAL BRANCH.

G. Dreyer (temporary honorary Lieutenant-Colonel R.A.M.C.) is granted a temporary commission as honorary Lieutenant-Colonel with seniority from April 1st, 1918.

Major F. H. Stephens (Staff Surgeon R.N.) relinquishes his commission on ceasing to be employed.

Transferred to unemployed list: Captains D. H. Fraser, M.C., A. MacLennan (R.A.M.C.T.F.), W. A. Shupson, E. P. Carmody, H. R. Carter, (acting Major) L. Hooper, J. P. J. Hart, J. P. Walker, M.B.E., B. E. Annot, F. Roberts, (honorary Lieut.-Colonel) J. MacLaughlin, A. A. Wilkinson, (acting Major) A. A. Bisset, E. W. Jones, E. P. Chennells, T. E. Regan, L. C. Rivett, A. B. Bradford, N. F. Lloyd, A. H. L. Thomas, H. P. Hesham. Lieutenants G. D. M. Beaton, P. M. Roberts, L. C. W. Ballis, J. J. Savage, W. A. Cooper, H. McP. Cargin, R. Malcolm, K. Batten, P. Ashton, C. A. E. Cook, G. A. Roper, A. Read, J. D. George, H. T. Rymner, J. S. Harbison. Lieutenant J. A. Johnson to be Captain.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain C. M. Page, D.S.O., relinquishes the acting rank of Lieut.-Colonel on reposting.

Captains relinquish the acting rank of Major: R. A. Greenwood, M.C., C. R. McIntosh, S. K. Young, A. W. Russell, M.C., J. J. McI. Shaw. (Brevet Major) R. C. Ozanne.

Captains relinquish the acting rank of Major on reposting: A. J. Beveridge, M.C., A. J. Gibson, D.S.O., M. W. Paterson, M.C., G. Marshall.

Captains to be acting Majors: F. H. Goss, M.C., J. W. Malcolm, M.C., J. de M. Kneebone, W. M. Dickson, G. M. Roberts (from August 14th to November 16th, 1918), G. S. Mather, J. F. W. Meehan, J. B. Hanna.

Captains W. A. N. Fox and C. D. Pullan relinquish their commissions on account of ill health, and retain the rank of Captain.

Captains R. L. Impey, M.C., and N. L. Lochrane relinquish their commissions on account of ill health contracted on active service, and retain the rank of Captain.

Lieutenants to be Captains: T. L. Crawhall, D. J. A. Lewis, H. E. Bamber.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Colonel C. A. Peters, D.S.O., relinquishes his appointment as Assistant Director of Medical Services.

Temporary Major R. J. Gardiner, M.C., to be acting Lieut.-Colonel and to command No. 2 Canadian Field Ambulance.

Temporary Captain R. D. MacKenzie, M.C., to be Deputy Assistant Director of Medical Services.

Temporary Captain D. J. Millar to be acting Major while employed at a Canadian General Hospital.

Temporary Captain H. C. Hall relinquishes his appointment and the acting rank of Major.

Temporary Captain I. W. Dickson retires in the British Isles.

SOUTH AFRICAN MEDICAL CORPS.

Temporary Captain A. F. de Waal relinquishes his commission.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

The undermentioned Colonels are granted precedence from May 31st, 1916: A. W. Sheen, C.B.E., W. Ranson, D.S.O., H. E. B. Bruce-Porlier, K.C.B.E., C.M.G., A. M. Connell, A. D. Sharp, C.B., C.M.G., E. J. R. Kvatt, D.S.O. (substituted for announcement in the *London Gazette*, February 19th, 1919).

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel C. R. Laurie relinquishes his commission on account of ill health, March 4th, 1919, and retains the rank of Lieutenant-Colonel (substituted for notification in the *London Gazette*, March 3rd, 1919).

Majors to be Lieutenant-Colonels, September 1st, 1918, with precedence from June 1st, 1916, and seniority next below Lieutenant-Colonel G. A. Troup: H. C. Lamport, J. T. Thomas, W. B. Mackay, C.M.G., J. B. Berry, H. C. Donald (acting Lieut.-Colonel), W. Sinclair, J. H. G. Whiteford, D. Durran, S. Nesfield, C. R. Laurie, R. Stirling, T. Forrest (Brevet Lieut.-Colonel), T. Holt, J. R. Harper (acting Lieut.-Colonel), W. M. Gabriel (Brevet Lieut.-Colonel), A. Butler, J. S. Y. Rogers, D.S.O., P. Puget, A. Ducat (acting Lieut.-Colonel).

A. H. Vernon, E. G. Peck, D.S.O., W. L. Bentley, J. H. Harris, J. P. S. Ward, A. C. Miller, J. L. Loudon, R. Emmett, H. L. de Lege, J. Howard-Jones, A. P. Swanson (acting Lieut.-Colonel), H. Jones (Brevet Lieut.-Colonel), G. C. Taylor, O.B.E., J. W. Nicholson, M. A. Cooke, J. B. Jamieson, C. A. Goulet, J. Allison.

The following officers relinquish their acting rank on ceasing to be specially employed: Majors (acting Lieut.-Colonels): W. Archibald, H. Fullerton, D.S.O., F. W. Johnson, J. W. Leitch, D.S.O., E. H. Cox, D.S.O., R. Coffey, D.S.O. Captains (acting Lieut.-Colonels): A. Ramsbottom, J. MacMillan, D.S.O., M.C., A. T. Falwasser, D.S.O., D. G. Rice-Oxley, M.C., P. Moxey, W. L. Robertson, R. Burgess, D.S.O., M.C. Captains (acting Majors): W. Redpath, A. Radford, M.C., H. F. Everett, G. B. Fleming, J. McI. Macfarlane, F. Hauxwell, O. K. Wright, W. P. Ferguson, C. E. K. Herapath, W. A. Valentine, G. W. Deeping, H. G. Magrath, K. E. T. Tatlow, J. Arthur, A. J. Blaxland, C. J. Fox, R. M. Wilson, A. L. Yates, M.C., F. H. C. Watson, G. W. Shore.

Majors J. W. Keay and R. C. Rodgers are restored to the establishment.

Captain J. W. G. H. Riddell, M.C., to be Deputy Assistant Director of Medical Services, and to be acting Major whilst so employed.

Captain C. B. Stewart relinquishes his commission on account of ill health and retains the rank of Captain.

Captain (acting Lieut.-Colonel) G. B. Fleming reverts to the acting rank of Major.

Captain (acting Major) J. D. Wells, O.B.E., relinquishes his acting rank on vacating the appointment of Deputy Assistant-Director of Medical Services.

Captains to be Majors: Captain (acting Major) A. L. S. Tuke, M.C., Captain A. Innes.

Captains to be acting Majors whilst specially employed: J. Ramsay, O.B.E., F. G. Prestwick, W. Goldie, M.C., D. C. Bremner, F. W. Burn.

Captain J. E. Pearce relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

Captains (acting Majors) J. A. Davies, G. E. G. Mackay, E. Knight, and J. G. Hill to be acting Lieutenant-Colonels whilst specially employed.

Captains A. C. Devereux and W. A. Slater relinquish their commissions on account of ill health contracted on active service, and retain the rank of Captain.

1st London Sanitary Company.—Captain J. Teare to be Major. Captain D. J. Peebles relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

4th London General Hospital.—Captain I. G. Back is restored to the establishment.

4th Battalion, Northern General Hospital.—Captain H. J. Smith, M.C., is restored to the establishment.

2nd Northern General Hospital.—Major J. K. Jamieson to be acting Lieutenant-Colonel whilst specially employed, and is seconded.

4th Northern General Hospital.—Captain (acting Major) F. E. Withers relinquishes his acting rank on ceasing to be specially employed, and remains seconded.

1st Scottish General Hospital.—Captain (acting Major) H. E. Smith relinquishes his acting rank on ceasing to be specially employed.

2nd Scottish General Hospital.—Captain W. J. Stuart is restored to the establishment.

2nd Southern General Hospital.—Captains (acting Majors) C. A. Moore and A. G. T. Fisher, M.C., relinquish their acting rank on ceasing to be specially employed and remain seconded.

3rd Southern General Hospital.—Captain T. B. Marshall is restored to the establishment.

2nd Western General Hospital.—Captain J. P. Buckley is restored to the establishment.

APPOINTMENTS.

Fox, Harold C., M.B., Ch.B. Edin., Senior House-Surgeon at the Blackburn and East Lancashire Royal Infirmary.

McNabb, L., M.D. Durh., Visiting Assistant Medical Officer, Harton Institution, South Shields Union.

Riddell, Brownlow, M.D., Visiting Surgeon to the Glasgow Eye Infirmary.

Thomson, F. G., M.A. Cantab., M.D., M.R.C.P. Lond., Physician to the Royal United Hospital, Bath.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

PHILLIPS.—On 28th March, at Newstead, Waterloo Park, Liverpool, the wife of Lionel L. Phillips, M.R.C.S. (late Capt. R.A.M.C.), formerly of Redruth, of a son.

DEATH.

CUNLIFFE.—On March 31st, 1919, at the Officers' Hospital, Windermere, Ernest Nicholson Cunliffe of Manchester. Major R.A.M.C.(T.F.), M.D., B.S. Lond., M.D. Viet., M.R.C.P. Lond., aged 47 years.

DIARY FOR THE WEEK.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday, 5 p.m., Thursday, 6 p.m., Luncheon Lectures by Sir Humphry D. Rolleston, K.C.B., "Cerebro-spinal Fever."

ROYAL SOCIETY OF MEDICINE.—Reception to the British Medical Association, Wednesday, Section of Psychiatry: Tuesday, 5.30 p.m., Dr. William Brown: A Comparison of Early Cases of "Shell Shock" in the Field with those at the Base. Clinical Section: Friday, 8 p.m., Cases of Unusual or Rare Conditions.

DIARY OF THE ASSOCIATION.

Date. Meetings to be Held.

APRIL.

8th to 11th. Clinical Meeting, Imperial College of Science and Technology, South Kensington, S.W.

9 Wed. London: Journal Committee, 2 p.m.

London: Finance Committee, 2.45 p.m.

16 Wed. London: Council Meeting.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 12TH, 1919.

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THE ORGANIZATION OF THE PROFESSION.

CORRESPONDENCE.

SIR,—An answer is due from me to the critics of my speech at Newcastle.

Dr. Lyth still has doubt as to the ability of the Association, not being a trade union, to take action which he groups generically as in "restraint of trade." I can only repeat that the Association has on many occasions been advised by eminent legal authorities, and very strongly by Messrs. Gore Browne and Slessor, that the efforts of the Association to induce members of the profession not to enter into contracts of various kinds or to determine contracts are strictly lawful, and the two counsel last named have specifically advised that neither the British Medical Association nor a trade union have any statutory rights to dictate the terms upon which employment shall be given or accepted, but that both, as private citizens, have the rights of private citizens, and are justified in holding and expressing opinions as to the interests of the body to which they belong. They have also advised that it is not unlawful for a number of doctors acting upon a common principle to refuse to meet another in consultation, and that if they act in good faith in what they consider to be the interests of their profession, no action would lie. I am afraid I cannot agree with Dr. Lyth that a medical trade union would find it any easier than any other organization to steer clear of an accusation of "malice." "People who play bowls must expect rubbers," and any organization in carrying out what it considers to be its duty must take its risks.

I am sorry if I understated the number of practitioners who followed the ill-starred advice of the Medico-Political Union in regard to the treatment of disabled soldiers. Of course I accept Dr. Lyth's statement that in some areas practitioners did carry out that advice. It is no less true, however, that the Union gave it in the teeth of the resolution of the Conference of Panel Committees; that practitioners as a whole declined to consider it; and that even members of the Union who followed it soon saw reason to drop it.

Dr. G. H. Jones evidently does not read his JOURNAL or he would know how much attention has been given by the Association to the rural insurance practitioner, as a consequence of which he has already obtained two grants, and his position is, I hope, well on the way to being placed on a really permanent and satisfactory footing.

I refer Dr. Jones to my explanation at Glasgow of the action of the Association in regard to the reduction of notification fees, which appeared in the last number of the SUPPLEMENT. He will find from this that his statement that the Association "appeared to acquiesce (in the reduction) quite passively" is, to put it moderately, a misstatement of the case. I do not understand his suggestion that the Scottish rural practitioner is allowed mileage while the English practitioner is not.

The only decline of membership in the Association in recent years was a sudden reaction after the Insurance Act fight, which everybody expected, and a drop when the Association raised its subscription. But the membership

is rapidly advancing. In 1917 on balance the Association gained 1,889 members; in the first quarter of this year it has gained on balance 747 members; and its present membership is 22,812.

I leave others to deal with Dr. Jones's fancy portrait of the Association as a body "captured . . . by the consultant class and the politician medico, . . . who are far too superior to study the needs and welfare of the general practitioner." There may have been a time when the executive of the Association was dominated by the classes to which he refers, but it has not been within my memory. I can only say that at the present time all the executive bodies of the Association are to a very large extent manned by working general practitioners.—I am, etc.,

ALFRED COX,
Medical Secretary.

A DISCLAIMER.

SIR,—My attention has been drawn to the report, in your issue of April 5th, of the Glasgow meeting addressed by Dr. Cox on "The Organization of the Profession." Remarks are there quoted as having been made during the discussion by "Dr. Bennett (Glasgow)." As there are only two members of the profession bearing that surname in this city, I claim, in fairness to myself, an opportunity to point out that I was not the author of the statements and that I do not wish to be associated with the sentiments expressed.—I am, etc.,

April 5th.

CHARLES BENNETT, M.B.

FEE FOR NOTIFICATION OF INFECTIOUS DISEASES.

As has already been reported, the Association, on February 24th, asked Dr. Addison to receive a deputation on this question. We are authorized to state that he has promised to receive it on the earliest possible date after Easter.

Association Notices.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, April 16th, in the Council Room, 429, Strand, London, W.C. 2., at 11 a.m.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

March 13th, 1919.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—
Surgeon Lieut. Commander: R. H. W. W. Bidolph to the *Argus*, G. B. Scott, D.S.O. to Plymouth Hospital. Surgeon Lieutenants: A. W. Cocking to the *Thistle*, A. R. Price to the *Cardus*, R. M. R. Thursfield to M 25 additional. Surgeon Lieutenants (temporary): S. Acheson to the *Dido*, D. P. Brown to the *Pekin*, R. S. Collings to the *Derby*, W. P. Elliott to the *Strad*, R. Buddle to M. 25 additional, H. C. Apperly to the *Argonaut*, A. M. McTilviray to H.S. *Berbee*, F. P. N. Parsons to H.S. *St. Margaret of Scotland*.

ARMY MEDICAL SERVICE.

Temporary Colonels relinquish their temporary commissions on reposting: J. M. Cowan (Major R.A.M.C.T.F.), W. E. Hume, C.M.G. (Lieutenant Colonel R.A.M.C.T.F.), F. D. Boyd, C.M.G. (Major R.A.M.C.T.F.).

Temporary Colonel T. R. Elliott, F.R.S., relinquishes his commission and retains the rank of Colonel.

To be temporary Colonels: Temporary Majors C. H. Miller, July 8th, 1918 (substituted for notification in the *London Gazette*, August 1st, 1918), W. P. S. Branson, Captain (acting Major) H. Burrows, R.A.M.C.T.F., January 15th, 1919 (substituted for notification in the *London Gazette*, March 25th, 1919), Temporary Captain F. Fraser, January 15th, 1919 (substituted for notification in the *London Gazette*, March 24th, 1919).
Captain (acting Major) H. Burrows, R.A.M.C.T.F., to be temporary Colonel, January 15th, 1919 (substituted for notification in the *London Gazette*, March 25th, 1919).

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel W. R. P. Goodwin, D.S.O., to be acting Lieutenant-Colonel whilst specially employed.

Temporary Lieut.-Colonel C. J. Trimble, C.B., C.M.G. (Lieut.-Colonel and honorary Colonel T.F.Res.), relinquishes his temporary commission March 8th, 1919, and retains the rank of Lieutenant-Colonel (substituted for notification in the *London Gazette*, March 24th, 1919).

Temporary Lieut.-Colonel T. E. Sandall, C.M.G. (Lieut.-Colonel Lincoln Regiment, T.F.), relinquishes his temporary commission.

Major M. C. Wetherell retires, receiving a gratuity, on account of ill health contracted on active service, March 1st, 1919, and is granted the rank of Lieutenant-Colonel (substituted for the notification in the *London Gazette*, February 28th, 1919).

Major Henry Rogers, D.S.O., relinquishes the temporary rank of Lieutenant-Colonel on reposting.

Temporary Majors (acting Lieut.-Colonels) relinquish their temporary and acting rank on reposting: C. V. Hulstede, D.S.O. (Major Shropshire R.H.A., T.F.), L. C. Bruce, M.C. (Captain R.A.M.C.T.F.).

Majors to be acting Lieut.-Colonels: C. M. Drew, whilst in command of a medical unit; R. V. Cowey, D.S.O., whilst specially employed.

The following relinquish the acting rank of Major on reposting: Captain P. J. Ryan, M.C.; temporary Captains S. E. Martin, J. Greene, D.S.O., M.C.

To be acting Majors whilst specially employed: Captain J. S. McCombe, D.S.O.; temporary Captains A. H. M. Robertson, P. L. Watkin-Williams, D.S.O., J. P. Lowson.

The notification in the *London Gazette* of January 14th, 1919, regarding temporary Captain H. G. Rice is cancelled.

J. K. Watson, late temporary Captain, is granted the rank of Captain.

Lieutenant (temporary Captain) J. W. G. H. Riddell, M.C., to be Captain.

Temporary Lieutenants to be temporary Captains: J. F. Paul, J. F. Jennings, A. W. Hare.

The following officers relinquish their commissions: Temporary Lieut.-Colonel G. A. Wright, on account of ill health, and retains the rank of Lieutenant-Colonel. Temporary Majors J. B. Stephens (and retains the rank of Major), J. N. Sergeant (on ceasing to be employed at the Great Ballard Hospital). Temporary Major N. H. Munnery, and is granted the rank of Lieutenant-Colonel. Temporary Captains and granted the rank of Major: R. Tindall, M.C., E. G. Stanley, D. E. Crosbie, M.C., E. L. Dobson, A. E. Sellar, J. A. Conway, D.S.O., M.C., M. J. Mottram, M. W. Littlewood, C. A. Brisco, M.C., J. D. Cooke, H. G. Kilner, C. C. Forsyth. Temporary Captains (on account of ill health contracted on active service, and retain the rank of Captain): J. W. Innes, O. Shields, G. McGregor, A. R. Snowden, H. G. Wiltshire.

Temporary Captains (on account of ill health, and retain the rank of Captain): E. E. Cassidy, J. S. Part, H. S. McLellan, J. T. Martin. Temporary Captains relinquish their commissions and retain the rank of Captain: H. M. Stephenson, M.C., P. A. Doyle, S. Southall, J. E. Sandilands, M.C., W. J. I. Dwyer, M. Turnbull, H. Spinks, A. Scott, H. H. Stones, I. C. Edwards, H. G. White, J. A. Valentine, H. T. Thomson, I. J. Williams, C. Aldis, V. H. Blake, T. B. Davies, H. P. Crampton, W. H. Butler, A. J. W. Cunningham, P. G. Foulkes, C. G. Colyer, J. C. Scott, O. E. Ward, J. E. Frere, W. Turner, L. D. Stamp, P. Talbot, M. White, J. C. Walker, M. C. Stark, F. P. Young, J. E. Scott, D. B. Davidson, A. E. M. Woolf, F. D. Scott, H. Good, R. Cox, G. C. Adey, N. R. Ussher, G. H. Shaw, S. H. Scott, L. Bathurst, C. R. Wilkins, A. L. White, F. Stevenson, G. Vinc, A. F. S. Sladden, C. L. Forde, H. J. Van Praagh, H. F. Woods, L. L. Fyfe, W. J. Smyth, J. Dunbar, H. P. Bellamy, E. B. Collings, A. G. Wilkinson, M. E. Delafield, H. Fulham-Turner, P. Gully, W. W. Banham, C. J. W. Clayton, J. H. Aikman, J. A. Aiken, C. H. T. Hott, G. A. Smythe, G. Wacher, F. M. Harvey, M.C., W. Salisbury, J. F. Bullar, T. A. Fall, S. A. Boyd, F. B. McCarter, M.C., E. J. Storer, W. G. E. Allen, F. F. Stevenson, A. J. Lewis, H. K. Macdonald, J. Brown-Sim, C. King, A. R. Finn, L. S. H. Glanville, J. H. Mason, J. R. McGilgry, L. Levene, C. A. Dottridge, J. R. Murray, M. Eager, W. F. Gibb, W. H. McWalter, R. H. Cox, E. B. Jardine, M.C., F. Hartley, A. C. Mann, M.C., A. B. Howitt, W. P. Jones, W. H. Laslett, E. S. Goodry, R. N. Dunlop, A. G. Ede, K. McK. Duncan, G. I. Cumberlege, A. M. Laurie, G. L. Parsons, T. Drysdale, M. Colie, N. Garrard, A. H. Porter, L. H. Burner, W. A. Elwood, N. E. Sampey, J. B. Cunningham, S. G. Corner, C. E. Clay, F. H. Flack, W. H. Eggar, J. B. Banister, R. Fraser, R. W. Pearson, M.C., J. A. Berlyn, A. Fleming, D. L. Carmichael, W. K. Bell, G. Birch, F. E. L. Phillips, J. E. Payne, J. E. MacFarlane, P. S. Hunter, J. H. Kay, H. E. Batten, R. J. A. Davis, J. K. Willis, A. D. Millington, R. Franklin, A. G. Jenner, B. Graves, M.C., A. Morgan, W. B. Blandy, E. S. Molyneux, H. E. Barrett, E. E. S. J. Galbraith, S. K. Hutton, L. H. Butler, J. M. Taylor, F. A. M. Flegg, A. Mills, F. W. O'Connor, M. MacKenzie, A. J. Turner, B. Robertson, O. J. F. C. Greenidge, F. L. Sessions, C. G. Pugh, J. Lumb, P. M. Reid, T. P. Seymour, T. S. D. Enderby, C. G. Timms, M.C., R. A. Eastmond, C. M. Stallard, J. D. Pearson, J. E. McCartney, H. N. Matthews, E. H. Noyce, C. C. Morgan, E. C. MacKay, T. H. Harker, A. T. Marshall, E. Tate, P. K. Muspratt, D. N. Knox, J. P. Shaw, A. J. May, H. B. Wickham, C. J. Brookes, and J. M. Young, M.C., and W. W. Fyfe, on ceasing to serve with the Home Hospitals Reserve. Temporary Lieutenants and retain the rank of Lieutenant: C. M. Smith, C. Fletcher, R. F. McN. Scott, W. Anderson, R. W. Gilmore, G. Holman. Temporary honorary Lieutenant A. H. Miller, on ceasing to be employed with the Welsh Hospital, Netley, and retains the honorary rank of Lieutenant.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Lieut.-Colonel C. B. Heald, C.B.E., to be Lieutenant-Colonel from B.O.

W. Tyrrell, D.S.O., M.C. (Captain, acting Lieutenant-Colonel R.A.M.C.), is granted a temporary commission as Lieutenant-Colonel (November 22nd, 1918), with seniority from April 1st, 1918.

Captain C. P. A. Hereford to be Major.

Transferred to the unemployed list: Captains T. E. Mulvany, W. L. Scott, A. S. Glegg, acting Major H. Steadman, R. G. Maglione, A. L. Dykes, T. B. Dixon, P. W. McKeng, D. Guthrie, S. W. Fisher, W. F. Jones, A. G. H. Smart. Lieutenants G. A. Simmons, E. L. Bunting.

Captain J. W. Brash (R.A.M.C., S.R.) relinquishes his commission on account of ill health.

The notifications in the *London Gazette* of November 26th, 1918, concerning Captains H. H. Gellert and R. D. Neagle are cancelled.

The initials of Captain J. P. J. Hartly are as now described and not as stated in the *London Gazette* of March 28th.

Granted temporary commissions as Lieutenants: R. H. Parry, R. I. Rhys, J. Kyle.

MEDICAL (ADMINISTRATIVE) BRANCH.

Captain H. R. B. Hull to be acting Major whilst specially employed.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel S. G. Barling is seconded whilst holding a temporary commission in the A.M.S.

Lieut.-Colonel (acting Colonel) T. Fraser, D.S.O., relinquishes his acting rank on vacating the appointment as A.D.M.S.

Major W. F. McAllister-Hewlings to take rank and precedence in his corps and in the army as if his appointment as Major bore date January 7th, 1919.

Captain T. B. Layton, D.S.O., to be acting Major whilst specially employed.

Captain H. A. Sandiford, M.C., to be acting Major whilst specially employed.

The following officers relinquish their acting rank on ceasing to be specially employed: Major (acting Lieut.-Colonel) G. W. Miller. Captains (acting Lieut.-Colonels) J. D. Fiddes, M.C., D. J. Scott, M.C., C. W. Eames, D.S.O., B. Seddon, A. J. Williamson, D.S.O. Captains (acting Majors) C. A. Raison, F. A. Roper, H. Drummond, J. Graham, R. Henry, S. J. C. Holden, A. E. Huxtable, F. S. Jackson, H. J. A. Longmore, W. F. Young, W. F. Mackenzie, F. Clayton, J. H. Blackburn, M.C., C. N. Smith, M.C., W. T. Ritchie, W. H. Morrison, M. S. Double, W. G. McKenzie, A. Campbell, I. C. Marshall.

1st Eastern General Hospital.—Captain S. W. Curl is restored to the establishment.

4th London Field Ambulance.—Captain (acting Lieut.-Colonel) T. B. Layton, D.S.O., relinquishes his acting rank on ceasing to be specially employed.

1st London Sanitary Company.—Lieutenants to be Captains: E. L. Gaunt, W. D. Dick.

2nd London Sanitary Company.—Captain D. H. Burleigh is restored to the establishment. Lieutenant F. Fletcher to be Captain.

2nd Scottish General Hospital.—Major D. J. Graham to be Lieut.-Colonel.

3rd Scottish General Hospital.—Major J. M. Cowan is restored to the establishment.

3rd Southern General Hospital.—Captain G. F. Murrell is restored to the establishment.

VOLUNTEER FORCE.

1st Kent R.A.M.C.(F.).—Temporary Major C. Killick resigns his commission.

Lancashire R.A.M.C.(F.).—Temporary Captain J. Bauchop resigns his commission.

Northumberland R.A.M.C.(F.).—J. P. Philip to be temporary Major.

Sussex R.A.M.C.(F.).—Temporary Lieutenant S. P. Matthews to be temporary Captain, F. J. Nicholls to be temporary Lieutenant.

APPOINTMENTS.

CERTIFYING FACTORY SURGEONS: G. F. V. Leary, M.B., Ch.B., Edin., Castleford District, co. Tyrone; W. G. Rogers, M.B., B.S., Lond., Broughton Astley District, co. Leicester; A. Toulmin, F.R.C.S.E., Preston (East) District, co. Lancaster.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

BAXTER.—On March 31st, 1919, at 17, The Crescent, Plymouth, the wife of Captain C. W. Woolton Baxter, Indian Medical Service, of a daughter.

POLLARD.—On March 28th, at Belmont House, Cumberland Road, Bristol, the wife of John Pollard, M.B., B.Ch., of a daughter.

MARRIAGE.

CRAWSHAW—HOGARTH.—At Trinity Church, Kelso, on April 2nd, 1919, by the Rev. T. Craufurd Kirkwood, Captain George Crawshaw, M.C., R.A.M.C.(F.), fifth son of Dr. B. Crawshaw of Barwood Mount, Ramsbottom, Lancs., to Mary Wilson Scott, elder daughter of the late John Hogarth, Kelso Mills, and of Mrs. Hogarth, Galalaw, Kelso.

DIARY FOR THE WEEK.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8.30 p.m. Clinical Evening.

ROYAL SOCIETY OF MEDICINE.—Special General Meeting of Fellows, Tuesday, 5 p.m. Section of Therapeutics and Pharmacology.

Tuesday, 4.30 p.m. Annual Meeting. Dr. Bossan (Paris): A New Treatment for Pulmonary Tuberculosis. Section of Pathology.

Tuesday, 8.30 p.m. Annual Meeting. Dr. E. H. Kettle: Polynucleosis of the Malignant Epithelial Cell. Dr. J. Burton Cleland: The Conveyance of Human Acute Infective Poliomyelitis to Monkeys, Sheep, a Calf, and a Foal (communicated by Professor C. J. Martin, F.R.S.). Dr. W. E. Bullock and Dr. W. Cramer: Mechanism of Bacterial Infections. Dr. J. McIntosh: Serum Therapy in Gas Gangrene. Mr. S. G. Shattock: Appendicular Contents and Concretion. Demonstration by Dr. J. A. Murray. Section of History of Medicine: Wednesday, 5 p.m.

Dr. Leonard Mark: The Medical Aspects of Montaigne.

DIARY OF THE ASSOCIATION.

Date. Meetings to be Held.

APRIL.

12 Sat. London: Medical Research and Laboratory Workers' Sub-committee, 11 a.m.

16 Wed. London: Council Meeting, 11 a.m.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 19th, 1919.

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British Medical Association.

CURRENT NOTES.

Vacancy on Insurance Acts Committee.

Owing to the resignation of membership of the Insurance Acts Committee by Dr. Stanley Hodgson of Salford, the question of filling the vacancy was left to the members of the Local Medical and Panel Committees throughout Lancashire. The result was that the following were nominated for election: Sir Thomas Flitcroft of Bolton, Dr. W. Moir of Darwen, and Dr. Frank Radcliffe of Oldham. The voting was by means of the transferable vote method, and resulted in the election of Dr. Frank Radcliffe of Oldham.

Pensions Medical Referees.

The attention of the Association having been drawn to the fact that medical referees under the Ministry of Pensions were sometimes required to attend and give advice at meetings of Disablement Subcommittees of local War Pensions Committees, for which services no fee was forthcoming, representations were made to the Ministry of Pensions. It was urged that as it appeared that such officers were not required, as part of their contract, to attend these meetings, the Ministry should call the attention of War Pensions Committees to the necessity of paying an adequate fee if their attendance was required. In reply, the Ministry of Pensions states that it has authorized any local War Pensions Committee which intimates to the Ministry that a number of cases awaiting consideration by Appeals Subcommittees would be more advantageously dealt with if the medical referee were present, to invite the attendance of the referee and pay him a special fee of one guinea, on the understanding that all cases other than those requiring medical advice are excluded from that particular session of the Appeals Subcommittee.

Meetings of Branches and Divisions.

GLASGOW AND WEST OF SCOTLAND BRANCH: GLASGOW CENTRAL DIVISION.

At a meeting of the Glasgow Central Division of the British Medical Association held on April 10th, under the chairmanship of Dr. J. F. FERGUS, the following motion regarding the Scottish Board of Health Bill was adopted:

The Division is of opinion that the representation of the profession on the board is not satisfactory, and that the profession generally should be directly represented. That there should be a medical consultative council elected by the members of the profession in Scotland, and that this council should have direct access to the board at all times. That all the various Government departments which at present deal with medical matters should be brought as soon as possible under the Board of Health.

The Division also considered the question of a revision of the fees in general practice in Glasgow.

SOUTH-EASTERN OF IRELAND BRANCH.

At a recent meeting of the South-Eastern of Ireland Branch, when Dr. J. H. JELLET was in the chair, the

following resolution, proposed by Dr. D. WALSH, seconded by Dr. MITCHELL, was passed unanimously:

That we the members of the South-Eastern of Ireland Branch urge the Council of the British Medical Association to take the necessary steps to form an affiliated Branch, outside their existing Articles of Association, in order to enable it to undertake the defence of the members, and otherwise to frame rules that would confer on them the benefits possessed by trade unions.

At a well-attended meeting of the medical profession of the South-East of Ireland, held at Waterford, the following resolution was unanimously passed:

That the Irish Medical Committee, owing to its representative character, is the only body that can represent the profession in Ireland with regard to present and future legislation; that we urge the profession throughout Ireland to organize the local medical committees so that they may be in a position to voice their wishes through the Irish Medical Committee, and to watch carefully the progress of events.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting.

Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

All concerned are reminded that nominations of candidates for election as members of Council by Home Branches or groups require to be forwarded to reach the Acting Financial Secretary and Business Manager not later than May 17th. Nominations may be either by a Division or by any three members of a Branch. Members and Divisions can obtain copies of the appropriate nomination form on application to the office. The nominations will be published in the SUPPLEMENT of May 24th. Where contests occur, election will be by voting papers sent direct by post from the Head Office to each member.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Commander R. R. Horley to the *Southampton*, Surgeon Lieutenant Commander G. P. Adshad to the *Dauntless*, Surgeon Lieutenants (temporary): H. T. Cabbon to the *Leamington*, W. O'G. Doueghugue to Gibraltar Yard.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Lieutenant (temporary) F. Sullivan to the *Hercules*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel C. J. O'Gorman, D.S.O., to be acting Colonel whilst employed as A.D.M.S. of a Division.

Temporary Lieut.-Colonel John Patrick (Captain R.A.M.C.T.F.) relinquishes his temporary commission on reposting.

The award of promotion to Brevet Colonel for Lieut.-Colonel P. S. O'Reilly, C.M.G., deceased, published on p. 88 of the *London Gazette*, January 1st, 1919, is cancelled.

The following relinquish the acting rank of Lieutenant-Colonel on reposting: Major and Brevet Colonel J. S. Bostock, Majors G. A. D. Harvey, C.M.G., R. B. Ainsworth, D.S.O., A. N. Fraser, D.S.O., J. W. Kynaston, Temporary Captains R. E. Drake-Brockman, D.S.O., R. Svensson, D.S.O., M.C.

To be acting Lieutenant-Colonels:—Whilst specially employed: Major R. B. Ainsworth, D.S.O., Major and Brevet Lieut.-Colonel C. R. Sylvester-Bradley, temporary Major C. M. Row. Whilst in command of a medical unit: Captain (acting Major) J. F. Robertson.

The following relinquish the acting rank of Major on reposting:—Captain C. Scales, M.C., Temporary Captains: A. Fullerton, M.C., G. A. Lilly, M.C., E. W. Sheaf, G. D. Eccles, M.C., J. C. Sale, D.S.O., M.C., C. F. Strange, E. G. Stanley, G. W. Smith, J. Jack, M.C., W. B. G. Angus, M.C., R. M. Greig, M.C., T. B. Batchelor, H. B. Wilson, O.B.E., A. H. Eicher, H. H. Sampson, G. L. Keynes, H. Pringle, J. C. L. Day, J. C. Muir, A. H. M. Robertson.

To be acting Majors:—Temporary Captains: A. W. D. Coventon, F. P. Young, G. R. B. Purce, W. C. Horton, J. R. Collins, R. A. Steven. Whilst specially employed: Captain C. M. Rigby. Temporary Captains: C. J. L. Patch, M.C., B. H. Woodyatt, R. C. MacQueen, P. M. Heath. Whilst commanding troops on a hospital ship: H. T. L. Roberts.

To be Captains, but not to reckon for pay or allowances prior to April 1st, 1919, with precedence as stated: Captains from Special Reserve:—J. Walker (February 9th, 1918, next below W. B. Allen), L. J. Sheil (March 19th, 1918, next below B. B. Marsh), D. W. John, M.C. (March 19th, 1918, next below R. H. Leigh), G. S. McConkey (March 23rd, 1918, next below H. G. Trayer), J. B. Williamson (March 30th, 1918, next below A. N. Minns), W. Campbell (March 30th, 1918, next below W. G. Shakespeare), J. E. Foley (April 6th, 1918, next below E. Canford), (acting Major) A. R. Ross (May 28th, 1918, next below J. B. Fotheringham), E. L. F. Nash, M.C. (May 28th, 1918, next below D. N. Macleod), R. S. Cumming, M.C. (January 16th, 1919, next below S. Russell). Captains (acting Majors) from Special Reserve and retain their acting rank:—C. D. M. Buckley, M.C. (February 28th, 1918, next below R. W. Galloway), C. F. Burton, M.C. (April 7th, 1918, next below G. P. Kidd), J. R. N. Warburton, M.C. (May 11th, 1918, next below R. A. M. Tomory), R. McKinlay (October 14th, 1918, next below R. B. Myles), J. H. Bayley, M.C. (November 1st, 1918, next below R. R. Thompson), F. R. H. Mollan, M.C. (January 16th, 1919, next below F. R. S. Shaw). Temporary Captains: H. Walker, M.C. (February 13th, 1918, next below C. A. Bernard), H. G. Peake (February 15th, 1918, next below H. M. Brand), (acting Major) E. M. Townsend (September 8th, 1918, next below W. T. Hare). Temporary Captains (acting Majors) and retain their acting rank:—J. Biggam, M.C. (April 2nd, 1918, next below P. W. Mackenzie), S. J. L. Lindeman, M.C. (February 25th, 1919, next below J. E. Rusby).

To be Lieutenants and to be temporary Captains, but not to reckon for pay or allowances prior to April 1st, 1919, with precedence as stated:—Captains from Special Reserve:—W. J. F. Craig (July 24th, 1916, next below G. Moulson), W. D. Whamond (August 5th, 1916, next below W. J. F. Craig), W. S. C. Hamilton (November 8th, 1916, next below W. M. Cameron), G. E. L. Simons (February 1st, 1917, next below A. P. Draper), K. Masson (June 11th, 1917), J. M. Savage (November 30th, 1917), E. P. N. Crough (December 6th, 1917), G. E. MacAlevy, M.C. (February 26th, 1918). Temporary Captains: F. A. R. Hacker (November 16th, 1915, next below T. S. C. Roche), R. N. Phense (July 1st, 1916, next below C. O. J. Young), T. J. Henderson (August 9th, 1916, next below W. D. Whamond), A. P. Draper, M.C. (January 19th, 1917, next below G. E. Spicer), V. J. Bonavia (February 10th, 1917, next below G. E. L. Simons).

To be Lieutenants, but not to reckon for pay or allowances prior to April 1st, 1919: Temporary Lieutenants C. K. T. Hewson and C. V. Macnamara, Lieutenant J. C. Conits (from Special Reserve).

The following officers relinquish their commissions:—Temporary Majors and retain the rank of Major: J. C. MacNeillie, January 15th, 1919 (substituted for notification in the *London Gazette*, January 18th, 1919), A. M. Humphry, Temporary Honorary Major A. de W. Snowden on ceasing to serve with the British Red Cross Hospital, Nodley, and retains the honorary rank of Major, Captain (acting Major) R. E. Gibson, O.B.E., and retains the rank of Major, Temporary Captain H. Stokes, and is granted the rank of Lieutenant-Colonel, Temporary Captains, and are granted the rank of Major: H. G. Willis, D.S.O., M.C., G. D. Mathewson, E. C. Lindsay, P. Moran, J. E. Fellow, H.S.O., M.C., V. M. Rich. Temporary Captains, and are granted the rank of Major: H. Hodge, H. A. L. Banham, W. R. P. McNeight, G. T. Gilford, W. E. Gennell, J. G. Murray, J. Philp, T. T. Higgins, J. N. Wheeler, N. A. A. Hughes, W. B. C. Angus, M.C., Colin Mackenzie, Temporary Captains, on account of ill health contracted on active service, and retain the rank of Captain: A. Thomson, F. L. Webster, M. E. A. Wallis, temporary Captain W. P. S. Johnson on account of ill health and retains the rank of Captain, Temporary Captains and retain the rank of Captain: J. C. Muir, E. J. Holland, W. Hamilton, E. F. G. T. Heap, S. B. Hanbury, M. Hallam, A. Hunter, M. Hall, D. C. Hanson, M.C., J. B. H. Holroyd, A. W. Holthausen, R. C. Hutchinson, W. T. Hardie, E. C. Hardwick, H. W. Horan, F. J. Henry, M.C., H. Holt, J. D. Hartley, P. G. Hack, K. G. Haig, A. J. P. Novell, D. Martin, C. M. Roberts, G. E. E. Nicholls, G. Mowat, G. P. Petrie, W. St. C. McClure, H. P. Overend, A. M. Warwick, M.C., W. A. Murray, F. T. Simpson, M.C., T. W. Rutledge, J. W. B. Hanington, C. McShane, F. M. P. Rice, C. S. O'Neill, D. Ferguson, G. R. Hannon, D. T. Harris, G. McMullan, T. J. Foot, R. A. Pawcus, J. G. M. Molony, C. C. Marston, D. J. Lewis, A. F. R. Conder, F. J. Cairns, S. W. Green, P. E. Wilson, S. D. Fairweather, C. W. Emlyn, J. M. Inverarity, R. J. Willson, N. G. W. Davidson, C. V. Kebbelle, C. H. Graham, F. G. H. Cooke, J. G. Morrin, A. E. Druiitt, W. Gibson, W. N. May, C. C. Finlator, G. Newstead, P. S. McIntosh, G. C. M. McGonigle, T. W. Jackson, M.C., A. Bisset, B. A. I. Peters, B. W. Housman, D. L. Williams, A. D. Buchanan, H. W. Webb, W. S. McGowan, C. Gordon, R. H. Hodges, M.C., W. Gilbertson, A. C. Falkiner, A. C. W. Knox, H. M. Moir, W. Murray, J. T. Kyle, J. S. Crawford, E. M. Lithgow, C. M. Dickinson, W. Herbertson, A. B. Porteous, G. D. Eccles, M.C., E. F. N. Currey, G. B. Macgregor, M.C., A. Gray, C. M. Ockwell, A. B. Cluckie, R. L. Ferguson, S. G. Johnson, T. Gillespie, J. Grogono, R. N. Woodsend, W. H. Pearce, J. Ogilvie, R. J. Blenkhorn, R. M. Wright, H. W. Barnes, N. Campbell, D. C. Welsh, R. H. Tribe, M.C., D. T. Skeen, A. W. Young, M.C., T. S. Wright, A. B. Simpson, T. W. Wadsworth, J. W. Burns, J. H. Cutlbert, L. Game, R. W. Stocks, P. Bowes, D. G. Gardiner, E. Scott, D.S.O., R. Stansfield, M.C., W. Waddell, W. E. H. Beard, E. Fullerton, W. M. Christie, J. Smith, B. O. Kinney, W. E. A. Buchanan, W. A. Troop, M.C., A. Dingwall-Fordyce, C. S. E. Wright, E. H. Freeland, H. A. Williams, C. G. Lowry (on ceasing to serve with the Belfast Orthopaedic Hospital), R. J. Johnston (on ceasing to serve with the Home Hospital Reserve), V. E. Negus, J. Raffan. Temporary Honorary Captains, and retain the honorary rank of Captain: G. S. Peppers, February 6th, 1919 (substituted for notification in the *London Gazette* of March 8th, 1919), R. P. Mitchell (on ceasing to serve with the British Red Cross Society in France). Temporary Lieutenants, and retain the rank of Lieutenant: E. J. F. Hardenberg, J. Dewar, A. T. Denham, G. Smith.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Lieut.-Colonel W. H. Pope relinquishes his commission on ceasing to be employed.

The following are transferred to the unemployed list: Captains A. B. Lindsay, O. L. Birmingham, C. W. W. James, C. F. Hereford.

Granted temporary commissions:—As Captains: Captain J. S. Dockrill (R.A.M.C.), N. S. Gilchrist, O.B.E. (temporary Captain R.A.M.C.).

The notification in the *London Gazette* of April 1st concerning Captain E. W. W. Jones is cancelled.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain W. H. Elliott, M.B.E., to be acting Lieutenant-Colonel whilst in command of a medical unit.

Captains to be acting Majors whilst specially employed: H. W. Hills, F. M. Taylor, P. A. Clements.

Captains T. H. Davie, M.C., and J. A. Scott relinquish their commissions on account of ill health contracted on active service and retain the rank of Captain.

APPOINTMENTS.

MACKINNON, J. M.B., Ch.B.Glas., Medical Officer of the District and Children's Home of the Sheffield Union.

MURRELL, G. F., M.B.Lond., Physician to the Royal Berks Hospital.

PORTS, G. F.R.C.S.Ed., Honorary Surgeon to the Kent County Ophthalmic Hospital, vice C. Killick, F.R.C.S.

WIGGLESWORTH, F. M.B., Ch.B., Medical Officer of the Institution and District of the Howden Union.

LIVERPOOL HOSPITAL FOR CANCER AND SKIN DISEASES.—Honorary Surgeons: F. W. Baker Young, M.B., Ch.B.Vict., F. J. Strong, Henney, M.A., M.D., F.R.C.S.I.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

DEATH.

SHUTTLE.—On April 9th, at 2, Grosvenor Square, Southampton, Harry Wynter Shuttle, M.R.C.S., L.R.C.P., aged 63. No flowers by request.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Section of Study of Disease in Children: Friday, 4.30 p.m., Mr. Warwick James: Multiple Epilepsies; Dr. J. Porter Parkinson: Aplastic Anaemia. Section of Electro-Therapeutics: Friday, 8.30 p.m., Dr. James Metcalfe: Stereographs of Fractures of the Femur; Discussion on "The Radiography of Gall Stones."

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, APRIL 26TH, 1919.

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British Medical Association.

CURRENT NOTES.

Meeting of the Council.

A QUARTERLY meeting of the Council of the British Medical Association was held on April 16th at 429, Strand, when Dr. J. A. Macdonald, Chairman of Council, was in the chair.

Finance.

The Treasurer, Dr. G. E. Haslip, presented the annual financial statement and balance sheet, particulars of which will be published in due course.

"Proceedings" of the Special Meeting.

On the recommendation of the Journal Committee, the Council resolved that the proceedings of the Special Clinical and Scientific Meeting in London, April 9th-11th, should be published in a separate volume, and that it should contain in addition certain particulars of medical interest indicating the part taken by the medical profession in the war. The book will be issued to every member of the Association, and presented to all those who attended the meeting. It will also be placed on sale.

British Medical Association Lectures.

At its meeting in January the Council instructed the Science Committee to consider the allocation of a certain part of the funds available for science grants to pay lecturers to attend to give lectures or demonstrations at scientific or clinical meetings arranged by Divisions or Branches. The Committee presented a report to the Council on April 16th advising that the experiment should be tried, and recommended that a portion of the funds allotted to it, not exceeding £200 a year, should be diverted from science grants to the subsidizing of lectures on scientific and clinical subjects. Each Division and Branch is requested to take the matter into consideration, and to suggest some subject in which it is specially interested, and if possible the lecturer it would prefer. The Science Committee will then make arrangements, or if requested will make suggestions. The lecturer will receive a suitable fee and expenses.

Prizes.

It was resolved that the Middlemore Prize and the Stewart Prize of the Association should both be awarded in 1920. The Middlemore Prize is awarded for the best essay on the scientific and practical value of improvements in ophthalmic medicine and surgery, made or published during the three years preceding the award. The Stewart Prize is awarded in recognition of important work already done, or of researches instituted and promising good results regarding the origin, spread, and prevention of epidemic disease. Both prizes have usually taken the form of an illuminated certificate and a cheque value £50.

Raising of Income Limit for Insured Persons.

The Council had a report from the Insurance Acts Committee that the Insurance Commissioners were considering a proposal to increase the income limit of £160 a year, which now applies to persons who are employed otherwise

than in manual labour. This step is being taken because large numbers of persons whose income was previously under £160 have, by war bonuses and other additions to wages, which may now be considered to be more or less permanent, passed the £160 limit. Various figures had been suggested for a new income limit, but it was believed that the figure to be adopted would be £250, which was thought roughly to correspond in money value to the old limit. It was stated also that it was the intention to bring in a bill to raise the limit almost immediately, because unless something was done before the end of June, a large number of persons at present insured, estimated as being between half a million and a million, would automatically go out of insurance on June 30th. Inquiries had elicited the fact that though the intention of the proposed bill is merely to keep in insurance persons who are of the class intended by the 1911 Act to be insured, an incidental effect would be to allow of the entrance to insurance of an uncertain number of persons who were in 1911 in receipt of an income over £160 but under £250, though such persons would have the right to claim exemption. The Council directed that immediate representations should be made to the Commissioners objecting strongly to the proposed bill in so far as it would allow this latter class to claim medical benefit.

War Emergency Fund of the Royal Medical Benevolent Fund.

A subscription of £8 18s. 6d. has been received from the Ross and Cromarty Division of the British Medical Association (per Dr. Eneas K. Mackenzie, Honorary Secretary) in response to the appeal, and has been passed on to the Treasurer of the War Emergency Fund. The names of individual subscribers are published monthly in the advertisement pages of the JOURNAL.

INSURANCE MEDICAL SERVICE.

PROPOSED REVISION OF TERMS AND POSSIBLE EXTENSIONS.
The following letter, dated April 23rd, 1919, has been addressed by the Medical Secretary of the British Medical Association to the chairmen and secretaries of Local Medical and Panel Committees:

The conferences which have been proceeding since May last between the Insurance Acts Committee and the Insurance Commissioners for the purpose of preliminary discussions preparatory to any future revision of the conditions of service of insurance practitioners are now approaching a conclusion. The Insurance Acts Committee therefore wishes to inform Local Medical and Panel Committees and the profession generally of the present position of the matter, and of the way in which it is hoped to secure the thorough consideration of the subject by all concerned before any definite negotiations as to future terms of service are entered upon.

As those who have followed the course of events are aware, the above-mentioned conferences were entered upon as a result (indirectly) of the application made to the Government by the Insurance Acts Committee, by direction of the Local Medical and Panel Committee Conference of October, 1917, for an increase of the capitation fee

under the Insurance Act. In reply to that application it was stated, first by Sir Edwin Cornwall and afterwards by the Chancellor of the Exchequer, Mr. Bonar Law (when a deputation waited upon him on March 15th, 1918), that the Government could not at that time consider the application for increase of remuneration except in so far as it might be justified by war conditions. A change in remuneration on grounds independent of war conditions could only be considered as part of a general revision of the conditions of service. Such a revision would have taken place, normally, at the end of three years from the coming into operation of medical benefit, that is, at the end of 1915, but it had been postponed by mutual consent on account of the war. Mr. Bonar Law stated, however, that if the profession desired that the consideration of questions affecting a revision of the terms of service should be entered upon without further delay, the Government saw no objection to preliminary discussions between the Commissioners and the Insurance Acts Committee taking place. The question of the actual amount of remuneration could not be entered upon satisfactorily at that time, but there was no reason why all the other conditions of service should not be discussed.

On consideration of this statement, the Conference of Local Medical and Panel Committees of April, 1918, passed the following resolution:

Minute 21.—Resolved: That it is desirable at once to reconsider the methods of distribution of available funds as between area and area and between practitioner and practitioner, and thereafter to reconsider also the general financial arrangements and terms of service with a view to their settlement on an improved basis at the earliest convenient time.

Pursuant to this resolution, the Insurance Acts Committee appointed a Subcommittee to carry on the discussions with the Commissioners on its behalf. The first subject taken up was that of the method of calculating remuneration under the Act, upon which a Report (M.5/1918-19) was submitted to the Local Medical and Panel Committees in September, 1918, and its principles were approved by the Conference of Local Medical and Panel Committees in October last. The question of mileage for rural practitioners was also taken up, and a Report (M.19/1918-19) issued to Local Medical and Panel Committees in December, 1918. The replies received show general approval.

The Conference then entered upon consideration of conditions of service apart from remuneration, including the duties of insurance practitioners, questions of administrative arrangements, questions of the form of Agreement and the procedure for revising the Agreement from time to time, questions of procedure in dealing with alleged breaches of agreement, disputes between doctors and Insurance Committees, withholding of Exchequer Grants and removal from the panel. The question was also taken up of the possibility of some provision of additional services, such as those for which Parliamentary Grants were made in 1914, or of others that might appear to merit consideration. For this part of the discussion the Commissioners, with the cordial approval of the Insurance Acts Committee, invited certain distinguished consulting physicians and surgeons and others especially qualified to assist in the consideration of such matters (vide statement in the BRITISH MEDICAL JOURNAL SUPPLEMENT of March 1st, 1919, p. 28).

It is hoped to issue early in May to all Local Medical and Panel Committees, and also to every member of the profession, a full report on the whole of the matters thus considered. In the meantime it is most important that each committee should arrange to hold a meeting in its own area for the consideration of the report in the last fortnight of May, either of the committee alone, or preferably of the whole local profession. Those who attend the group conferences dealt with later will thus be prepared to bring up special points of difficulty which have presented themselves at these preliminary meetings.

Shortly afterwards, in accordance with the decision of the Conference of October last, meetings will be called of groups of Local Medical and Panel Committees in various parts of the country for consideration of the subject, and at these meetings representatives both of the Commissioners and of the Insurance Acts Committee will attend to assist in the elucidation of the report. At the conclusion of this series of meetings a Conference of Local Medical and Panel Committees will be held, probably on July 17th and 18th, to consider the various questions arising.

It is clear that the report will include matters which must closely concern almost all members of the profession, not merely those at present engaged in National Insurance

work. The report will therefore be sent to all members of the profession, and all should be invited to the local meetings which are to be called.

In this way it is believed that ample opportunity will be afforded to all parties for a full consideration of the whole matter, after which the Insurance Acts Committee, if so instructed by the Conference of Local Medical and Panel Committees, will be able to enter upon definite negotiations for a revision of the terms of service, with reliable information as to the views and wishes of the profession.

The organization of the group conferences referred to above will be a matter requiring careful adjustment between all parties concerned, and I hope shortly to consult you on the arrangements most suitable for your area.

THE ORGANIZATION OF THE PROFESSION.

CORRESPONDENCE.

SIR,—Dr. Cox, in his answer to Dr. Lyth's criticisms, still continues to argue that a trade union is in no better position than the British Medical Association to organize and lead the profession in its efforts to free itself from the shackles by which it has been bound for so long.

He will not object, surely, to any member of the British Medical Association taking a different view. I myself have worked on behalf of the British Medical Association for many years in the Oldham Division, and during these years I have many times seen the promise of good things and as many times seen the promise vanish into failure, until the conviction has been forced upon me, as it has upon so many of us, that some organization with different methods and with more hold on its members is urgently needed.

We in the north have every-day evidence of the value of trade unions. One very striking difference between trade unions and the British Medical Association is this: Trade unions get there every time, whilst the British Medical Association never gets there at all.

The British Medical Association last year went to Mr. Bonar Law to ask for an increase in panel fees. He told the deputation that he dared not go to Parliament and ask for an increase. He gave the engineers, miners, and railwaymen increases galore, without asking Parliament. Why? Because they were strong trade unions. The miners recently forced the Government to hold an inquiry instantly, and the Government had to do it. Why? Because the miners have a strong union.

In the SUPPLEMENT to the JOURNAL of April 12th it is stated that the Association on February 24th asked Dr. Addison to receive a deputation on the question of fees for notification of infectious diseases, and that he had promised to receive it on the earliest date after Easter. If the Association had been a strong trade union he would have received it on February 25th. If the result is as I think it will be, I am anxiously waiting to see what the British Medical Association will do.

When it comes to a fight no one has any faith in any body but a trade union, and, what is more important still, a trade union is the only body of which the Government and the friendly societies are afraid, and it is the only thing to which they will yield. It must be plain to every one that the British Medical Association in recent times is trying to act as a trade union without being one. This will never do. You cannot run with the hare and hunt with the hounds. One instance of this is that precious document M.21, which is a trust fund, to be in the keeping of the Insurance Acts Committee. Why not in the keeping of the British Medical Association? The inference to me is that the British Medical Association is afraid that it might go the way of the Coventry money. If the British Medical Association was a registered trade union, that money would be quite safe.

The benefits of trade unionism are so very obvious that Dr. Cox will have a hard task in trying to argue to the contrary.—I am, etc.,

Oldham, April 13th.

TOM CLEGG.

SIR,—I have received a circular from the general secretary of the Medico-Political Union, warning me against "the latest manoeuvre of the British Medical Association in the form of M.21." This circular contains no informa-

tion which is either useful or illuminating. Its "facts" are not new; neither is the bitter spirit which underlies most of its "criticisms." Its only aim and object is to demonstrate the superiority of the Medico-Political Union over the British Medical Association as a means of promoting the interests of the profession, because the former body has attained the dignity of being registered as a trade union.

This question of trade unionism has become a fetish with the officials of the Medico-Political Union. They are like children with a new toy. And, like children, they do not understand the mechanism of the toy. They do not appreciate its workings. They do not recognize its limitations, nor—what is more important—their own. Their chief delight seems to be in vaunting the superiority of their own article over all others, on the strength of certain advantages which it may possess in some particular point.

The one thing which appeals to these trade union leaders is the fact that in the event of certain actions taking place, the funds of their society may be protected. The point is really by no means certain. In any case, they are committing the old mistake of the labour and trade union movement: they are fixing their gaze upon merely the material or economic side of the movement and relegating to the background the really vital principles, what one may term the spiritual forces, connected with all progress and development. In fact, the Medico-Political Union instead of being, as its officials imagine, in the van of progress, is simply behind the times.

These leaders have been guilty of another very common but very serious error. Their intentions were doubtless excellent. The medical profession should long ago have been organized on trade union lines. We have been at least a quarter of a century behind the times. But when the profession, or any considerable section of it, finally resolved to run along these lines, then at least they should have been acquainted with the history of the trade union movement; they should have studied its present position and its future trend; they should have gone into the movement determined to utilize its experience and carry forwards the banner of progress. Instead of which they are now where the ordinary trade union movement was twenty years ago. They are, therefore, a clog on the wheel of medical progress and an obstacle to the finding of its own soul by the profession, instead of being the driving and illuminating force which they fondly imagine themselves to be.

It would occupy an undue amount of your space were I to elaborate the position as its details present themselves to me. I will content myself with emphasizing one point, and that a vital one, in which the policy of the Medico-Political Union differs from, and falls short of, all that is best in the modern trade union movement. The latter movement is making for unity; the policy adopted by the officials of the Medico-Political Union makes for disruption. In the industrial arena the tendency is for the elimination of many unions, and towards unification and consolidation. The ultimate aim seems—consciously or unconsciously—to be towards the national guild. The existence of a large number of trade unions in connexion with one industry has been in the past—and, indeed is still in some instances—the great curse and stumbling block of the movement; and this is the system which the Medico-Political Union and other local committees and societies are trying to introduce as a means of organizing the medical profession! Let their leaders go and study the history and the direction of the movement of which they talk so much and seem to know so little. And let them learn the art of using the material which is at hand.

Had we all taken the interest that we should do in the affairs of our own profession we should long ago have made the British Medical Association into the strongest, most blackleg-proof trade union (in fact if not in name) in existence, democratically controlled, carrying out the policy agreed upon by its members. It is not too late to do so now. We have been moving in that direction. We can do it if we like. Our future is not in the hands of any Government department; it is with ourselves to make what we choose of it. One thing, and one thing alone is necessary—unity. The disruptive tactics of the Medico-Political Union make for weakness, not for strength.—I am, etc.,

JOSEPH NELSON.

Hull, April 21st.

EXHIBITION OF SURGICAL INSTRUMENTS, DRUGS, FOODS, AND BOOKS.

WITH this issue we begin a detailed review of the exhibition of surgical instruments, drugs, foods, books, etc., which was held in the Physics Examination Hall of the Imperial College of Science and Technology throughout the Clinical and Scientific Meeting. The exhibition, to which more than sixty firms contributed, was generally pronounced a gratifying success, and if there were not many novelties—and there were some—the demonstrations and displays at the various stands were extremely interesting, and visitors turned up in good numbers during the three days for which the exhibition was open. The order in which the exhibits are noticed here is merely the order in which it was most convenient to inspect what was placed on view.

THE DENNISON MANUFACTURING COMPANY, LTD. (Sardinia House, Lincoln's Inn Fields, W.C.2). Crêpe paper bandages came forward as a war substitute, owing to the necessity of conserving cotton; but, like other materials which suggested themselves in an emergency, they have proved to have advantages to warrant their continued use. Crêpe paper has such elasticity as to adapt itself comfortably to the limb or other part, and it can also be sterilized by dry or steam heat. The bandages on exhibition were made in the usual widths—from one to four inches, and in lengths of forty-five feet. It was stated that six millions of these bandages had been supplied to the American army. In addition to the bandages the firm was supplying towels, sputum papers, dental bibs, and other articles in the same material.

VIROL, LTD. (148-166, Old Street, E.C.1). This stand was devoted to two preparations—one that of "virol" itself, the familiar nutrient, and the other "virolax," which is a lubricant for the bowels, and consists of liquid paraffin and a "virol" modification. The "virol" is added in this case not so much as a food, but as a pleasant vehicle for the laxative.

THE BRITISH COMMERCIAL GAS ASSOCIATION (47, Victoria Street, S.W.1) had a couple of gas fires on view, with the object of reminding the medical man and his wife of the hygienic and economic value of gas as domestic fuel.

H. K. LEWIS AND COMPANY, LTD. (136, Gower Street, W.C.1), had many of their publications on view, as well as a corner of their circulating library. Here were three volumes on *Regional Surgery*, by British and American authors, edited by J. F. Binnie; Lieut.-Colonel R. H. Elliot's *Glaucoma*, and J. H. Parsons's *Colour Vision*. One of the war books was *The Australian Army Medical Corps in Egypt*, by Sir J. W. Barrett and Lieutenant Deane, and another was the late Sir James Mackenzie Davidson's *Localization by X Rays and Stereoscopy*.

NEWTON AND WRIGHT, LTD. (72, Wigmore Street, W.1). The principal display here was a new x-ray couch, intended for use with the tube either above or below. Much ingenuity had evidently been spent upon securing easy movements, accurate adjustments, and ample protection. Indeed, in addition to the provision of the usual protective material, the operator was spared the necessity of looking directly at the tube at all unless he chose, the tube being reflected on to a mirror. Another apparatus which has undergone considerable modification and simplification since its introduction by this firm ten years ago is the Snook machine, which in the model shown was as compact and mobile as an apparatus of this nature can be expected to become. Of the accessories shown, an improved Wheatstone stereoscope was to be noted, in which the mechanical adjustments were on the centre mirror instead of on the lantern boxes holding the plates, with the result that the images could be more rapidly brought into register. Some new cassettes for the accurate adjustment of the two plates in the holder when doing stereoscopic work supplied another instance of the stimulus which stereoscopic radiography has lately received. A Coolidge filament transformer and a set of tungsten tubes and other apparatus made up a comprehensive x-ray exhibit.

DROITWICH, with its well-known brine baths, put forward its claim to possess the strongest saline waters known. In addition to the springs, it drew attention to its

natural and artificial advantages in the shape of climate and situation, and its bathing establishments and hotels, with an eye upon possible future patrons who have been diverted from Continental spas.

DOWSING RADIANT HEAT COMPANY, LTD. (39-40, York Place, Baker Street, W.1). The big radiant heat bed was the outstanding exhibit at this stand. It enclosed ten lamps, which together had an energy of 2,500 watts. Each pair of lamps was on a separate switch, so that the heat application to the patient's body was controlled. In addition there were smaller appliances adapted in shape and size for conveying heat to different parts of the body, such as the hand or the shoulder.

SISTER MOTE (2, West Eaton Place, S.W.1) showed a new contrivance in the shape of an adaptable nursing trolley for overcoming the difficulty experienced in hospitals and nursing homes when making the bed or turning the mattress. Hitherto this necessary operation has had to be done while the patient is on the bed, and the result has been discomfort alike to patient and to nurse. The light trolley is so made that it can be wheeled to the side of the bed, where it can be adjusted to any level, and its enamelled sheet iron top then overlaps half the mattress. To this top the patient can be temporarily transferred, and wheeled away while the bed is made. Various nursing treatments, such as irrigation and massage, are possible while the patient is on the trolley, and the commode is also available.

APPLETON AND COMPANY (25, Bedford Street, W.C.2) had an interesting literary exhibit, which included such standard works as Osler's *Principles and Practice of Medicine*, and Whitridge Williams's *Obstetrics*; also F. C. Wood's *Chemical Diagnosis*, and Milton J. Rosenau's *Preventive Medicine and Hygiene*. The volumes, new and old, were very attractively displayed, and many visitors must have wished to turn their pages, but this was the most crowded corner of the exhibition.

BOVRIL, LTD. (148-166, Old Street, E.C.1), confined themselves to a tempting display of their well known beef extract, together with "invalid bovril," which is an unseasoned and more highly concentrated preparation for cases in which the condiment in "bovril" might not be advisable.

THE BRITISH THOMSON-HOUSTON COMPANY, LTD. (77, Upper Thames Street, E.C.4). This small but highly interesting exhibit was confined to a couple of Coolidge tubes. The Coolidge tube has been introduced since the last exhibition was held in 1914, and therefore these two pieces of apparatus, in appearance not greatly different from the ordinary x-ray tube, were entitled to be regarded as novelties. Of the two models, one was the standard type with the bulb 7 in. in diameter, and the other the radiator type with a 3½ in. bulb. They were merely exhibited, and not demonstrated so far as we could see, but they served as a reminder of the greatest advance in x-ray production which the last few years have witnessed.

BURROUGHS, WELLCOME AND COMPANY (Snow Hill Buildings, E.C.1). The Burroughs Wellcome exhibit was significant of the advance in British chemical industry which has taken place during the war, although emphasis was laid upon the fact that this firm had produced atropine and eserine as far back as 1901, and homatropine in 1905. Foremost among the recent achievements were "kharsivan" and "neo-kharsivan," the equivalents of salvarsan and neo-salvarsan, and with these was "soamin," a soluble organic preparation of arsenic. Other equivalents exhibited were hexamine (replacing urotropine), benzamine salts (replacing β-eucaine), also ernutin (synthetic ergot). Influenza vaccines, prepared in the Wellcome research laboratories, were exhibited, as well as the firm's usual "tabloid" and "soloid" products.

CALLARD AND COMPANY (74, Regent Street, W.1) had an exhibit of starchless and sugarless breads, biscuits, and other foods for diabetics; the range of articles included sugarless chocolate, sweetened with saccharine.

PARKE, DAVIS AND COMPANY (50, Beak Street, W.1). A number of glandular products were shown by this firm, including tablets of the pituitary, parathyroid, and pineal glands, and of ovarian substance, as well as ampoules of sterilized solutions of pituitrin (pituitary gland) and pitudrenalin, a combination of the active principles of the pituitary and suprarenal glands. The exhibit also com-

prised granulogen, a paraffin dressing for burns and wounds; protosil, a combination of colloidal silver, with an albuminoid for application to mucous surfaces, and various attractive pharmaceutical preparations.

W. AND J. BURROW, LTD. (Malvern). The praises of the soft spring waters of Malvern—said to be the purest natural water, certainly in the kingdom, probably in Europe—were sung at this stand. It was shown bottled in two forms, one still, and the other sparkling, due to slight aëration.

ALLEN AND HANBURYS, LTD. (48, Wigmore Street, W.). This firm was represented at two stands, one of which was given up to chemical products and the other to hospital and operating theatre equipments. Among the preparations shown were a pituitary gland extract for hypodermic use, a peptone for bacteriological purposes, and a specially prepared barium meal for x-ray diagnosis. The other stand comprised a highly interesting assortment of operation and orthopaedic tables, and various examining and operating instruments. Some patterns of urological instruments were displayed, as well as a combined urological table and chair, as made for the London Hospital.

GLAXO (155-157, Great Portland Street, W.1). A large sample of this desiccated milk preparation was placed side by side with a specimen of cow's milk in order to contrast the unclotted appearance of the "glaxo" with the heavy, leathery, casein clot in ordinary milk. Prominence was given to a letter from the Ministry of Food ordering 4,000 tons of this preparation in 1917-18 for infant feeding, in view of the threatened milk shortage.

THE ANGLO-FRENCH DRUG COMPANY, LTD. (Gamage Building, Holborn, E.C.1), shared a stand with MODERN PHARMACALS (48, Mortimer Street, W.1), and both showed a number of chemical products. Among those displayed by the former firm was "galy" as a salvarsan and neo-salvarsan substitute, and the second firm's exhibit included "glucarsenol," a glucose solution of novarsenobenzol; and "coumarol," a chemical colloidal copper put forward for cancer treatment.

MALTINE MANUFACTURING COMPANY, LTD. (183, Acton Vale, W.3). The well known preparation named "maltine" was the first thing to meet the visitor's eye on entering the exhibition. It was shown in two forms, one plain, and the other combined with cod-liver oil, and its claims as a starch digestant and a preventive of coarse curdling in milk diets and of constipation in infants were set out.

SOUTHALL BROTHERS AND BARCLAY, LTD. (Birmingham). Among several preparations at this stand the most prominent was "vitater," which was put forward as a concentrated food, combining the proteins of milk with the glycerophosphates of magnesium, calcium, and sodium. A British equivalent for pre-war "atophan" was forthcoming in the shape of "phenoquin," a uric acid eliminant. In addition to these and to disinfectants and antiseptics, the towels and sanitary requisites of this firm were a feature.

THE MEDICAL SUPPLY ASSOCIATION, LTD. (167-185, Gray's Inn Road, W.C.1). This firm had two stands in the exhibition, one of them devoted to x-ray and electrical apparatus and the other to surgical instruments. Some high-class apparatus, all of British manufacture, were shown in the electrical section. These included a static machine in actual work in an English April, to refute the notion that all such machines are dependent on weather conditions; also an x-ray installation specially designed to secure the positions which are desired by the dental surgeon. The x-ray table adopted by the army and the faradic battery of the War Office type were two other objects of interest, and another feature, comparatively new, was a combined apparatus for high frequency and diathermy.

THERAPEUTIC FOODS COMPANY (Willesden, N.W.10). This was an exhibit of bread and other foods known as "emergen," in which it is claimed gluten is used in a fresh state so as to retain the flavour of white bread together with the special nutritive character necessary for dietetic treatment of alimentary disorders. The articles shown seemed more palatable than some diabetic foods.

H. W. COX AND COMPANY, LTD. (42-46, Wigmore Street, W.). In a large assembly of apparatus the most interesting items were an x-ray couch and a vertical stand

designed in both cases with a view to facility of adjustment and adequacy of protection. What was claimed to be the most powerful coil in the x-ray world was also in evidence, capable of working efficiently with 12 kilowatts, and useful for the Coolidge tube and other purposes when great power is required. An electrocardiograph outfit and a good deal of smaller apparatus was on view, and the x-ray material included fluorescent and intensifying screens and pastilles.

(To be continued.)

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Overseas Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting. Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

All concerned are reminded that nominations of candidates for election as members of Council by Home Branches or groups require to be forwarded to reach the Acting Financial Secretary and Business Manager not later than May 17th. Nominations may be either by a Division or by any three members of a Branch. Members and Divisions can obtain copies of the appropriate nomination form on application to the office. The nominations will be published in the SUPPLEMENT of May 24th. Where contests occur, election will be by voting papers sent direct by post from the Head Office to each member.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—Dr. M. J. Oliver, Honorary Secretary (St. Boswells), gives notice that the annual meeting of the Division will be held in the Baillie Memorial Hall, Newtown St. Boswells, on Thursday, May 8th, at 3 p.m.

SURREY BRANCH: GUILDFORD DIVISION.—A meeting of the Guildford Division will be held on Friday, May 2nd, at the Royal Surrey County Hospital, at 4 p.m., when Dr. Alfred Cox,

O.B.E., will deliver an address on the Imminent Alterations and Extensions in the Insurance Medical Service and their Connexion with the Ministry of Health. All practitioners in the area, whether members of the Association or not, are cordially invited to the meeting.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Commanders E. Arkwright to the *Victory*, A. R. Bankart, C.V.O., to the *Victoria and Albert*; A. J. Gaulton to the *Thunderer*, J. P. H. Gree halsh to the *Bombay*, W. H. Blatchford to the *Bacchante*. Surgeon Lieutenant Commanders H. A. Killond knight to the *Boudicca*, P. F. Minet to the *Fox*, G. E. McCowen to the *Dragon*, Surgeon Lieutenant G. D. H. Ferguson to the *Canterbury* Surg on Lieutenants (temporary) G. H. Fitzgerald to the *Kinross*, J. McFarlane to the *Pekin*, T. W. Robbins and J. Bostock to the *Vivid*, W. G. Wylie, V. T. Smith, and R. Pollok to the *Victory*; J. B. Crawford to the *Pembroke*, E. Heffernan transferred to the permanent list with original seniority of December 7th, 1914, J. E. Clark to the *Princess Royal*, F. L. Cassidi to the *Mallory*, P. H. S. Smith to the *Burslem*, G. Nicholson to M. 27.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Lieutenants (temporary): H. M. Meek to the *Glory*, A. C. Sleigh to the *Vivid*.

ARMY MEDICAL SERVICE.

Temporary Colonel T. H. Openshaw, C.B., C.M.G. (Lieut.-Colonel R.A.M.C.T.F.), relinquishes his temporary commission on reposting.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel H. L. W. Norrington, D.S.O., retires on retired pay. Lieut.-Colonel A. E. Weid to retire on retired pay. Temporary Captain H. J. de Brent, M.C., relinquishes the acting rank of Major.

Temporary Lieutenant John W. Cowl is removed from the army for absence without leave, December 28th, 1918.

Temporary Captain A. C. Parsons to be acting Major whilst specially employed.

The following officers relinquish their commissions:—Temporary Major and is granted the rank of Lieutenant-Colonel: H. J. Woolfenden. Temporary Majors and retain the rank of Major: C. F. Rolleston (on ceasing to serve with the Manor—County of London—War Hospital), T. B. Higgs, W. Pemberthy, T. H. T. Frampton, M. B. Wright, H. W. Macnamara. Temporary honorary Major J. Baker (on ceasing to be employed at Crowthorne War Hospital). Temporary Captains and granted the rank of Lieutenant-Colonel: L. D. Shaw, D.S.O., R. Svensson, D.S.O., M.C. R. E. Drake-Brockman, D.S.O. Temporary Captains and are granted the rank of Major: S. G. Luker, W. C. Douglass, M.C., G. V. Bakewell, W. S. Edmond, C. H. Corbett, H. B. Wilson, R. L. Scott, F. J. Thorne, E. L. Puddicombe, G. W. Smith, R. Milne, R. M. Greig, M.C., T. B. Batchelor, W. H. W. Attlee. Temporary Captain P. Sturrock, on account of ill health, and retains the rank of Captain. Temporary Captain, on account of ill health contracted on active service, and retains the rank of Captain: F. A. Morrison. Temporary Captains and retain the rank of Captain: P. J. Hay, R. L. Moorhead, C. S. L. Roberts, H. S. Banks, E. L. Taylor, M. B. Lindsay, A. Boyle, J. C. M. Bailey, O.B.E., A. L. Anderson, A. M. Crawford, H. G. Smith, J. E. R. McDonagh, H. E. H. Mitchell, S. B. Turner, R. E. McLaren, W. St. J. Cogan, A. H. Donaldson, J. A. Noble, W. G. McAfee, G. A. Rorie, J. C. P. Bayley, J. D. Driberg, F. de R. Martyn, C. A. Holburn, J. S. Pearson, R. W. Dale, W. F. Box, L. F. Hemmins, F. H. Storey, V. M. Walsh, O. B. L. Hallett, B. H. Mellon, J. H. Tomlinson, W. C. Rainsbury, F. C. H. Bennett, J. H. Hood, A. Grant, A. G. Troup, H. Neame, W. Farquharson, K. H. Stokes, J. C. Clayton, A. Y. Hutchison, J. Rowat, R. H. C. Gompertz, J. H. Saunders, A. E. A. Burkhard, T. R. H. Blade, M.C., F. Paine, G. Price, N. Instone, A. E. Gravelle, J. D. Judson, J. Kean, D. Green, G. C. Anderson, A. Reeves, W. C. Fraser, R. H. Scovell, R. B. Ferrar, R. H. Robinson, E. M. B. Payne, A. B. Bateman, D. Jeaffreson, T. W. E. Ross, A. Balde, R. A. MacNeill, A. R. P. Scott, J. H. P. Vivian, W. E. Barrett, R. Alderson, H. Speirs, W. Murray, W. R. Snodgrass, G. J. Arnold, E. A. Walker, M.C., A. A. Murison, W. Rigby, G. L. Pillans, M.C., A. Wilson, C. F. Rumsey, J. Porter, B. C. Scott, R. A. H. Atkinson, G. H. Baird, G. J. Knaggs, C. S. Cato, D. J. O'Brien, E. W. D. Hardy, D. M. Humby, H. R. Phillips, R. M. Handfield Jones, M.C., M. T. D. McMurrich, J. J. Keymes, R. C. Westlake, T. J. George, A. Ramsay, D. W. Woodruff, C. de C. B. Palmer, P. R. Trince, F. L. Napier, C. Stuart, J. A. Currell, R. W. Willcocks, H. S. Grove, L. M. Scott, W. H. O'Heffernan, J. S. Cargiven, A. G. Craig, B. W. Howell, L. Wely, H. M. Hart-Smith, A. Gilmour, G. E. Anderson, W. S. Graham, C. W. Brown, A. C. Sturrock, J. W. Macfarlane, M.C., R. S. Oldham, H. B. Jones, G. B. Macdonald, W. Fiethner-Barroff, N. S. Lucas, H. J. Flaungan, G. W. P. Maitland, J. G. Havelock, G. Mated, J. W. McDouall, H. L. de Caux, J. L. Lawry, A. Jervis, A. J. Clayton, J. H. J. Davys, G. T. Maclean, T. S. Keith, R. J. Arundell, E. C. Fawcett, F. B. Hawes, F. W. Clark, M.C., R. A. Johnston, J. M. Grier, J. L. Russell, W. J. Gib on H. B. Morgan, D. W. Anderson, A. Dewar, D. W. F. Jones, J. A. Hagerly, A. Burns, R. R. Elworthy, O.R.E., H. S. C. Hooper, F. R. Harris, H. G. Dresing, M.C., J. Miller, G. H. S. Letchworth, G. Blair, H. C. Malleston, J. Capell, J. W. Darling, M.C., D. M. Brown, A. Neilson, J. D. Laidlaw, D. M. Crichton, T. M. Crawford, M.C., T. P. Robertson, H. Barber, L. D. H. Baugh, C. W. Alford, G. R. Lipp, D. J. Mulholland. Temporary honorary Captains J. Breton-Berry (on ceasing to be employed with the Welsh Hospital, Nefes), H. J. Boulton (on ceasing to be employed at the Crowthorne War Hospital). Temporary Lieutenants and retain the rank of Lieutenant: A. W. Eadie, G. L. Lefevre, F. M. Fellows, C. A. Basker, R. Rao, G. B. Woodroffe, J. Moore, E. J. Budd-Budd, W. J. Lord.

INDIAN MEDICAL SERVICE.

Major-General C. C. Manifold, C.B., C.M.G., I.M.S., has been appointed Honorary Physician to the King in India.

Major C. O. Murison to be acting Lieutenant-Colonel while commanding No. 25 Combined Field Ambulance in the field from May 28th, 1917, to September 17th, 1917.

The following officers to be acting Lieutenant-Colonels whilst commanding medical units in the field for the periods stated: Major (now Lieut.-Colonel) N. R. J. Raimor (July 21st, 1915, to October 16th, 1915); Major H. C. Keates (July 29th, 1918, to August 20th, 1918); Major I. Cook (September 1st, 1918); Major W. H. Tucker (October 29th, 1914, to December 5th, 1916); Captain J. F. James (April 18th, 1918, to May 6th,

1918): Captain W. L. Harnett (March 5th, 1918, to March 31st, 1918); Captain H. H. Thorburn (February 17th, 1918, to April 27th, 1918); Major F. E. Wilson (January 27th, 1918, to February 16th, 1918); Major J. Masson (April 26th, 1918); Major G. W. Maconachie (June 7th, 1918); Major C. W. F. Melville (July 26th, 1918); Major A. C. MacGillchrist (March 3rd, 1917, to October 1st, 1917); Major J. J. Urwin (February 9th, 1918, to May 8th, 1918).

Major J. McA. MacMillan relinquished the acting rank of Lieutenant-Colonel on ceasing to command a medical unit in field (January 22nd, 1918).

Colonel J. Garvie has been appointed Inspector-General of Civil Hospitals and Prisons, Assam, S.p.t.

The services of Colonel H. E. Banatvala, C.S.I., K.H.S., Inspector-General of Civil Hospitals and Prisons, Assam have been placed temporarily at the disposal of the Army Department.

Majors promoted to the rank of Lieutenant-Colonel with effect from January 28th, 1919: G. P. T. Groube, E. D. W. Greig, C.I.E., W. E. McKechnie, W. F. Harvey, W. C. H. Forster, J. J. Urwin, D. McCay, A. B. Fry, D.S.O., E. C. G. Maddock, W. H. Dickinson, A. W. Tuke, G. H. Stewart.

Captain W. E. R. Williams will take seniority in his present rank from February 2nd, 1910, his previous forfeited service having been restored for good service in the field.

Lieutenant W. P. Hogh has been awarded a Bar to Military Cross and Lieutenant B. H. Singh a Military Cross for services in Mesopotamia.

Major H. H. Thorburn, C.I.E., has been placed on special duty under the Political Resident in the Persian Gulf.

Major D. M. C. Church, M.B., will take seniority in his present rank from February 1st, 1918, his previous forfeited service having been restored for good service in the field.

Lieut.-Colonel C. T. Hudson, C.M.G., has been permitted to retire from the service with effect from December 10th, 1918.

Colonel J. K. Close, I.M.S., officiates as Surgeon-General, Bengal, vice Surgeon-General W. H. B. Robinson on leave.

The following officers have returned to civil employ:—Lieut.-Colonels: R. G. Turner, J. L. Marjoribanks, J. W. Watson, P. St. C. More, E. V. Hugo, D. Kemp, H. S. Ross, H. Ainsworth, J. F. Standage, H. J. Walton, Synnons, Buist, Majors: T. G. N. Stokes, R. J. R. Tyrrell, A. C. Ingram, C. C. Murison, L. B. Scott, T. W. Harley, J. A. Crickshanks, E. J. C. MacDonald, E. Bisetti, C. E. Southon, W. O. Murphy, R. M. Dalziel, H. E. Drake, W. Lapsley, W. H. Tucker, J. C. G. Kunhardt, F. W. Cragg, M. J. Quirke, W. Gillitt, E. W. Browne, Captain R. B. S. Sewell.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Lieut.-Colonel E. C. Oridland relinquishes his commission on ceasing to be employed.

Second Lieutenant (acting Captain) L. W. Jones is transferred to the unemployed list.

The notification regarding Major L. L. Greig (Staff Surgeon R.N.) which appeared in the *London Gazette*, November 26th, 1918, is cancelled.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel P. G. Bell, D.S.O., appointed A.D.M.S., and to be acting Colonel while so employed.

Temporary Lieut.-Colonel C. P. Templeton, D.S.O., to be acting Colonel whilst holding appointment of A.D.M.S.

Temporary Lieut.-Colonel J. Hayes, D.S.O., to command No. 2 Canadian Stationary Hospital.

Temporary Captain (acting Major) F. V. Woodbury appointed A.D.M.S.

Temporary Major (acting Lieut.-Colonel) W. H. Merritt relinquishes the acting rank of Lieutenant-Colonel on ceasing to be employed at Canadian Special Hospital, Etchinghill.

Temporary Captain (acting Major) F. B. Bowman ceases to be seconded for duty with the War Office.

Temporary Captain (acting Major) G. Bouthellier relinquishes the acting rank of Major on ceasing to be employed at Canadian Special Hospital, Witley.

Captain R. D. Moyle, M.C., and temporary Captain D. H. Paterson retire in the British Isles.

Temporary Captain J. A. Murray to be acting Major while employed at King's Canadian Red Cross Hospital, Bushey Park.

Temporary Captain F. T. Campbell, M.C., to be acting Major.

Honorary Lieutenant O. P. Stensrud, M.C., to be Honorary Captain with pay and allowances of rank (substituted for *Gazette* notification, December 16th, 1918, p. 14,789, incorrectly describing rank as Honorary Lieutenant and Quartermaster).

SOUTH AFRICAN MEDICAL CORPS.

F. P. G. de Smidt, late temporary Captain, is granted the rank of Captain.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

Lieut.-Colonel H. D. Brook, from R.A.M.C.(T.F.), to be Colonel, September 1st, 1918, with precedence from June 1st, 1916 (substituted for notification in the *London Gazette* of February 25th, 1919).

ROYAL ARMY MEDICAL CORPS.

The following officers relinquish their acting rank on ceasing to be specially employed:—Majors (acting Lieut.-Colonels): A. E. Kidd, W. G. Sutcliffe, O.B.E., A. W. Moore, D. F. Todd, Captains (acting Lieut.-Colonels): F. L. A. Greaves, O.B.E., H. N. Burroughes, H. K. Dawson, D.S.O., Captains (acting Majors): R. G. Dixon, H. B. Pope, J. R. Menzies, H. B. F. Dixon, M.C., A. Anderson, R. Ellis, V. H. Wardle, V.C., J. A. Young, M.C., A. M. Davie, J. Browne, F. R. Eddison, W. J. Gray.

To be acting Lieut.-Colonels whilst specially employed: Major A. A. Milne-Thomson, C.M.G., Captain H. E. S. Richards.

Captain (acting Lieut.-Colonel) J. G. Hill relinquishes the acting rank of Lieutenant-Colonel on ceasing to command a field ambulance, and reverts to the acting rank of Major whilst specially employed, with precedence from December 20th, 1918.

Major E. L. Anderson is seconded whilst employed with the West African Medical Staff.

Captain (acting Major) A. Oliver relinquishes his acting rank on vacating an appointment as Deputy Assistant Director of Medical Services.

Captain R. P. Anderson, M.C., to be Deputy Assistant Director of Medical Services, and to be acting Major whilst so employed.

Captain H. A. P. Fairbank, D.S.O., to be Major.

Captains to be acting Majors whilst specially employed: J. G. McFarlay, W. J. T. Kimber, R. 1911a.

Captain L. C. Bruce is restored to the establishment on ceasing to hold a temporary commission in the Royal Army Medical Corps.

Captain H. E. Marsden relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

1st Eastern General Hospital.—Captain H. A. Cookson is restored to the establishment.

1st London General Hospital.—Captains (acting Majors) J. H. Thursfield and H. D. Clement-Smith relinquish their acting rank on ceasing to be specially employed and remain seconded.

2nd London General Hospital.—Captain A. S. Daly is restored to the establishment.

1st London Sanitary Company.—Lieutenant T. Edwardes to be Captain.

2nd London Sanitary Company.—Lieutenant G. T. P. Tatham to be Captain.

1st Northern General Hospital.—Lieut.-Colonel W. E. Hume, C.M.G., is restored to the establishment.

5th Northern General Hospital.—Captain T. C. Clare is restored to the establishment.

2nd Scottish General Hospital.—Major F. D. Boyd, C.M.G., is restored to the establishment on ceasing to hold a temporary commission in the A.M.S.

2nd Southern General Hospital.—Captain (acting Major) C. F. Coombs relinquishes his acting rank on ceasing to be specially employed.

3rd Southern General Hospital.—Captain G. R. Girdlestone is seconded for service with a special military surgical hospital.

4th Southern General Hospital.—Captain C. L. Lander, D.S.O., M.C., is restored to the establishment.

5th Southern General Hospital.—Captain (acting Major) J. Blackwood to be acting Lieutenant-Colonel whilst specially employed and to remain seconded.

APPOINTMENTS.

BANKS, H. Stanley, M.A., M.B., D.P.H., Medical Officer of Health for the Borough of Motherwell.

BRUCE, Oliver, M.R.C.S., L.R.C.P., Tuberculosis Officer, County of Middlesex.

MURRAY, H. Leith, M.D., Ch.B., Honorary Surgeon to the Hospital for Women, Liverpool.

STIRLING, William, jun., M.D. (Vict.), Honorary Assistant Surgeon, Manchester Royal Eye Hospital.

WHITE, Harry V., M.C., M.D. (Vict.), Honorary Surgeon, Manchester Royal Eye Hospital.

DISTRICT MEDICAL OFFICERS: E. C. Abraham, M.B., B.S. (Rugby Union), W. Dalgleish, M.B., Ch.B. (Witley Union), H. C. Wolfenden, M.R.C.S., L.R.C.P. (Burton-upon-Trent Union).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGES.

AYLWARD-GOODWIN.—On April 2nd, 1919, at St. Ethelbert's, Herringswell, by the Rev. E. H. Wright, Captain Roy Douglas Aylward, R.A.M.C., son of Dr. and Mrs. W. C. Aylward, Rushall, Tunbridge Wells, to Grace Mary Otway, daughter of Mr. and Mrs. J. D. Goodwin, Herringswell, Suffolk.

LLEWELLYN-WHIFFEN.—On April 19th, at Branksome St. Aldhelm's, by Canon McLeane, Richard Bevan Llewellyn, fifth son of Alderman and Mrs. Llewellyn, Ogmore Vale, Glamorgan, and Mabel Gordon, second daughter of Mr. and Mrs. H. J. Whiffen, of Oaklands, Ashley Road, Parkstone, Dorset.

DEATHS.

AMBLER.—On April 19th, at Harpenden, the residence of his brother-in-law, H. J. Wolfe, Esq., Horace Edward Ambler, M.R.C.S. Eng., aged 64 years, late of St. Albans and Hemel Hempstead.

STOCKER.—Reported missing, now presumed killed, March 27th, 1918, flying near Douperie, Flight Sublieutenant Edward Cuthbert Stocker, R.N., younger son and only surviving child of Major E. G. Stocker, R.A.M.C.T., and Mrs. Stocker, Carn Brea, Cornwall, aged 18½.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Special General Meeting of Fellows, Monday, 5.30 p.m. Social evening: Wednesday, 8.30 p.m., Dr. Moreland McCrea: Pitfalls of General Practice. Section of Odontology: Monday, 7.30 p.m., Casual communication by Mr. J. H. Badcock; Captain C. Ernest West, R.A.M.C.: Transplant Grafts in Ununited Fracture of the Mandible. Section of Medicine: Tuesday, 5.30 p.m., Dr. Julius Burnford: Notes on the Epidemic, with Special Reference to Pneumonia in Macedonia. Section of Obstetrics and Gynaecology: Thursday, 8 p.m., Dr. Laphorn Smith: An Obstetric Helper; Mr. Victor Bonney: High Maternal Mortality of Childbearing: the Reason and the Remedy. Section of Laryngology: Friday, Summer Congress: 10 a.m. to 1 p.m., papers by Dr. James Donelan, Dr. P. Watson-Williams, Mr. C. H. Hayton and Dr. Benians, Dr. Dan McKenzie, Dr. D. R. Paterson, Mr. J. F. O'Malley, Dr. Irwin Moore, Dr. W. H. Nelson, Dr. W. S. Syme, Dr. E. A. Peters, and Mr. W. G. Howarth: 2.30 to 4 p.m., Demonstrations by Dr. William Hill, Major H. D. Gillies and Major Secombe Hett, and Dr. Dan McKenzie; 4 p.m., Patients; 4.45 p.m., Annual meeting.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
MAY	
2 Fri.	London: Special Medical Research and Laboratory Workers Subcommittee, 4 p.m. Guildford Division, Royal Surrey County Hospital, 4 p.m.
8 Thur.	South-Eastern Counties Division of Edinburgh Branch, Annual Meeting, Baillie Memorial Hall, Newtown St. Boswells, 3 p.m.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 3RD, 1919.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he or she belongs.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

ANNUAL REPORT OF COUNCIL, 1918-19.

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Preliminary.

PRESIDENTSHIP.

1. Owing to the unprecedented circumstances of the War, our President has held office since July, 1915, when he succeeded Sir Alexander Ogston. The Council tenders to Sir Thomas Clifford Allbutt the hearty congratulations of the whole Association on the achievement of this record, and its sincere thanks for the close interest he has shown in the work and welfare of the Association. The Council feels that the Association is honoured by the continuance in its highest official post of the doyen of British medicine.

The Council recommends:—

Recommendation.—That Sir Thomas Clifford Allbutt, K.C.B., LL.D., F.R.S., be re-elected President of the Association for 1919-20.

ANNUAL MEETING.

2. The War again makes it impossible to hold the usual Annual Scientific Meeting. With much regret the Council therefore finds itself obliged to postpone still further the Annual Meeting which but for the War would have been held at Cambridge in 1915. The Meeting will be held at Cambridge in 1920.

3. The Council has arranged that the Annual Representative Meeting shall be held in London, commencing on Thursday, July 24th, at 10 a.m., preceded, on July 23rd, by the Conference of Hon. Secretaries (see para. 57). The Annual General Meeting will be held on Friday, July 25th, at 2 p.m.

4.

OBITUARY.

Roll of Honour.

Lieut. J. Carson, R.A.M.C.
Lieut. W. M. Crombie, I.M.S.
Lieut. J. Cross, R.A.M.C.
Lieut. E. P. M. Luet, A.A.M.C.
Lieut. M. J. O'Flynn, R.A.M.C.
Lieut. J. W. Senter, R.A.M.C.
Capt. G. H. H. Almond, R.A.M.C.
Capt. F. J. Ayre, R.A.M.C.
Capt. B. S. Browne, M.C., R.A.M.C.
Capt. J. Campbell, R.A.M.C.
Capt. S. Cross, R.A.M.C.
Capt. J. S. Cocks, R.A.M.C. (S.R.)
Capt. W. H. Compton, R.A.M.C.
Capt. G. R. Cowie, S.A.M.C.
Capt. J. J. Dwyer, R.A.M.C.
Capt. G. R. Ellis, R.A.M.C. (T.F.)
Capt. J. Fortune, R.A.M.C.
Capt. A. L. Gardner, R.A.M.C.
Capt. F. C. Harrison, R.A.M.C. (S.R.)
Capt. W. S. B. Hay, R.A.M.C.
Capt. H. E. Kirkland, M.C., A.A.M.C.
Capt. H. R. Lawrence, M.C., S.A.M.C.
Capt. A. G. S. Logie, R.A.M.C. (T.F.)
Capt. T. L. McClintock, R.A.M.C. (V.)
Capt. W. L. Millar, R.A.M.C.
Capt. F. A. O'Donnell, R.A.M.C.
Capt. R. N. Porter, R.A.M.C.
Capt. R. A. Preston, R.A.M.C.
Capt. A. M. Pryce, R.A.M.C.
Capt. H. E. Robinson, R.A.M.C.
Capt. K. Mc. A. Ross, R.A.M.C.
Capt. R. A. Sillar, A.A.M.C.
Capt. J. J. Sinclair, R.A.M.C.
Capt. F. O. Spensley, R.A.M.C.
Capt. J. Steel, M.C., R.A.M.C.
Capt. St. J. A. M. Tolhurst, N.Z.M.C.
Capt. J. K. Venables, M.C., N.Z.M.C.
Capt. H. P. Whitworth, R.A.M.C. (S.R.)
Capt. E. P. W. Wedd, M.C., R.A.M.C.
Capt. C. E. A. Wilson, R.A.M.C.
Major S. S. B. Harrison, M.C., R.A.M.C.
Major J. B. Metcalfe, D.S.O., M.C., A.A.M.C.
Major J. Morris, R.A.M.C. (T.F.)
Major P. T. Priestley, R.A.M.C.
Major John Proctor, R.A.M.C.
Major A. Westlake, R.A.M.C. (T.F.)
Lieut.-Col. F. H. Bradley, D.S.O., R.A.M.C.

Lieut.-Col. M.A.T. Collie, I.M.S.
 Lieut.-Col. A. J. A. Menzies, D.S.O., R.A.M.C.
 Lieut.-Col. F. W. Thomson, I.M.S.
 Col. C. M. Begg, C.B., D.M.S. New Zealand E.F.
 Col. H. G. Melville, C.I.E., I.M.S.
 Surg. L. A. Martin, R.N.
 Surg.-Lieut. W. P. Cowper, R.N.
 Surg.-Commander T. Austen, (R.N.)
 Dr. Ivor W. Joynt.
 Sir W. Henry Thompson, K.B.E. (torpedoed).

The Association has to deplore the loss of the following Members:—

Name.	Offices held.
Dr. J. Michell Clarke ...	President and Honorary Secretary Bath and Bristol Branch; Secretary and Vice-President of the Section of Medicine in 1894 and 1912; and Vice-President of the Section of Pathology, 1903.
Dr. H. B. Costobadie ...	Representative of the Bath Division at the A.R.M.
Dr. W. M. Crowfoot ...	President East Anglian Branch.
Rt. Hon. Robert Farquharson, P.C., M.D.	Joint Secretary of the Metropolitan Counties Branch; Secretary of the Section of Medicine 1876; President of the Aberdeen Branch 1898-99; and Chairman of the Parliamentary Bills Committee, 1898-1900.
Dr. F. C. Fisher ...	Representative of the West Herts Division and Chairman at time of his death.
Dr. W. T. Freeman ...	President of the Oxford and Reading Branch and Member of Central Council.
Dr. J. Sylvester Galizia ...	Hon. Secretary and Treasurer of the Malta Branch.
Dr. C. E. Glascott ...	Formerly Member of the Central Council; Secretary of the Ophthalmological Section, 1883, and Vice-President of same section 1888 and in 1902.
Dr. John Gordon ...	Ex-President of the Aberdeen Branch, recent Member of Central Council.
Dr. James Green ...	Member of Central Council and Chairman of Public Health Committee.
Dr. William Morton Harman	Ex-President of the Southern Branch and former member of Central Council.
Capt. E. A. W. Henley ...	Secretary for 14 years of the Hawkes Bay Branch of the Association in New Zealand.
Sir Philip Sydney Jones ...	A former Representative of the Sydney Branch on the Central Council, and attended Council meetings whilst in England.
Dr. James Lambert ...	Member of Council for many years of the Lancashire and Cheshire Branch.
Dr. R. A. Lundie ...	President of the Edinburgh Branch.
Mr. N. C. Maenamara ...	Formerly Treasurer of the B.M.A., and Vice-President at the time of his death.
Mr. C. Devereux Marshall ...	Secretary of the Section of Ophthalmology in 1900, and Vice-President in 1908.
Surgeon-General Thomas F. O'Dwyer, A.M.S. (retired)	A former member of the Central Council.
Dr. E. Owen Price ...	President of the North Wales Branch and Representative at the A.R.M.
Prof. R. A. Reeve, of Toronto	President of the Association at the Toronto Meeting in 1906 and a Vice-President at the time of his death.
Mr. H. Betham Robinson ...	A former Member of the Central Council; President and Treasurer of the Metropolitan Counties Branch.

Name.	Offices held.
Mr. George Rowell ...	Member and Assistant Secretary of Special Chloroform Committee; Honorary Secretary Metropolitan Counties Branch.
Prof. Robert Saundby ...	President of the Birmingham Meeting in 1911; President of the Central Council, and a former Chairman and Member of many Committees.
Dr. Wm. H. Slimon ...	Vice-President of the East Anglian Branch.
Dr. James Wilson ...	President Argyllshire and Dumbarton Division.
Dr. C. H. Wise ...	Vice-President of the Metropolitan Counties Branch and Chairman of the S.W. Essex Division.

Dr. Robert Munn Gilchrist, Dr. John Biernacki, Sir Herman Weber, Mr. Richard Favell, Dr. Charles A. Eamsonson Ring, Deputy Inspector-General J. Wm. S. Meiklejohn, R.N. (ret.), Col. S. C. Philson, A.M.S., Dr. James Miller, Dr. H. W. Arbuckle, Lieut.-Col. M. Holmes, N.Z.M.C., Dr. Frederick Lumsden Mackenzie, Dr. T. R. Beale-Browne, Dr. Malcolm Black, Dr. G. G. Stopford-Taylor, Dr. O'Connell J. Delahoyde, Lieut.-Col. Robert Gray, Dr. William Longbottom, Dr. John Robertson, Major M. C. Cariston Seton, A.A.M.C., Capt. Ernest A. W. Henley, N.Z.M.C., Dr. Wm. Barnett Warrington, Mr. Harry Blakeway, Dr. Thomas Hampton, Dr. M. Prosser James, Major T. Harold Hunt, R.A.M.C. (T.F.), Mr. John Couper, Mr. Owen Meredith Jones, Dr. Archibald S. Dick, Dr. Jeremiah Reader, Dr. Miller Semple, Dr. L. S. Lyne Liddell, Dr. Robert Trimble, Dr. Alexander Harbinson, Dr. John Cunningham, Dr. Frederick Enstace Batten, Dr. Thomas J. Dabell, Dr. Theophilus Hoskin, Dr. Frederick Fawcett, Dr. James Lambert, Surg.-Genl. Charles Plank, Dr. John Merritt Chisholm, Dr. Clara Hind, Dr. Edwin Harry Davis, Major Alexander Johnston, R.A.M.C., Dr. George Richard Chadwick, Dr. W. F. R. de Watteville, Dr. F. W. S. Davies, Mr. Stewart Henry Ronquette, Dr. James A. Shoolbread, Dr. Henry Donald Welply, Dr. Thomas Vincent de Denne, Dr. Frederick Charles Torbitt.

MEMORIAL TO MEMBERS WHO HAVE FALLEN IN THE WAR.

5. A Special Committee has been appointed to consider the question of a suitable Memorial to Members of the Association who have fallen in the War.

THE LATE CAPT. N. G. CHAVASSE, V.C., M.C., R.A.M.C.: GOLD MEDAL OF THE ASSOCIATION.

6. The Council has decided to present the Gold Medal of the Association to the nearest relative of the late Capt. Noel Godfrey Chavasse, V.C., M.C., R.A.M.C., to whom the Victoria Cross and Bar were awarded in the following circumstances:—

"Victoria Cross.—For the most conspicuous bravery and devotion to duty. During an attack he tended the wounded in the open all day, under heavy fire, frequently in view of the enemy. During the ensuing night he searched for wounded on the ground in front of the enemy's lines for four hours. Next day he took one stretcher-bearer to the advanced trenches, and, under heavy fire, carried an urgent case for 500 yards into safety, being wounded in the side by a shell splinter during the journey. The same night he took up a party of twenty volunteers, rescued three wounded men from a shell-hole twenty-five yards from the enemy's trench, buried the bodies of two officers, and collected many identity discs, although fired on by bombs and machine-guns. Altogether he saved the lives of some twenty badly-wounded men, besides the ordinary cases which passed through his hands. His courage and self-sacrifice were beyond praise."—(*London Gazette*, October 26th, 1916.)

"Though severely wounded early in the action whilst carrying a wounded soldier, Capt. Chavasse refused to leave his post, and for two days not only continued to perform his duties, but in addition went out repeatedly under heavy fire to search for and attend to the wounded. During these searches, although practically without food during this period, worn with fatigue, and faint with his wound, he assisted to carry in a number of badly-wounded men over heavy and difficult ground. By his extraordinary energy and inspiring example he was instrumental in rescuing many wounded who would otherwise have un-

doubtedly succumbed. This devoted and gallant officer subsequently died of his wounds."—(*London Gazette*, September 14th, 1917.)

MAJOR ARTHUR MARTIN-LEAKE, V.C., F.R.C.S., R.A.M.C. :
GOLD MEDAL OF THE ASSOCIATION.

7. The Council also desires to place on record the following to Major Arthur Martin-Leake, V.C., F.R.C.S., R.A.M.C., whom, as already intimated, the Council in 1915 awarded the Gold Medal of the Association :—

" *Victoria Cross*.—For great devotion to duty and self-sacrifice at Vlakfontein, February 8th, 1902, when he went out into the firing line to dress a wounded man under very heavy fire from about forty Boers only 100 yards off. When he had done all he could for him, he went over to a badly wounded officer, and while trying to place him in a more comfortable position he was shot three times. He only gave up when thoroughly exhausted, and then he refused water until other wounded men had been served."—(*London Gazette*, May 13th, 1902.)

" *Bar to Victoria Cross*.—For most conspicuous bravery and devotion to duty throughout the campaign, especially during the period October 29th to November 8th, 1914, near Zonnebeke, in rescuing, whilst exposed to constant fire, a large number of the wounded who were lying close to the enemy's trenches."—(*London Gazette*, Feb., 1915.)

The presentation of both medals will be made, it is hoped, at the Annual Meeting at Cambridge in 1920.

AMERICAN AND ONTARIO MEDICAL ASSOCIATIONS' ANNUAL MEETINGS.

8. Invitations having been received from these bodies to appoint delegates to their Annual Meetings, the Council has appointed Major-General Sir Bertrand Dawson, G.C.V.O., C.B., F.R.C.S. (T.F.), and Sir St. Clair Thomson to represent the Association at the "Victory Meeting" of the American Medical Association at Atlantic City in June, 1919, and at the Ontario Medical Association Meeting at Toronto in May, 1919, and letters have been sent to these bodies conveying the best wishes of the Association for the success of the Meetings and the admiration of the British profession for the record of the profession in Canada and the United States during the war.

Finance.

ACCOUNTS FOR THE YEAR ENDING 31ST DECEMBER, 1918.

9. The finances of the Association in the year ending December 31st, 1918, were again adversely affected by the conditions produced by the war, but there have since been encouraging indications of improvement both in respect of increase of revenue and diminution of certain expenses. For the year 1918, however, there is a deficit of £1,333 15s. 7d., but this is partly due to the policy of continuing to write off or depreciation of premises, library, plant and type; moreover, the bank over-draft has been reduced by over £500.

REVENUE.

10. The receipts from the subscriptions of members show an increase of £260 as compared with a decrease of £1,276 last year. This increase has taken place despite the fact that a large number of members were serving out of England and that the subscription they paid was £1 5s. instead of £2 2s.

11. The *Journal Account* shows an increase of £255 in spite of the decrease in the receipts from advertisements due to the onerous trading conditions and the reduced number of pages which could be made available, and in spite of the high prices which had to be paid for paper, and increases in the wages of printers and in the charges for machining the *Journal* due mainly to similar increases in wages in that department.

GENERAL ASSOCIATION AND CENTRAL MEETING EXPENSES.

12. The General Association Expenses (Abstract A) show an increase of £5,630, which is more than accounted for by the general expenses in connection with the Pratt case.

The expenses of central meetings (Abstract B) show a decrease of £155. The expenses of the Central Council increased by £86 owing to a special meeting. The Insurance Committee spent £306 more, and the Ministry of Health Committee £65 more. The Central Ethical Committee, the Central Medical War Committee, and the Scottish Committee spent less than in 1917. The expenses of the Representative Meeting were also smaller. The expenses of the Irish Committee amounted to £779, being an increase of £49 on 1917. The expenditure on the central premises was £234 more, due to the expenditure of £126 on general repairs, and an increase of £115 in rates and taxes. The expenses in printing,

stationery and postage increased by £386 owing to the increase in the postal rates and in the price of paper.

JOURNAL ACCOUNT.

13. In the last Annual Report the effect of the rise in the price of paper on the expenditure of the Association was fully set out, and the anticipation was expressed that no diminution in these charges could be expected until after the termination of the war. Early in 1918 the Council was compelled to give instructions that the number of pages in the weekly issue of the *Journal* should not exceed 64. In consequence it was found necessary to curtail not only the number of pages in the *Journal* and Supplement, but also the number devoted to advertisements. The total number of pages in each issue was divided as a rule between 30 pages of matter and 34 of advertisements. On reviewing the situation at the beginning of August the Chairman of the *Journal* Committee and the Treasurer, acting on the discretion given to them, sanctioned an increase as from August 17th to 72 pages, in an ordinary issue, divided as a rule between 32 pages of text and 40 of advertisements. The reduction in the number of pages in the weekly issue was in fact made in compliance with the regulations of the paper control and in view of the shortage of supplies. Fortunately the net effect was an economy in the expenditure on paper during the earlier part of the war, and the change made in August 17th, when the conditions had become somewhat easier, increased the revenue from advertisements sufficiently to show a net profit. Since the end of the year the conditions have still further improved and it has been found remunerative to make further increases in the number of pages in each issue. It was necessary to refuse many advertisements tendered, and the amount received from this source was, taking the whole year, £1,900 less than in 1917. The receipts in the publishing department, including sundry sales of the *Journal*, pamphlets, reprints, and the two volumes on Secret Remedies, show an increase of £2,133, owing largely to the sale of a larger number of *Journals* to non-members, and the increase, on April 16th, of the price of each copy from 8d. to one shilling. The sale of the volume entitled *British Medicine in the War* has also been a source of income.

EDITORIAL.

14. The editorial expenses show no substantial variation from the previous year except in respect of payment for contributions. The expenditure under this head has decreased by £327. This decrease was due partly to the curtailment of the number of pages in the *Journal* and partly to the absence of many contributors who were serving abroad. With the increased size of the *Journal* and the reinstatement of various departments, an increase in expenditure under this head is to be expected.

To meet the total cost of production of the *Journal*, £7,610, a little over one-fifth of the amount received from members' subscriptions has been taken from that source, as against £7,867 last year, £4,366 in 1916, £3,340 in 1915, and £11,033 in 1913, the last complete year before the war.

Estimate of Expenditure and Receipts for 1919.

15. The following figures represent an approximate forecast of the probable expenditure and revenue for the current year.

EXPENDITURE.

	£
General Association Expenses	7,000
Central Meeting Expenses	6,000
Central Premises Expenses	3,000
Printing, Stationery and Postage Expenses	1,500
Irish Committee Expenses	1,000
Central Staff Expenses	8,000
Library Expenses	500
"Journal" Account Expenses	33,000
Capitation Grants	3,000
Arrears of Subscriptions	2,500
Reduction of Premises Account	1,000
Depreciation	450

Estimated total expenditure, 1919 .. £66,950

Estimated surplus, 1919 4,550

£71,500

REVENUE.

	£
Subscriptions	40,000
Investments and Rents	2,500
Advertisements	23,000
Sundry Sales of "Journals," etc.	6,000

£71,500

British Medical Association.

BALANCE SHEET, 31ST DECEMBER, 1918.

(Extracts from the Financial Statement contained in the Annual Report of the Council, 1918-19.)

Dr.			(Extracts from the Financial Statement contained in the Annual Report of the Council, 1918-19.)			Cr.									
LIABILITIES.			1918.			ASSETS.			1918.						
			£	s.	d.	£	s.	d.							
To Subscriptions paid in advance	1,161	17	7				By Subscriptions in arrear	...	...	4,151	7	4	
„ Advertisements ditto	994	11	0	2,156	8	7	„ Advertisements	...	...	3,065	10	1	
„ Contributions...	161	6	0				„ Sundry Sales	...	...	634	3	3	
„ Engraving	40	5	4				„ Furniture and Fittings	...	...	208	18	1	
„ Printing Journal	1,462	0	0				„ Library	...	...	1,594	2	1	
„ Paper for Journal	2,684	3	6				„ Plant and Type	...	...	414	6	1	
„ Miscellaneous Printing	971	2	5				„ Paper Stock	...	...	5,303	2	2	
„ Stationery	252	18	2				„ Accrued Rent...	...	...	412	10	1	
„ Repairs	53	18	8				„ Cash at Office...	...	...	121	17	1	
„ Legal Charges	360	0	3										
„ Rates and Taxes, Insurance and Electricity	600	0	11				„ INVESTMENTS—						
„ Plant and Type	11	19	4				„ Freehold—429, Strand, Agar Street, and Harvey's Buildings	...	126,516	6	9		
„ Coke	15	0	0				„ Less amount written off	...	1,000	0	0	125,516	6
„ Sundries	1	17	6				„ £3,200 Bank of England Stock @ 222½	...	7,123	0	0		
„ Library Books	42	5	9				„ £6,400 Midland Railway Consolidated 2½% Perpetual Guaranteed Preferential Stock @ 50½	...	3,216	0	0	10,344	0
„ Repairs and Hire of Typewriting Machines	28	5	0										
„ Irish Committee	207	6	3										
						6,892	8	11	„ Exhibition Account—Cash at Bank	...	58	8	11		
„ Bank Overdraft				8,506	10	11	„ „ „ Cash in hand	...	0	7	5	58	16
„ Exhibition Account Reserve per contra													
Total Liabilities															
Surplus Account—															
Balance on January 1st, 1918	135,544	13	3				(The above Assets do not include the unexpended Balances of Capitation Grants held by the various Branches.)						
Less Excess of Expenditure over Income for 1918 brought from Revenue Account	1,333	15	7										
Balance, being total of Excess of Assets over Liabilities						134,210	17	8							
						£151,825	2	5							£151,825 2

REVENUE OR PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING 31ST DECEMBER, 1918.

	1917.			1918.				1917.			1918.		
	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
General Association Expenses*	2,133	5	2	7,763	6	11	Subscriptions	35,972	0	7	36,232	5	
Central Meetings Expenses*	8,504	4	8	8,349	19	11	Journal Account, Total Receipts*	24,338	13	10	24,573	14	
Central Premises Expenses*	2,504	0	4	2,738	4	4	Interest on Investments	394	5	8	407	17	
Central Printing, Stationery, and Postage							Rent received and accrued... ..	2,189	16	4	2,209	3	
Expenses*	1,162	2	5	1,548	9	1	Appreciation in Investments	—			872	0	
Central Staff Expenses*	6,794	16	11	6,672	12	1	Returned Scientific Grants	—			10	0	
Library Account*	460	17	10	477	17	11							
Journal Account Expenses	32,206	0	10	32,184	5	0							
Grant to Irish Committee and amount due*	750	0	0	707	6	3							
Grant to Scottish Medical Service Emergency Committee	50	0	0	—									
Capitation Grants to Branches	1,976	14	6	1,861	12	0							
Subscriptions written off for Deaths	142	18	6	166	10	6							
Arrears written off	1,803	1	8	1,869	8	4							
	£58,594	2	11	£64,338	16	4							
Written off for Depreciation of Premises	1,000	0	0	1,003	0	0	Excess of Expenditure over Income carried to Balance Sheet	—			1,333	15	
Library—Written off towards Depreciation	200	0	0	200	0	0							
Furniture and Type—Ditto	250	0	0	100	0	0							
Balance of Income over Expenditure—Carried to Balance Sheet	2,841	13	6	—									
	£62,885	16	5	£65,638	16	4							

Having examined the Balance Sheet, dated 31st December, 1918, and Accounts with the books and vouchers of the Association except as regards the Irish Committee Account, and having received all the information and explanations we have required, we report that the Balance Sheet is, in our opinion, properly drawn up so as to exhibit a true and correct view of the state of the affairs of the Association according to the best of our information and the explanations given to us and as shown by the books of the Association.

We have verified the Investments of the Association on General Account and on account of the Trust Funds shown and of the Office Staff Superannuation Fund, and we have verified the possession by the Bankers of the Association of the Deeds of the Freehold Property.

G. E. HASLIP, M.D.,
Treasurer.

W. E. WARNE,
Acting Financial Secretary and Business Manager.

PRICE, WATERHOUSE & CO.,
3, Frederick's Place, Old Jewry, London, E.C.,

8th April, 1919.

Apportionment of Member's Subscription.

16. The following tables show how the subscription of a Member was apportioned towards defraying the expenses of the Association for the year ending 31st December, 1918:—

	£	£	s.	d.
General Association Expenses ...	7,763	0	7	9
Central Meeting Expenses ...	8,349	0	8	5
Central Premises Expenses ...	2,738	0	2	10
Central Printing, Stationery and Postage Expenses ...	1,548	0	1	8
Central Staff Expenses ...	6,672	0	6	9
Library Account ...	477	0	0	9
"Journal" Account Expenses ...	7,484		8	1
Grant to Irish Committee ...	707	0	0	7
Capitation Grant to Branches ...	1,861	0	1	9
Written off Premises, Investments, Plant and Type ...	1,300	0	1	3
Subscriptions written off ...	2,035	0	2	2
		£2	2	0

Central Medical War Committee.

17. The Committee re-appointed Mr. T. Jenner Verrall, LL.D., Chairman, and appointed Mr. E. B. Turner and Dr. T. W. Shore, Vice-Chairmen. Dr. C. Buttar was appointed Chairman of the Executive Sub-Committee; Dr. T. W. Shore, Chairman of the Local Arrangements Sub-Committee; and Dr. Adam Fulton, Chairman of the Demobilisation Sub-Committee. Later, the three Sub-Committees were superseded by the appointment of a General Purposes Sub-Committee, with Dr. Verrall as Chairman and Dr. Buttar as Vice-Chairman. Mr. N. Bishop Harman and Dr. Alfred Cox were re-appointed Secretaries of the Committee.

QUESTION OF PUBLICATION OF REPORT OF COMMITTEE ON ENQUIRY IN FRANCE.

18. The Central Medical War Committee considered the following Minute 32 of the A.R.M. 1918, referred to it:—

Minute 32.—Resolved: That the Representative Meeting, in view of the feeling that the services of the medical men in the Army are not fully utilised, urges the necessity of giving the Central Medical War Committee and the Scottish Medical Service Emergency Committee access to the Report of the Commission of Enquiry in France.

19. The Committee came to the conclusion that this was a matter for action by the Association, and also intimated to the Chairman of Representative Meetings its opinion that the non-publication of the Report of the Committee of Enquiry strengthened the prevalent suspicion as to whether the number of men being asked for by the Army Medical Service was not extravagant, and as to whether proper use was being made of those already in the Service. A letter was accordingly sent by the Chairman of Representative Meetings in August 1918 to the Army Council on the subject, quoting Minute 32 of the A.R.M. 1918, and giving a detailed statement of the reasons on account of which publication of the report was deemed necessary. To that letter the following reply, dated September 10th 1918, was received:—

"I am commanded by the Army Council to acknowledge the receipt of your letter of the 19th ultimo, forwarding a resolution of the Representative Body of the British Medical Association urging the necessity of giving the Central Medical War Committee and the Scottish Medical Service Emergency Committee access to the Report of the Commission of Enquiry on Medical Establishments in France.

The Council have no doubt that the Minister of National Service, under whom the Tribunals referred to are working and undertaking most important national work, frames his instructions to them in the light of any useful advice and information which the Commission referred to have given in their Report.

They will be glad if you will explain to the Representative Body that Military reasons with other considerations make it desirable that the Report in question should at present remain a confidential document."

20. Sir James Galloway informed the Committee that the Ministry of National Service had pressed the Cabinet to publish the Report, and that, though this had been refused, he was sure that the Professional Committees would be able to get information as to the parts of the Report which specially

concerned them such as would satisfy them, inasmuch as the Report was being circulated to the Advisory Board of the Ministry of National Service, on which each of the Professional Committees was represented. Sir James Galloway also gave his personal assurance that many of the recommendations contained in the Report had been adopted. Dr. Verrall and Mr. Turner, the Representatives of the Committee on the Board, subsequently reported that the Report was very fully discussed by the Board.

MEDICAL WOMEN EMPLOYED BY THE WAR OFFICE.

21. The Committee considered the following Minute 36 of the A.R.M., 1918, referred to the Committee:—

Minute 36.—Resolved: That this Representative Meeting instructs the Council to enquire into the conditions under which medical practitioners are serving with His Majesty's Forces, and should it be found that the conditions under which women are serving therewith are in conflict with the policy of the Association that no distinction be made on the ground of sex as regards the emoluments to be paid to women practitioners, to take steps to give that policy effect;

and came to the conclusion that as the conditions under which medical men and women were serving were not identical, the question of any distinction in emoluments did not arise (see, further, paragraphs 193-197 of this Report).

PROVISION OF MEDICAL MEN FOR THE SERVICES.

22. During the summer and autumn of 1918 the continued demands for medical men for the Services placed a strain upon the resources of the profession which the Committee found itself quite unable to meet without facing the prospect of recourse to substitution. An assessment was therefore made on many of the Local Medical War Committees in respect of (1) men remaining in civil practice who could in the opinion of the Central Committee be spared by the distribution of their work amongst their neighbours, and (2) those men who could only be spared if a whole-time substitute were provided. The difficulties of the situation were increased by the decision of the War Office to accept only Grade I. men of less than 46 years of age. The Committee found the problems connected with this question of possible compulsory substitution exceedingly difficult. The Committee, however, formulated a scheme to provide for such substitution, and circulated it to the Local Medical War Committees, but fortunately the intervention of the Armistice rendered it unnecessary to go further with it.

DEMOBILISATION.

23. As already reported (para. 198 of Supplementary Report 1917-18), the Committee was, in the summer of 1918, given to understand that it was proposed to deal with the general demobilisation of doctors at the end of the War by an Inter-departmental Committee. As a result of repeated requests by the Committee that it should be represented on the Inter-departmental Committee, the Committee was asked to nominate two representatives to attend when invited. Drs. Verrall and Buttar were appointed, Dr. Cox also being invited to attend with them. The Interdepartmental Committee met on November 11th, 1918, the day on which the armistice was signed, when it was decided that a limited number of medical officers should be released during the next few weeks to meet urgent civil needs, and that the men to be demobilised on these grounds should, so far as general practitioners in England and Wales were concerned, be nominated by the Central Medical War Committee.

24. Each Local Medical War Committee was at once communicated with on the subject, and as a result of the joint work of the Central and Local Committees some 900 doctors were soon returned to their practices.

25. Subsequently the Ministry of National Service accepted the scheme of general demobilisation prepared by the Committee in respect of England and Wales, published in the *British Medical Journal* and *Lancet* of January 11th, 1919. It was in January, 1919, impossible to state when general demobilisation would begin, but the Committee, recognising the great importance of the subject, thus took every possible step to have ready a fair and proper procedure.

26. Delay in commencing general demobilisation caused difficulties analogous to those which occurred in connection with the demobilisation of the soldier. Some medical officers in the Army who had served since the commencement complained that younger men were being released before them, while others complained that they were being demobilised at the request of their Local Committees without any consultation of their personal wishes. In these circumstances the Committee attempted to explain to those who thought they had a

grievance, why it was impossible that the limited demobilisation on grounds of urgent requirements of the community should follow the lines of general demobilisation.

27. On November 13th, 1918, two days after the Armistice was signed, the Committee met and decided to suspend all tribunal business. A General Purposes Sub-Committee was appointed, to consider such matters of principle as arose; to act as an Executive Sub-Committee; to deal with questions of demobilisation; and to report periodically to the Committee. The scheme of demobilisation was operated for some weeks, but came to an end, as detailed in the following paragraph.

SUSPENSION OF THE WORK OF THE COMMITTEE.

28. At its meeting on March 21st, the Committee received the following letter from the Ministry of National Service:—

March 19th, 1919.

Sir,

I am directed by the Minister of National Service to inform you that, in view of the fact that a more general demobilisation of medical officers from the Royal Army Medical Corps is now understood to be imminent, it has been decided to discontinue the functions of this Ministry in the selection and nomination of medical officers for release by the Service Departments concerned. This decision will take effect as from the 1st April next.

It follows that such responsibility as this Ministry has hitherto undertaken in regard to the safeguarding of the Medical Service throughout the country and which it has been able to exercise by means of its powers and functions in connection with the demobilisation of medical officers will cease on the same date.

You will appreciate that this decision does not affect the position of your Committee as a Medical Tribunal as long as the Military Service Acts and the Military Service (Medical Practitioners) Regulations, 1918, remain in force. Steps are being taken to terminate on or about the same date the arrangements which have been in force in regard to secretarial and clerical assistance.

I am, Sir,

Your obedient Servant,

(Sgd.) GEORGE CHRYSAL.

The Chairman,

Central Medical War Committee.

29. It was reported to the Committee that the Committee of Reference had decided to adjourn *sine die*, but to hold itself in readiness to render assistance in connection with the medical staffing of the Armies of Occupation, should this be asked for by the Government.

30. The Scottish Medical Service Emergency Committee reported that, notwithstanding the modification of procedure connected with the demobilisation of medical officers of His Majesty's Forces, it proposed to continue to discharge its functions in the interests of the public and of the medical profession in Scotland.

31. The Committee came to the conclusion that it could no longer take any responsibility in regard to demobilisation of medical officers, seeing that this would henceforward be carried out by the Military Authorities themselves solely on grounds of military expediency. It resolved therefore to adjourn *sine die*, giving power to the Chairman to call meetings of the General Purposes Sub-Committee if and when it might be found necessary to do so.

32. A statement was issued to the Local Medical War Committees and the *British Medical Journal* and *Lancet* quoting the above letter, stating the position of the Committee, and informing the profession that the Committee would still endeavour to give whatever assistance was possible to members of the profession who had served, and any assistance that might be desired by the authorities, though it could no longer influence the procedure of demobilisation.

POSSIBILITIES OF GIVING ASSISTANCE TO DOCTORS RETURNING TO CIVIL LIFE: POST-GRADUATE COURSES.

33. During the year the question of giving assistance to doctors returning to civil life became of urgent practical importance. Apart from the question of priority of release, questions of a more distinctively professional and also of a financial character arose, inasmuch as some men required assistance to re-establish themselves in practices which had suffered by their absence, while the younger men required advice and assistance in establishing themselves in the various forms of practice open to them. The experience of the Committee has been that, however unpromising the outlook at first, the men who have practices to return to find that within a comparatively short time their work returns to them, and that

which is surprising. None the less, it is found that a considerable number of men require financial assistance during the first few months after their return, when their Army pay has ceased and little or no money is coming in from their practices.

34. The Committee accordingly conferred with representatives of the various funds upon which Medical Officers could be said to have a claim, viz., the Military Service (Civil Liabilities) Department, Professional Classes War Relief Council, Officers Families Fund, the War Emergency Fund of the Royal Medical Benevolent Fund and the National Relief Fund. At the conference held on the subject on December 17th, 1918, a representative of the Appointments Department of the Ministry of Labour also attended, as upon that body rests the responsibility of looking after the interests of the men who have served, whether as officers or men, provided they have attained a certain educational standard. As a result of careful consideration of the whole matter, the Committee drew up and published in the *B.M.J. Supplement* of March 1st, 1919, under the heading "Medical Resettlement," a statement of the various methods which it had adopted to promote the interests of doctors who had served, including establishing for them a prior claim on military and pensions work, and also informing those who required financial assistance of the sources from which it might be obtained.

35. Acting on suggestions made by demobilised officers, the Committee suggested to the Ministry of Labour that the Government should arrange for short "refresher courses" for officers who desired to take them, paying the cost of such courses and either retaining the officers on full pay during the course or making an allowance for maintenance. The suggestion was sympathetically received. No official pronouncement has been forthcoming in spite of repeated enquiries addressed to the Ministry, but the Committee has unofficially been given to understand that the funds at the disposal of the Ministry for similar purposes could not be used for the assistance of officers who had a professional qualification, and could thus at once commence to earn their living without further training.

SPECIAL DIFFICULTIES CREATED BY THE INFLUENZA EPIDEMIC.

36. The influenza epidemic caused the Committee much anxiety and additional work, falling as it did with great violence on a community depleted by the demands of the Army of its medical man-power to an extent which in many areas was dangerous. The appeals for assistance were numerous and pressing, and all kinds of expedients had to be used by the Committee. The names of men whose appeals had been refused by the Medical Tribunal, and who were due to report for service, were withheld from the War Office. An arrangement was made with that Office whereby the Secretaries of Local Medical War Committees could obtain assistance, wherever available, from the nearest barracks or camp. This source of supply was, however, seriously curtailed by the fact that influenza was as prevalent among the soldiers as among the civil population. On request, the Board of Education allowed its School Medical Officers everywhere to drop their school inspection work for the time being. These officers were thus made available for general medical work, and in several districts gave valuable assistance. Every available locum-tenent was drawn upon. Finally, the supply of locum-tenents was augmented by an arrangement with the War Office whereby a limited number of R.A.M.C. officers were offered early demobilisation on consideration of their agreement to place themselves at the disposal of the Ministry of National Service for locum-tenent work for a period of not more than three months. Leave was obtained for a considerable number of R.A.M.C. officers who were known to be on home service.

37. The Committee desires to place on record its opinion that the community is very greatly indebted to the Local Medical War Committees for the way in which they dealt with a grave and unparalleled emergency.

FEES FOR PENSIONS BOARDS.

38. Complaints were received from a certain number of Pensions Boards, chiefly in the North of England, as to the inadequacy of the fee at present paid, viz., £1 1s. per session, not to exceed 2½ hours. Enquiries were made of all the Local Committees as to whether they were in favour of a demand for an increase even though this might encourage the setting up of whole-time Boards, and the question was taken up with Sir James Galloway, who has in the past made the arrangements on behalf of the Ministry of Pensions. Eventually the following recommendation was made to him, which it is understood is now under consideration by the Ministry of Pensions:—

That the fee paid to members of Local Pensions Boards be £1 11s. 6d. per session for a maximum of four sessions per week, and £1 1s. per additional session if the number

DISPOSAL OF SURPLUS MEDICAL AND HOSPITAL MATERIAL.

39. Representations have been made to the Ministry of Munitions that doctors who have served should be allowed to purchase at reasonable prices the instruments and other medical and surgical material which will now be "surplus to requirements." At an interview the representative of the Committee was informed that it had been intended to sell this material back to the firms which had supplied it, because these firms were of opinion that if it was sold to the profession and to the hospitals, an acute labour difficulty might be caused in their trade by the shortage of work which would probably last for the next two or three years. The representative of the Department indicated, however, that they might be disposed to allow doctors who had served to buy at the same price as the firms, with the reservation that the Department could not deal with the individual. It might be prepared to take bulk orders if the Committee or the B.M.A. would collect the orders and the money, and send in the orders and cash in bulk; the Department would pack and dispatch the goods to the individual. No official decision is yet forthcoming.

40. The British Hospitals Association, acting on the suggestion of the Committee, is endeavouring to make a similar arrangement on behalf of civil hospitals which have been doing military work.

THANKS OF THE GOVERNMENT AND OF THE MINISTRY OF NATIONAL SERVICE.

41. The Chairman has received the following letter from Sir Auckland Geddes.—

24th March, 1919.

Dear Dr. Verrall,

Now that the functions of the Ministry of National Service are terminating, I wish to express to you my high appreciation of the services which the Central Medical War Committee and its Local Medical War Committees have rendered in association with my Medical Department. These services have been continuous and often arduous, but they have been of very real value and assistance to the work of the Ministry.

I have always felt that through the Central Professional Committees with their local organisation, my Medical Department has been able to keep in touch with the medical situation throughout the country, and with the needs and views of the profession itself in a manner which has greatly facilitated its administrative work.

I shall be grateful if you will convey my own personal thanks and the thanks of the Government to the Members of the Central Medical War Committee, and also to the Local Medical War Committees throughout England and Wales for the important national work which they have done.

Yours truly,

(Signed) A. C. GEDDES.

This letter was published in the medical journals and forwarded to the Local Medical War Committees, together with a cordial expression of thanks from the Committee to those bodies for the way in which they have supported the Central Committee in its work during the past four years.

THANKS OF THE COMMITTEE.

42. The Committee has placed on record its gratitude to Dr. Verrall for his services in the Chair from the commencement of its work. It also accorded a hearty vote of thanks to Drs. Buttar and Shore, the Chairmen of the Executive and Local Arrangements Sub-Committees, for their services to the country, to the profession and to the Committee.

Organisation.

GROUPING OF BRANCHES AND CONSTITUENCIES FOR ELECTION OF MEMBERS OF COUNCIL.

43. Under By-laws 46 (a)-(c) and 47, the grouping of Branches and Constituencies for election of Members of Council is a matter for the Representative Body. The Council yearly submits to the A.R.M. recommendations as to the grouping for election of the 24 and 7 Members, respectively, of the Council which comes into office at the close of the A.R.M. of the following year. Similarly, it was previously the practice of the R.B. to determine the grouping of Constituencies for election of the 12 Members of the Council (By-law 46 (c)). In 1915, however, it was proposed that the whole question of the grouping of the Home Branches for election of the Council should be reconsidered, but in the event it was found impossible to deal satisfactorily in War time with so contentious a subject. With a view to the proposed reconsideration of the general question of grouping,

the R.B. in 1915 left the settlement of the grouping for election of the 12 Members of Council for 1916-17 to the Council, a course since adopted yearly.

44. The Council considers that it would be advantageous, as saving the time of the R.B. and a certain amount of printing, if the R.B. delegated by Standing Order to the Council, with proper safeguards, the duty of deciding the groupings.

The Council recommends:

Recommendation.—That the R.B. adopt the following S.O.:

Until further order of the R.B., the Council is hereby empowered to prescribe the groupings of the Branches and Divisions for the purpose of the election of Members of the Council by Branches and Divisions and Representatives of Constituencies under By-law 46 (a)-(c), provided that the Council shall not be empowered to make without the consent of the R.B. any change in the numbers of Members of Council at present allotted to the parts of the U.K., viz., 16 to England and Wales, 4 to Scotland, and 4 to Ireland under By-law 46 (a), and 8 to England and Wales, 2 to Scotland and 2 to Ireland under By-law 46 (c).

GROUPING OF DIVISIONS FOR ELECTION OF REPRESENTATIVE BODY, 1919-20.

(a) Home Divisions.

45. The Council has provisionally grouped the Home Divisions in Constituencies for election of Representatives, 1919-20, in the same way as for 1918-19, except that Isle of Wight Division has been grouped with Southampton Division; and has authorised the Organisation Committee finally to decide the grouping on publication of the 1919 Annual List of Members.

46. The Council desires to draw the special attention of Members to the fact that under By-law 35 it is entirely within the power of Constituencies to elect their Representatives by postal vote.

(b) Oversea Divisions.

47. The Council has made each Oversea Division and Division-Branch an independent Constituency in the R.B.

REPORTS OF DIVISIONS AND BRANCHES FOR 1918.

48. Gratifying Reports have, in spite of the difficulties due to the War, been received from the majority of Divisions and Branches. The Reports continue to show improved co-ordination, financial and otherwise, between the Divisions and Branches, leading to increased efficiency of work, as well as to the best use and economy of the funds of the Association. It is, however, necessary to call attention to the inactive condition of some Divisions whose affairs have been allowed to lapse to the great detriment of the local profession and of the Association generally.

MEMBERSHIP.

49. The following is a statement of the changes in the membership during the year December 31st, 1917, to December 31st, 1918:—

1917.		1918.	
New members	2,766	New members	703
Arrears paid	86	Arrears paid	147
	2,852		850
Resignations	437	Resignations	251
Deaths	271	Deaths	272
Arrears	254	Arrears	593
Expelled	1	Expelled	3
	963		1,119
Increase	1,889	Decrease	269

(Membership, December 31st, 1917 ... 22,334)
(Membership, December 31st, 1918 ... 22,065)

50. The War conditions have naturally interfered with the recruiting of the ranks of the Association just as they have affected the memberships of the majority of other voluntary bodies. On March 31st 1919 the net membership had increased to 22,812.

51. During the past two years an active propaganda campaign has been instituted. A circular has been addressed each year to non-members, setting forth briefly the advantages of membership and the more important work done by the Association during the past year. The results have been very satisfactory and may be expected to be still more so when demobilisation has taken place and the doctors now serving settle down in practice. Other means have been taken for bringing home the work of the Association to those who have not yet joined it, and the matter is in the hands of an active Standing Sub-Committee.

VISITATION OF DIVISIONS AND BRANCHES.

52. Before the War the Council had decided that an effort should be made to have each Division visited by a member of the Central Staff at least once in two years, but this ideal has of course been impossible of realisation. Now that things are returning to a more normal state this work of visitation, to which the Council attaches great importance, has been taken up, and a number of such visits have already been paid and many more are being arranged.

LISTS OF MEMBERS.

53. The Council has arranged that there shall be 4 issues yearly of the membership lists of the Divisions and Branches to the Honorary Secretaries, together with complete local lists of non-members, and that there shall in addition be sent in May to each Honorary Secretary a copy of the complete membership list of the Association.

ORDINARY GRANTS TO BRANCHES.

(a) *Home Branches.*

54. The Council is making grants for 1919 of from 6d. to 4s. per Member to those Home Branches which require grants and have furnished satisfactory Reports for 1918.

(b) *Oversea Branches.*

55. Grants to Oversea Branches are being made at the usual rate of 4s. per Member who has paid the subscription for the year, and 2s. per Member, elected after June 30th, who has paid half the subscription.

SUPPLEMENTARY GRANT TO METROPOLITAN COUNTIES BRANCH.

56. In view of special work being done by the Metropolitan Counties Branch and its Divisions, the Council has made the Branch a supplementary grant of £500, equivalent to about 4s. 8d. per Branch Member.

CONFERENCE OF HON. SECRETARIES OF DIVISIONS AND BRANCHES.

57. The Annual Conference of Hon. Secretaries of Divisions and Branches, 1919, will be held at 429, Strand, on Wednesday, July 23rd (*i.e.* the day before the commencement of the A.R.M.). The Medical Secretary will open a discussion on current topics of interest to Secretaries, and the Chairman of Representative Meetings will deal with the pressing and important question of the possibility of bringing the Division areas into closer geographical relations with the Local Government areas.

Hon. Secretaries are invited to give notice of matters they desire should receive consideration.

STATUS OF INDIVIDUAL MEMBER IN MANAGEMENT OF AFFAIRS OF ASSOCIATION.

58. It has come to the knowledge of the Council that some non-members of the Association have formed the impression that the individual Member has little or no voice in the conduct of its affairs, especially when, as was sometimes the case under the War conditions, unable to attend a Division Meeting or record his or her vote by post.

59. The Council therefore wishes to emphasise the fact that there are few if any similar bodies in which the individual Member has greater power to influence the affairs and policy of the Organisation if he or she cares to take the trouble.

60. In this connection the Council wishes to point out that a Division or any three Members in a group of Branches have full power to nominate Members for election to the Council, and that a Division, Branch or Constituency has power, by Rule or resolution as the case may be :—

To enable any Member of the Constituency to nominate by post (i.) a Member for election as Representative, (ii.) a Member for election as Deputy-Representative ;

To enable any Member of the Division to nominate by post a Member for any Division office, including a representative of the Division on the Branch Council ;

To enable any three Members of the Branch to nominate by post a Member for any Branch office ;

To elect the Division or Branch Office-bearers either by postal vote or General Meeting.

MEMBERSHIP OF BRANCH COUNCILS.

61. Some of the Branches already provide in their Rules that the Hon. Secretaries of the Divisions shall be Members *ex-officio* of the Council of the Branch. The Council urges that Branches which have not yet adopted this plan, should modify their Rules to effect it, as the presence of the Hon. Secretary of the Division on the Branch Council is a simple but extremely useful way of co-ordinating the work of the Division with that of the Branch.

RULES OF ORGANISATION.

62. 138 of the 207 Home Divisions, and 38 of the 41 Home Branches, now have officially recognised Rules of Organisation. Every Division and Branch should be in possession of such Rules. Each Home Division and Branch which has not yet adopted Rules of Organisation is urged to apply to the Medical Secretary for the Model Rules, with a view to their adoption.

THE PROFESSION AND THE QUESTION OF TRADE UNIONISM.

63. In February, 1919, there was held in London, and attended by some 300 practitioners, a meeting called by an outside body advocating organisation of the profession on a trade union basis. No explanation was however offered as to how one form of voluntary organisation could be more capable than another of holding the profession together, and the assumption that the Government or the public would be more likely to heed the wishes of a body simply because it called itself a trade union, was not supported by any valid argument.

64. The question of the profession and trade unionism has been several times considered by the Association and the idea rejected by large majorities. The Council has recently taken the advice of Mr. Gore Browne, K.C. and Mr. H. H. Slesser, standing Counsel to the Labour Party, on the subject. Their opinion confirms emphatically the advice previously received, namely, that the profession has little or nothing legally to gain by trade union organisation, even if there did not exist the deep-rooted opposition entertained by large numbers of the profession to the idea of the application of trade unionism to medicine. The Council proposes to print this opinion in an early number of the *Journal* and send it to every non-member of the Association.

65. Quite apart from any legal question, it appears to the Council that those who are inviting members of the profession to join new organisations are undertaking a great responsibility in face of the facts (a) that the Association already has a strongly established position ; (b) that it would take many years to build up a body with anything like the same membership, especially in face of the strong opposition of the Association ; and (c) that the bodies which stand to gain by the controversy are those bodies, whether Government Departments or other employers of medical practitioners, who would naturally take advantage of the confusion arising as to which organisation could be said to speak for the profession. The Council therefore strongly deprecates the formation of other bodies professing to speak in the name of the profession, and urges Members of the Association to give no countenance to such movements.

HANDBOOK OF THE ASSOCIATION.

66. In view of the difficulties as regards staff, paper and printing, the Council has decided that the next issue of the Handbook will be for 1920, which it is hoped to publish about November, 1919. Thereafter, conditions are expected to have returned sufficiently to the normal to enable the issues to be yearly as originally intended.

HISTORY OF THE ASSOCIATION.

67. The Council has arranged for the preparation of a History of the Association, such as will keep prominently before the minds of Members the work accomplished by the Association, and the great influence it has had in moulding the conditions of professional work both by legislation and otherwise.

ORGANISATION OF MEDICAL STUDENTS.

68. Owing to the dislocation resulting from the War the Council has not been able to take action on Min. 110 of the A.R.M., 1918, as to the organisation of medical students, but the matter is noted for early attention.

Science.

SPECIAL CLINICAL AND SCIENTIFIC MEETING, APRIL 1919.

69. The presence in the United Kingdom of large numbers of Members and other practitioners from all parts of the British Dominions and from Allied Nations offered valuable opportunities both in connection with matters arising directly out of the War and otherwise. The Council therefore arranged for a Special Clinical and Scientific Meeting to be held in London from April 8th to 11th, 1919, inclusive, with Sir Clifford Allbutt, K.C.B., LL.D., F.R.S., President of the Association, as President of the Meeting. Owing to the kindness of Sir Alfred Keogh, G.C.B., Rector of the Imperial College of Science and Technology, the sections were held in the College.

70. The arrangements for the Meeting were made by a Committee appointed by the Council for the purpose, with

Sir Clifford Allbutt as Chairman. It included the Presidents of the Royal Colleges of Physicians and Surgeons in London; Sir William Osler, Regius Professor of Medicine, Oxford; the Directors-General of the Medical Departments of the Royal Navy, of the Army Medical Service, of the Army Medical Services, France, and of the Canadian Army Medical Service, the Directors of Medical Services of the Australian Imperial Force and of the New Zealand Expeditionary Force, the Deputy Director Medical Services, South African Overseas Forces, the Medical Adviser to the Secretary of State for India, the D.M.S. Royal Air Force, and the Liaison Officer of the U.S.A. Medical Corps.

71. The Meeting was held in 3 sections, viz., Medicine, Surgery, and Preventive Medicine and Pathology.

72. In connection with the Meeting a Reception was held by the President of the Association and the President of the Metropolitan Counties Branch, by which the Reception was given, on April 8th, at the Guildhall, kindly lent by the Lord Mayor and Corporation of the City of London; a Conversation was given by the Royal Society of Medicine on April 9th; and a Dinner was held at the Connaught Rooms on April 10th. An Address by the President to the Meeting on "The New Birth of Medicine," was published in the *British Medical Journal* of April 12th, pages 433-8. A popular lecture on "A Casualty Clearing Station at Work" was given on April 9th in the Queen's Hall by Major-General Guthbert Wallace, C.B., C.M.G., when the Chair was taken by Sir John Goodwin, K.C.B., Director-General, Army Medical Service. On April 9th the President of the Royal College of Surgeons held a Reception at which there was an exhibition of Hunterian and Listerian relics. On April 10th there was a Reception by the President and Officers of the Royal College of Physicians, followed by a Lunnian Lecture by Sir H. D. Rolleston on cerebro-spinal fever. The President gave a dinner, on April 9th, to a number of those concerned in the organisation of the Meeting, and the Editor of the *Lancet* invited a number of those connected with the Meeting to luncheon on April 11th.

All the functions were great successes, and it is felt that the Meeting has been fruitful both as regards strengthening the ties between Members of the Association and of the profession throughout the English-speaking world, and helping the advancement of medical science and public health.

73. A short record of the proceedings of the Meeting will be found in the *British Medical Journal* of April 12th, 19th and 26th, 1919. A fuller record is being published in a separate volume, which will also contain much additional matter of special interest to those who have served in the War. Copies of the volume will be forwarded to those who attended the Meeting, whose addresses are known, and to all Members of the Association, and it will be put on sale for non-members.

The warm thanks of the Council are due to all those who, directly or indirectly, helped in the organisation and work of the Meeting.

MEDICAL OFFICERS OF THE ALLIED FORCES.

74. The Council considered the instruction of the A.R.M., 1918 (Minute 112), that in view of the influx of American and other Oversea medical officers to the British Isles, the Council should consider whether these gentlemen might obtain temporary membership of the Association or any other kind of hospitality that might be practicable. As may be remembered, the Council had already made in 1917, and intimated to the proper official quarters, arrangements whereby medical officers of the Dominions and United States were welcomed to the Library.

75. As a result of the instruction of the A.R.M., the Council, by notices published periodically in the *Journal*, invited medical officers attached to the Forces of the Dominions or the United States to make use of the Central Office, including the Library, and to get in touch with the Honorary Secretaries of the Divisions and Branches in which they reside, either directly or through the Medical Secretary, with a view to their attending where possible the Division and Branch meetings. The Council also asked the Honorary Secretaries of the Divisions and Branches to invite so far as possible such officers in their districts to their meetings, and to offer them any other help or hospitality that might be practicable.

"B.M.A. LECTURERS" ON CLINICAL AND SCIENTIFIC SUBJECTS.

76. As a result of suggestions by Divisions and Branches the Council is making arrangements whereby the Home Divisions and Branches can obtain, at the cost of the central funds, the services of skilled lecturers at their clinical and scientific meetings. The Division or Branch will be asked to name the subject in which it is, for the purpose of any particular meeting, specially interested, and the lecturer it would prefer. The Council will then try to arrange with the lecturer nominated,

or to provide a suitable lecturer if no such choice be specified. The Council will send to the Divisions and Branches at an early date particulars of the arrangements.

LENDING DEPARTMENT OF LIBRARY.

77. The Council is glad to note the increasing use made of the new facilities whereby Members obtain, free of charge (except any postage), from the Lending Department of the Library, books in all branches of general science, in addition to books in all branches of medical literature. The attention of Members who, whether owing to War service or otherwise, have not been aware of the inauguration of the new Department, is drawn to the fact that all books issued under the new arrangements are latest editions. Communications as to the borrowing of books should be addressed to the Librarian, who will send full particulars.

MIDDLEMORE PRIZE.

78. The Middlemore Prize is usually awarded triennially for the best Essay on the Scientific and Practical Value of Improvements in Ophthalmic Medicine and Surgery, made or published during the previous three years. The Prize generally takes the form of an illuminated certificate and a cheque for £50. The Prize was last awarded in 1917. The Council has decided to make a further award in 1920.

STEWART PRIZE.

79. The Stewart Prize was last awarded in 1918. The objects of the Stewart Fund are, firstly, and as a general rule, the recognition of important work already done, or of researches instituted and promising good results, regarding the origin, spread and prevention of epidemic disease; secondly, the selection by the Council of such person or persons as it shall consider specially qualified to undertake and conduct the investigation of such question or questions connected with the subject of epidemic disease as shall be likely to yield important results. The Prize usually takes the form of an illuminated certificate and a cheque for £50. The Council will make a further award of the Prize in 1920.

TERMS AND CONDITIONS OF EMPLOYMENT OF RESEARCH WORKERS.

80. The question of the special conditions of employment of medical research workers was brought to the attention of the Science Committee, which has appointed a strong Sub-Committee to deal with the subject. It was felt that such workers would have difficulty in placing their case before the Association in the usual way, viz., through the Divisions, there being few areas in which their numbers would enable them to do this effectively. The Committee has therefore established the Sub-Committee, and hopes by its means to provide research workers with a centre for information and with a body to which they may look for the protection of their special interests.

Medical Ethics.

RECENT ACTION AGAINST THE ASSOCIATION AND OTHERS.

81. The Council decided not to appeal against the judgment in the Coventry Case, the particulars as to which were reported in full in the *B.M.J. Supplement* of October 19th and 26th and November 2nd and 9th, 1918, and appointed a Special Committee to consider the position which has arisen and report thereon to the Council. The Special Committee appointed consisted of the ex-officio members of the Council, together with Lieut.-Col. Bolam, Dr. Brackenbury, Dr. Jenner Verrall, Dr. Biggs, Mr. E. B. Turner and Dr. Fulton.

82. The Committee decided to take the Joint Opinion of Mr. F. Gore Browne, K.C., a recognised authority on Company Law, and Mr. H. H. Slessor, a Standing Counsel to the Labour Party, on various questions raised by a Memorandum which had been prepared by the Medical Secretary, and he and the Solicitor were given power to put before Counsel any other questions bearing on the subject which they thought it desirable to submit.

83. Accordingly an exhaustive statement was prepared and submitted to Counsel, and a lengthy consultation with Counsel took place and was attended by the Chairman of Representative Meetings, the Treasurer, the Chairman of the Central Ethical Committee, the Solicitor, the Medical Secretary and the Deputy Medical Secretary. Both case and opinion will be found in a document which is being sent to Representatives, Chairmen, and Presidents and Secretaries of Divisions and Branches, and will be supplied to any Member of the Association on application. This document was very fully considered by the Committee on March 14th and 28th.

84. It appeared to the Committee that two alternative courses were open to the Association in view of the opinion expressed by Counsel :—

(i.) To lay down a line of action on any matter of policy and issue warnings to non-members, but to take no further action, or

(ii.) To keep Ethical Rules 28 and 29 in an amended form and be prepared to accept any liability arising from action taken thereunder.

85. The Council considers that the decision in this matter is of vital importance to the Association. It is obvious, even without the legal opinion to this effect, that if the sole object of the Association were to cut down its legal risks to the minimum, this could be best effected by the acceptance of the first alternative. But, as the Council realised when the question of appeal or no appeal was debated, a decision by the Association to relinquish all claim to influence the action of non-members and to refuse to allow a Division to express its opinion as to the conduct of non-members in regard to appointments, would be regarded by many of our Members in the industrial areas as an acknowledgment of helplessness in matters which they consider to be of great importance to them.

86. As Counsel reminded the representatives of the Association at the consultation, any Association which professes to guard the interest of its members must be prepared to take risks; there is no procedure which can prevent such a body being sued by persons who consider themselves aggrieved. The question before the Committee accordingly resolved itself into a balance of advantage, and the Committee finally resolved to make the following recommendation to the Council :—

That, subject to the Model Ethical Rules being modified in conformity with the advice contained in the Joint Opinion of Counsel, with such consequential alterations as may be deemed to be necessary or desirable in order to safeguard the interests of the Association, the Association should retain its ethical procedure in regard to non-members, and be prepared to accept any liability arising from action taken thereunder.

This recommendation was considered by the Council at its meeting on April 16th and after full discussion was adopted.

The Council also resolved to refer the Model Ethical Rules to the Central Ethical Committee for amendment and submission to the Divisions and Representative Body.

Ministry of Health.

87. The A.R.M. 1918 passed the following resolutions (Minutes 57-58) :—

Resolved : That the Representative Meeting, in approving the action of the Council in formulating a scheme for the establishment of a Ministry of Health, authorises the Council to press upon the Government the formation of such a Ministry, and that the Council be instructed to seek the co-operation of the Royal Colleges and such other medical Bodies or Corporations as shall interest themselves in the matter in securing this effect.

Resolved : That this Representative Meeting of the British Medical Association urges upon the Government the importance for the general welfare of the nation of immediately establishing a Ministry of Health upon a comprehensive basis, and provided with adequate expert medical and scientific advisers. This Meeting trusts that the conflicting interests of Government Departments may not be allowed to obstruct the early realisation of this urgent reform.

88. The Council at once appointed a strong Special Committee to deal with the whole question. As finally constituted, the Special Committee contains officially recognised representatives of the Society of Medical Officers of Health, the Medical Women's Federation and the Poor Law Medical Officers' Association. Copies of the resolutions of the Representative Body were sent to the Royal Colleges of England, Scotland and Ireland, and to the President of the Faculty of Physicians and Surgeons of Glasgow. As a result, representatives of the Association conferred with representatives of the Special Joint Committee set up by the Royal College of Physicians, London, and the Royal College of Surgeons, England, and of the Committee of the Royal Society of Medicine. Sympathetic replies were also received from the Royal Colleges of Physicians and of Surgeons of Edinburgh.

89. At the conferences it was found that there was very general agreement on main principles (see *B.M.J.*, November 9th, 1918, p. 525). The question as to whether there should be a separate Medical Advisory Committee, or whether the medical members should form part of a general Advisory Committee of the Ministry was discussed, together with certain proposals as to the method of nomination of the medical

members to any Advisory Committee or Committees that might be set up.

90. In October, 1918, Dr. Addison met the Committee in conference on the Bill. In November, 1918, the Bill was introduced. Its full text appeared in the *B.M.J. Supplement* of November 16th, 1918. In the new Session of Parliament the Bill was introduced on February 17th, 1919.

91. On February 26th, 1919, the Bill was read a second time and committed to a Standing Committee. The proceedings of the Bill in Standing Committee, which were on the whole very satisfactory, were carefully watched throughout, and full reports of them appeared in the *Journal* week by week. The Bill has now passed its third reading and awaits consideration of the House of Lords. The Council has to thank the Medical Committee of the House of Commons for the careful consideration it gave to the proposals of the Association, and the prompt action taken thereon in the House.

Examination of Main Provisions of Bill as Amended by Standing Committee of House of Commons.

1. The Ministry of Health is to have for its duty the carrying out and co-ordination of measures for all health purposes, but for certain reasons which have been fully explained, it is declared not to be possible at the beginning to dissociate from the Ministry some administrative matters of a non-medical kind, which are at present under the jurisdiction of the Local Government Board, though powers are taken in the Bill to transfer these by Order in Council as soon as possible.

2. All central departments dealing with health matters are not as yet included under the Ministry but only those of the L.G.B., of the Insurance Commissioners, the health duties of the Board of Education concerning expectant mothers and children under 5 years of age, and the medical inspection and treatment of school children, the powers of the Privy Council as regards the Midwives Act, and the Home Office duties under the Children Act. The Local Government Board and the National Health Insurance Commission will cease to exist.

3. Powers are taken to enable the Ministry to take over, as thought advisable, and under Orders in Council, the powers of the Ministry of Pensions with respect to the health of disabled officers and men, the powers of the Home Office as regards lunacy and mental deficiency, and the powers of any other Government departments which relate to health.

4. Consultative Councils are to be provided for the Ministry and it is agreed that they shall (i.) include persons of both sexes and consist of persons having practical experience of the matters referred to the Council; (ii.) have direct access to the Minister; (iii.) meet regularly; (iv.) have power to appoint Sub-Committees which may contain persons not members of the Council; (v.) consider not only matters referred to them, but have the right to make representations which the Minister is bound to consider; and (vi.) be subject to triennial election.

5. There is to be a separate Board of Health in Wales acting under the Minister.

6. The Bill does not apply to Scotland, the Government having introduced a Scottish Board of Health Bill to deal with that country (see paras. 203-5 of this Report).

7. The Bill makes the Irish Secretary the Minister of Health for Ireland, with duties similar to those of the Minister in the case of England and Wales. An Irish Public Health Council is also set up. The Irish Insurance Commission is to act under the Irish Secretary. (See, further, para. 219 of this Report.)

8. The Bill does not deal in any way with local administration, which is left for further legislation. The Government has declared it to be impossible at the present time to undertake this legislation, which presents great difficulties.

92. In view of statements made in some quarters that the profession was not consulted as regards the inception of the proposal for a Ministry of Health, the Council desires to direct special attention to the statement, published in the *B.M.J. Supplement* of March 15th, 1919, of the whole action of the Association in connection with the matter.

93. As will be seen from that statement and from the above synopsis of the Bill as amended by the Standing Committee of the House of Commons, the alterations made in the Bill to-date as compared with the text of the Bill introduced by the Government last Session, are almost entirely in the direction favoured by the Association.

* Items (ii.) to (vi.) are dealt with, not in the Bill, but in a Draft Order in Council, which it is stated will be made as soon as the Bill is passed.

Question of Orders in Council.

94. The Council took special steps as regards the question of the Orders in Council procedure under the Bill. Attention was drawn in the Standing Committee to the fact that the ordinary procedure as regards Orders in Council is inadequate as a means of securing Parliamentary control. The Council therefore supported a suggestion made in the Standing Committee that Orders under the proposed Act should lie in draft before each House for not less than 30 days; and that in the case of an Order providing for any transfer of powers or duties to or from the Minister, the Order should not take effect until both Houses by resolution adopted it; should take effect subject to any modifications which might be agreed to by both Houses; and if either House within 30 days presented an address to the King against the draft, no further proceedings should be taken thereon. These suggestions have now been incorporated in the Bill.

95. The Council noted that exception was taken in the House of Commons to the clause in the Bill declaring the Government's intention to separate the non-medical part of the Poor Law from the Ministry of Health. The Council protested to Mr. Addison against any concession on this point, and informed those who were looking after the interests of the approved societies and trade unions, that they could depend upon the support of the Association in the matter. The clause remains in the Bill.

Future Action.

96. The Council is concentrating its attention at present, in co-operation with the Conjoint Committee of the Royal Colleges and the Committee of the Royal Society of Medicine, on the important problems connected with the formation, constitution and duties of the Medical Consultative Council or councils. On these points it expects shortly to be in a position to consult the profession.

When the Ministry is formed it will be necessary for the profession to consider the many problems involved in local organisation and administration, including the questions of the improvement of the medical service by provision of more and better institutional treatment, consultative clinics or centres, &c. Some of these cannot be immediate objects of practical politics until the Ministry and its Consultative Councils have had time to get established and take a survey of the possibilities and needs of the situation. But the profession must be prepared with its views in order that it may place them before the Government and the Minister, and so take its part in guiding the reconstructed health administration of the country. On all these subjects the Council proposes in due course to consult the profession.

REFERENCE FROM A.R.M. 1918.

97. The Council has considered the following Minute 73 of the A.R.M. 1918:—

Resolved: That any system of National Health legislation which does not secure for medical practitioners similar freedom from lay control to that now enjoyed by the clergy of the Established Church, the legal professions and the dual profession of Arms must be injurious to the status, prestige, and general well-being of the medical profession, and particularly hurtful to the best interests of progressive and scientific medicine.

and is of opinion that no useful action can be taken by the Association in connection therewith.

Medico-Political.

EDUCATION BILL AND ACT, 1918.

98. As a result of action by the Association the following section was inserted in the Education Bill, now the Act 1918:—

Provisions as to Medical Treatment.

25. A local education authority shall not, in exercise of the powers conferred upon them by paragraph (b) of Sub-section (1) of section thirteen of the Education (Administrative Provisions) Act, 1907, or by this Act, establish a general domiciliary service of treatment by medical practitioners for children or young persons, and in making arrangements for the treatment of children and young persons a local education authority shall consider how far they can avail themselves of the services of private medical practitioners.

99. The Association pressed that the last clause should read "... a local education authority shall endeavour to avail themselves ..." but the Government refused to make any further concession.

100. In accordance with the instruction contained in minute 80 of the A.R.M. 1918, the Council has approached

the Board of Education as to the formulation of a model scheme for the guidance of the Education Authorities in dealing with the medical treatment of the children. A copy of the memorandum forwarded to the Board is appended (page 87).

101. On February 10th, 1919 the Council forwarded to the Education Authorities in England and Wales a circular letter drawing their attention to the importance of giving due attention to the health of the whole child population, and urging the utilisation of the local profession in connection with schemes about to be prepared.

MEDICAL FEES FOR PRIVATE PRACTICE.

102. In connection with the opinion expressed by the Council in its Report for 1917-18 (paras. 115-6) that the members of the profession were perfectly justified, in view of the greatly increased cost of living, in taking individual or local collective action to secure increase of medical fees, the Council is glad to find that many of the Divisions have taken such action, and that the scale of private fees throughout the country generally has been modified in accordance with the altered conditions.

FEE FOR NOTIFICATION OF INFECTIOUS DISEASE.

103. The Council has repeatedly addressed to the President of the L.G.B. and Chancellor of the Exchequer, further strong representations as to the gross injustice of the reduction of the fee for notification of infectious disease. In so doing the Council recapitulated the facts relating to the reduction of the fee from 2s. 6d. to 1s., which is, as yet, only for the period of the War. From the first the Association protested against the reduction, and warned the Government, both by letter and deputation, of the strong feeling which it would arouse among medical practitioners. The Council has again urged that as a matter of simple justice the pre-War fee should be restored, and pressed for an opportunity of laying the case more fully before Mr. Addison by deputation at an early date. The reply to this letter was that "Section 5 of the Local Government (Emergency Provisions) Act, 1916, will come to an end when peace is ratified. The Board understand that the British Medical Association were willing last year that the fee for notification of other infectious diseases should be restored to 2s. 6d., and that the fee for notification of measles should continue at 1s., and I am to inquire whether the President may understand that this is still the view of the Association." In a letter to the Board, dated March 24th, the Medical Secretary directly challenged the assumption contained in the sentence last quoted. He stated that the only possible foundation for it could be what occurred on the occasion when Mr. Hayes Fisher, then Parliamentary Secretary to the Board, received a deputation from the Association on April 6th, 1916. The deputation placed before Mr. Fisher its strong objection to the proposal of the Government to reduce the fees payable for notification of diseases, and stated its belief that the proposal would be received with great indignation by the general body of the profession. As it seemed to the members of the deputation that the Government might insist on effecting this economy at the expense of the profession, the suggestion was made that perhaps a compromise might be arrived at by paying, during the War only, a fee of 1s. for measles, which was then just about to be made notifiable, the fee for the other diseases remaining at 2s. 6d. It was specifically stated that this suggestion was made in order that it should not be said that the medical profession was not willing to meet the Government in its efforts to economise at a time when the nation was told that the strictest economy was necessary. The idea that the fee for notification of measles should remain permanently at 1s. never crossed the minds of the members of the deputation; the suggestion was meant as a War time concession on the part of the profession. Mr. Addison was again urged to receive a deputation and agreed to do so on April 25th, when the views of the profession will be pressed vigorously upon him. [The deputation is reported in this week's JOURNAL.]

STATE REGISTRATION OF NURSES.

104. The Council is glad to report gratifying progress on this subject. The Bill promoted by the Central Committee for State Registration of Trained Nurses was introduced on March 18th, 1919 in the House of Commons by Capt. Barnett and supported by representatives of all parties. It was read a second time on March 28th, and was committed to a Standing Committee, its principles receiving the practically unanimous support of the House. While the Bill was in Committee stage the Government called a conference of the supporters of the Bill, and of the proposed Bill of the College of Nursing, Limited, with a view to arriving at an agreed Bill, which would be immediately taken over by the Government as a Government measure. The Council is glad to report that the prospects of the Bill seem assured.

MATERNITY AND CHILD WELFARE ACT, 1918.

105. Section 2 of the Act provides for the setting up by Local Authorities of Maternity and Child Welfare Committees, and for appointment thereon of a certain number of persons specially qualified by training or experience in subjects relating to health and maternity. The Council accordingly urged the L.G.B. to press upon Local Authorities the great desirability of including members of the profession among these specially qualified members of the Committees, and pressed the Divisions to take steps to make certain of such representation in their areas.

PROFESSIONAL SECRECY.

106. It may be remembered that the L.G.B., in para. 4 of its circular of February, 1918 to Local Authorities (as to Wassermann tests for patients who have had miscarriages), stated that it was desirable that when these cases were notified, the County M.O.H. should make enquiries into the circumstances in consultation with the District M.O.H., through the medical practitioner, if any, in attendance at the birth. The Council in the *Journal* warned the profession that it would be wrong, both legally and ethically, for the attending practitioner to furnish such information.

107. Subsequently, on June 25th, 1918, representatives of the Association conferred with officials of the L.G.B. on the subject. The representatives of the Board stated that the latter realised that its suggestion that Medical Officers of Health should make enquiries as to the circumstances of still-births from the practitioners in attendance was in conflict with the ethical obligations recognised by the Association and profession generally, but that it was necessary either to make it a statutory duty for medical practitioners to furnish the desired information, or by some other means to ensure that cases of miscarriage and still-birth were properly investigated. The Board also intimated that they proposed to explain to M.O.Hs. the difficulties raised as to the circular, and to suggest that in cases of still-birth notified by a medical practitioner the M.O.H. might, in an informal manner, make a friendly suggestion to the practitioner as to the desirability of taking steps to ascertain whether the still-birth had been caused by any syphilitic condition, solely with a view to securing proper treatment and the health of future offspring. It was suggested, as an alternative, that a circular should be issued by the Board to all medical practitioners, urging the desirability of a Wassermann being done in all cases of miscarriage, and that the Association should ask Divisions, Branches and Local Medical and Panel Committees to urge the desirability of such measures on individual practitioners in their areas.

108. Subsequently the L.G.B. accepted practically all the amendments suggested by the Association to the circular which the Board propose to issue to members of the profession as to miscarriages and still-births.

REMUNERATION OF MEDICAL REFEREES UNDER MINISTRY
OF PENSIONS.

109. The Council invited the opinions of Medical Referees as to the adequacy or otherwise of the fees paid by the Ministry of Pensions. As a result it transpired that in some cases the referees were being requested to attend and give advice at meetings of the Local Disablement Committee and received no remuneration for so doing. The Council took the matter up with the Ministry of Pensions. A reply dated February 5th, 1919, was received to the effect that where a Local War Pensions Committee represents to the Ministry that a number of cases are awaiting consideration by their Appeals Sub-Committee, and would be more advantageously dealt with if the Medical Referee were present, the Minister authorises the Local Committee to invite the referee and to pay him a special fee of £1 1s., on the understanding that all cases other than those requiring medical advice are excluded from that session of the Sub-Committee.

The Council considered Minute 71 of the A.R.M. 1918, referring to the Council a proposal that the fee of a Medical Referee for examination of a discharged soldier should be not less than 10s. 6d. As there was no evidence of general dissatisfaction with the fees paid by the Ministry, the Council decided that no useful action could at present be taken.

PENSIONED OFFICERS AND PAY FOR CIVILIAN WORK.

110. It came to the knowledge of the Council that by Rule 4 under Section 6 of the Compensation Act, 1887, officers in receipt of disability pensions who were acting as temporary part-time members of National Service Medical Boards were liable to a 10 per cent. reduction in the remuneration paid them. The Council asked the Ministries of Pensions and National Service to urge the Treasury to exempt from the operation of that rule civilian medical practitioners acting as members of

medical boards established by the Ministries. As a result medical referees and medical practitioners employed as members of Medical Boards and Inquiry Officers have been exempted from the provisions of the rule.

PAYMENT OF MEDICAL PRACTITIONERS CALLED IN ON
THE ADVICE OF MIDWIVES.

111. The scale of fees adopted by the Representative Body 1915 for payment of medical practitioners called in on the advice of midwives has been definitely approved by the L.G.B. A memorandum incorporating it has been sent by the Board to all Local Authorities which supervise midwives under the Act. This result is most gratifying in view of the light which the Association put up for the principle, thus made operative that the fees of all doctors called in on the recommendation of midwives should be guaranteed by the Local Supervising Authority.

112. The Board has recently asked for the opinion of the Association as regards certain questions of interpretation of the scale that have arisen, and this has been given, to the effect (a) that "operative assistance" should include everything which the practitioner has to do on attendance at the case beyond advice or examination; (b) that the term attendance at confinement should be understood to mean attendance at immediately after labour; (c) that the additional fee of one guinea be paid under "assistance for the administration of an anæsthetic" applied only to a case where a second practitioner was called in to administer an anæsthetic; and (d) that the fees for visits apply to any visit paid at the request of a midwife made under C.M.B. rules.

MIDWIVES BILL AND ACT, 1918.

113. The Midwives Bill, 1918, as first introduced into Parliament, contained the following Clause:—

In case of any emergency, as defined in the rules of the Board, a midwife shall call in a registered medical practitioner to her assistance, and the Local Supervising Authority shall pay to such medical practitioner a sufficient fee, with due allowance for mileage, according to a scale to be fixed by the Local Government Board, and such fee shall cover one subsequent visit.

As a result of action by the Association, the words "and such fee shall cover one subsequent visit" were omitted by the Government, and thus do not appear in the Act. These words would have been inconsistent with the scale approved by the Association and since adopted by the L.G.B.

WORK AND REMUNERATION OF SCHOOL MEDICAL OFFICERS.

114. In September, 1918, the Board of Education issued to Local Education Authorities a circular (1061) stating that the Board was considering proposals by some training colleges for establishment of special courses for discharged soldiers wishing to train as elementary school teachers. The circular pointed out that it would be necessary for each applicant to satisfy the Board, by means of a medical report, that he was physically fit for the teaching profession. The Board suggested that Local Authorities should lend the services of their School Medical Officers, free of charge, for these examinations.

115. The Council represented to the Board the injustice of requiring School Medical Officers to render, without payment, services which did not strictly appertain to the functions of Education Authorities, and were not contemplated when the appointment of the School Medical Officer was made. The Council urged the Board to withdraw its suggestion that the examination should be made free of charge, and pointed out that there seemed to be every reason why the examination question should be made by the Medical Referees appointed by the Ministry of Pensions.

116. In reply, the Board pointed out that it was important that the fitness of a disabled man for the teaching profession should be considered by a medical practitioner possessing special knowledge of the conditions of work in that profession; that it was also important that the examination should be made by a medical officer of the Education Authority in whose area the man resided, since it was probable that the latter, on completion of his training, would seek employment in that area; that it was a common practice for S.M.O.s to examine candidates for the teaching profession; that the circular represented no new departure; that the number of men to be examined was small and thus the plan proposed would place no appreciable burden on any School Medical Officer; that the circular did not suggest that the Medical Officer should receive no fee for the examination, but simply that the examination should take place free of charge to the man; that the Board was not aware whether the contract between any S.M.O. and his Authority would or

would not debar him from stipulating for an extra payment in respect of the examination; and that it had no reason to believe that any such officer would refuse to do the work unless he received extra payment therefor. Further representations on the question are being made to the Board.

POSTAL MEDICAL OFFICERS.

117. The A.R.M. 1918 referred (Minute 78) to the Council for consideration and action the question of the remuneration of Postal Medical Officers. The Council therefore informed the Postal Medical Officers' Association that the Association was willing to co-operate with it for the redress of grievances of Postal Medical Officers, if it would forward evidence that such grievances existed and were well-founded. The Secretary of the Postal Medical Officers' Association, in accordance with the line previously taken by that body, indicated that that association did not wish for the help of the British Medical Association.

118. It has since been reported that an addition of 1s. has been made to the capitation fee, but as the question of the terms for "itinerants" has not been dealt with and the Association has evidence that Postal Medical Officers consider the present terms inequitable, representations are being made accordingly to the Postmaster-General.

MEDICAL CERTIFICATES AS TO FITNESS OF WOMEN FOR EMPLOYMENT IN VARIOUS CAPACITIES.

119. Representatives of the Association and of the Medical Women's Federation interviewed in July, 1918, the Parliamentary Secretary to the Ministry of Labour. They urged upon him that the fee of 2s. 6d. offered by the Government for the complicated certificates as to fitness of women for employment in various capacities was in no way commensurate with the work and responsibility. They pressed that the Ministry should adopt a uniform simple form of certificate which the Association and Federation could also adopt, and which should not be required in duplicate.

120. Later Mr. Bridgeman submitted to the Association a suggested form of certificate. It was considered by the Council to involve a very thorough examination, for which a fee of 2s. 6d. would be inadequate. The Council therefore informed the Ministry that in its opinion a fee for any certificate involving complete medical examination should be not less than 5s., unless definite arrangements were made for examination of batches of not less than eight persons, and where a nurse, room and clerical assistance were provided.

121. In view of the instructions of the A.R.M. 1918, a letter (D. 1) was sent in August, 1918, to the Divisions and Branches explaining the position, and urging them to ask each member of the profession to refuse to sign the original complicated form of certificate for less than 5s., pending a satisfactory settlement with the Government Departments concerned.

NATIONAL DEPOSIT FRIENDLY SOCIETY: SEAMEN'S NATIONAL INSURANCE SOCIETY.

122. The Council considered the question of the revision of the scale of fees of the National Deposit Friendly Society for medical attendance on its members, which in its opinion were inadequate. The Council therefore proposed to the Society a scale of fees equivalent to an increase of 30 per cent. on the scale paid for attendance on discharged disabled soldiers and sailors. The Society did not see its way to accept that scale entirely, but agreed to make operative the following:—

	s.	d.
Visit, with medicine for two days	3	6
Each intermediate visit in dangerous cases	2	6
If beyond two miles (outward) extra per mile	1	0
Attendance at surgery and medicine for two days	2	6
Fresh supply of medicine for two days	1	6
Visit in urgent or dangerous cases between the hours of 8 p.m. and 8 a.m. (with medicine)	5	0
Attendance at surgery in urgent or dangerous cases between the hours of 8 p.m. and 8 a.m. (with medicine)	3	0

A doctor is not compelled to attend members of the Society as such, but can treat them as private patients, accepting these fees as part payment only. The above improvement in the fees is so great as to constitute a very substantial gain.

123. The Council is now taking steps to secure, if possible, the adoption by the Seamen's National Insurance Society of a similar scale of fees.

CRIMINAL LAW AMENDMENT AND SEXUAL OFFENCES BILLS, 1918.

124. These Bills have been referred to a Joint Committee of both Houses. The Association has drawn the attention of the Joint Committee to the overlapping of the Bills, has pressed for re-consideration of the wording of Sub-Clause 7 (4) of the Criminal Law Amendment Bill and Clause 5 of the Sexual Offences Bill, as to advertisements in medical papers, and also asked that the exhibition to public view of appliances for procuring abortion or preventing conception be made punishable by fine or imprisonment.

GENERAL PARLIAMENTARY ELECTION, DECEMBER 1918.

125. The Council urged the Divisions to approach the Candidates for Parliament at the General Election, December 1918, as to subjects affecting the public health and the medical profession. For the assistance of the Divisions the Council prepared and issued a series of questions upon:—Ministry of Health, Death Registration and Coroners' Law, Nurses' Registration, Fee for Notification of Infectious Diseases, State-Aided Midwifery Service, Position of the Territorial Force and Special Reserve Medical Officers, Institutional Treatment under the National Health Insurance Acts, Remuneration of Women Medical Practitioners.

126. As a result, the Association is now in possession of the opinions of a considerable number of sitting Members of Parliament as to these important matters, which will be of great service when approaching Parliament if and when the various matters come up for consideration.

CONNECTION BETWEEN MEDICAL MEMBERS OF PARLIAMENT AND THE ASSOCIATION.

127. The Council cordially welcomes the formation in Parliament of a Medical Committee composed of the medical Members of Parliament with a few others who have specially interested themselves in medical matters. The Committee has already amply justified its existence by its action during the consideration of the Bills for the Ministry of Health and the Registration of Nurses. The Parliamentary Sub-Committee has made frequent representations to this Committee on several subjects, and the Council feels that for the first time there is now in existence an intra-Parliamentary body which it can approach in medical affairs with the certainty of not only a sympathetic hearing but of a reception by those who are by training and interest competent to judge. The Chairman of the Medical Committee of the House of Commons is Sir W. Watson Cheyne, and its Secretary is Major Farquharson, an experienced and valued Member of the Council of the Association.

CENTRAL EMERGENCY FUND.

128. This Voluntary Fund was created by the Council in 1905 to assist members of the profession in maintaining its interests against organised bodies of the community, and the Council urges practitioners to keep it well supported. It has been found most useful in cases where assistance cannot be given from the ordinary funds of the Association, and has enabled members of the profession on several occasions to resist the imposition of unfair conditions of employment. An audited statement in respect of the Fund can be obtained on application to the Head Office.

DOGS' PROTECTION AND VIVISECTION OF ANIMALS BILLS.

129. The Dogs' Protection Bill was introduced into the House of Commons on March 19th, and the Vivisection of Animals Bill on March 27th, 1919. Either, if placed on the Statute Book, would totally prohibit vivisection for purposes of research. Both Bills were introduced by private Members. Representations were at once made to the Medical Committee of the House of Commons, which took the matter up with great energy, but in spite of its efforts the Bill passed through Standing Committee. There is however hope that the Government will use its influence to prevent the passing of the Bill as it stands. Advantage was taken of the Special Clinical Meeting to pass a strong resolution of protest against the Bill, which was moved by Sir W. Osler, seconded by Col. C. J. Martin and supported by the President of the Royal College of Surgeons. The resolution has been sent to the Home Office and further steps will be taken. The Dogs' Bill is down for consideration on report in the House on May 23rd. The Vivisection of Animals Bill has not yet obtained a second reading.

FEES TO MEDICAL PRACTITIONERS GIVING EVIDENCE IN
CASES OF ALLEGED MISCONDUCT OF MIDWIVES.

130. The Council was invited by the Central Midwives Board to express its opinion as to what would be an appropriate rate or rates of payment to medical practitioners, in cases in which they, at the request of the Board, appear and give evidence as to cases of malpractice, negligence or misconduct on the part of midwives.

131. The Board has been informed in reply (a) that there should be no differentiation in the payment of medical practitioners for attendance to give evidence as to cases of malpractice, negligence or misconduct on the part of midwives, inasmuch as all practitioners are asked to attend in their capacity of registered medical practitioner; (b) that the fee for giving evidence should not be less than three guineas, in addition to the ordinary Government scale for subsistence allowance applicable in similar circumstances, and first-class travelling expenses.

REPORTS REQUIRED OF CIVILIAN PRACTITIONERS AS TO PRE-
WAR HEALTH OF MEN WHOSE CASES ARE BEING CON-
SIDERED WITH A VIEW TO POSSIBLE PENSION.

132. Advice has been sought by many practitioners in this connection, and it would appear that the practices of Local War Pensions Committees differ considerably. The Council has expressed the opinion that, if a Board or Authority before coming to a primary decision with regard to a man's pension desires information with regard to his pre-War health, the application to the medical practitioner for such information should be made by the Authority and paid for by it; and that, in cases where an appeal is in question and a man applies to a doctor for such information in order to establish his case, such information should be supplied to the man direct and the practitioner must look to the man himself for payment.

DEATH CERTIFICATION, CORONERS' LAW, PROPRIETARY
MEDICINES.

133. Instructions have been given for preparation of a Memorandum as to the Association's attitude upon these matters, with a view to discussion with the House of Commons Medical Committee for the purpose of considering the possibility of Parliamentary action in connection therewith.

LIFE INSURANCE EXAMINATIONS.

134. Some Insurance Companies have recently adopted the practice of requesting relatives of deceased persons to apply to a practitioner for a statement as to the cause of death in the form of a certificate. This action places the doctor in an awkward position, inasmuch as if he gives such a certificate he may prejudicially affect the amount of insurance money paid, while, if he refuses, his late patient's friends may be unable to obtain the money. The Council has expressed the opinion that medical practitioners should decline to furnish information as to the previous health of deceased persons who were insured without medical examination, and should refer persons who are unable to get satisfaction from the Insurance Company to a solicitor.

FEES FOR MEDICAL CERTIFICATES IN CONNECTION WITH
CLAIMS FOR OUT-OF-WORK PENSION.

135. A Member asked for advice as to what fee should be charged for medical certificates necessary in respect of claims for out-of-work pensions to enable a Court of Referees to arrive at a decision as to whether a claimant is capable of work, particularly if the question is the capacity for work of persons disabled or partially disabled as a result of War service. The Council expressed the opinion that, if the certificate required is of a simple nature, a fee of 5s. should be charged, with usual mileage.

ENQUIRY INTO ECONOMIC CONDITIONS OF NURSES.

136. The National Council of Women of Great Britain and Ireland has asked the Association to appoint representatives to serve on a Special Committee set up under the auspices of that Council to enquire into the economic conditions of nurses with reference to hours of work, pay, and physical welfare. Mr. E. B. Turner and Mr. N. Bishop Harman have been appointed as the representatives of the Association.

UNDER CONSIDERATION.

137. Terms and conditions of work of Assistant Asylum Medical Officers.

138. Question as to the possibility of placing the policy of the Association in regard to certain matters of public interest before lay organisations.

139. Medical examination of school teachers under Teachers' Superannuation Act, 1918.

140. Certain questions as regards the publication of advertisements of vacant public appointments in the *Journal*.

141. Question of action as regards election of direct representatives on General Medical Council.

Medical Representation in Parliament Fund.

142. The Council considered Minutes 49-51 of the A.R.M. 1918, as to the need for more adequate representation of the medical profession in the House of Commons, and the question of financial provision for that purpose.

A separate voluntary fund called "The Medical Representation in Parliament Fund," has accordingly been established for the purpose of assisting Parliamentary candidates, with the following objects and conditions:—

Objects.

To ensure the presentation to Parliament of expert medical opinion on matters relating to national health or involving the welfare of the medical profession, and for this purpose (i.) to secure a larger representation of the medical profession in Parliament by obtaining suitable medical candidates for Parliament and suitable constituencies, and assisting when necessary by monetary grants such candidates, irrespective of political party; (ii.) to help to maintain approved Members of Parliament as may be deemed necessary or advisable; (iii.) to promote such other Parliamentary action as may be thought advisable.

Conditions.

(i.) The Fund shall be held in Trust by the Council for the time being of the B.M.A. and applied to the objects recited in the preceding paragraph;

(ii.) The entire administration and control of the Fund shall be vested in the Council of the B.M.A. as Trustees, and the making of Grants from it shall be at the absolute discretion of that Council.

(iii.) The conditions of approval by the Association of the candidature of any medical man for a Parliamentary seat shall be as follows:—

That he should, by his past work and experience, have proved his knowledge of, and loyalty to, the interests of the profession; that he should be willing to inform and advise the Trustees of the Fund or their representatives as to any procedure arising in Parliament which is likely to affect the medical profession, and to confer with the Trustees of the Fund or their representatives as to their views thereon.

Two constituencies were offered by the Liberal Whips to candidates approved by the Association. For various reasons it was deemed inadvisable to accept the offer of the one made to Dr. Brackenbury. Sir Thomas Flitcroft stood for the Faruworth Division of Lancashire, and fully expected to be adopted as the Coalition candidate. By methods totally inexplicable to him and his supporters, the Coalition support went to another candidate, and Sir Thomas Flitcroft was not returned. He had been granted the sum of £150 towards his election expenses from the Fund, but he very generously returned it. The total amount subscribed to date (exclusive of promises of annual subscriptions) is £443 4s. 6d. A statement of the work and prospects of the Special Committee will be sent to each subscriber.

As the Fund is a Trust Fund independent of the funds of the Association the expenses of the Committee will be paid from the Fund.

143. The Trustees urgently appeal to the Divisions and Members for financial support such as will enable the Fund to do the work for which it has been established. Politics are an uncertain quantity and general elections happen sometimes when least expected. By-elections are bound to occur frequently, and the Fund ought to be placed in a position to support, at short notice, any medical candidate asking for such support who has proved his devotion to the interests of the profession.

National Health Insurance.

CONSTITUTION OF INSURANCE ACTS COMMITTEE.

144. The Council considered the following resolution of the Conference of Representatives of Local Medical and Panel Committees of October 1918:—

Minute 26.—Resolved: That, inasmuch as membership of the British Medical Association is definitely stated to be the qualification for nomination of a direct representative on the Insurance Acts Committee, and whereas this

qualification restricts the choice of Panel Committees of their representatives on the Panel on a body which is ostensibly formed to represent Insurance practitioners as a body, this Conference instructs the Insurance Acts Committee to endeavour to secure the removal of this qualification before another election.

The Council believes this request to be reasonable and in the best interests of the profession and of the Association. The Committee set up to watch the interests of the profession in connection with the National Health Insurance system has evolved into a partnership between the Association and the Local Medical and Panel Committees. The partnership has accomplished excellent work for those members of the profession who are engaged in Insurance work, and has moreover succeeded in keeping in close touch the Association and the Local Medical and Panel Committees. The policy of the Association has always been that, as an Insurance practitioner is primarily a general practitioner and only secondarily an Insurance practitioner, it is undesirable that a separate organisation should be set up.

145. When the Association agreed to allow the majority of the Insurance Acts Committee to be elected directly by the Local Medical and Panel Committees, it removed a possible source of friction and misunderstanding. In the opinion of the Council, the logical consequence of that step is to give the Local Medical and Panel Committees a perfectly free choice in the selection of their representatives.

146. The Council recommends:—

Recommendation: (1) That the A.R.M. 1919 amend By-law 69 by inserting after the word "Committees" the words "(which may include persons who are not members of the Association)";

(2) That the column "Otherwise appointed" of the Schedule to the By-laws as to the Insurance Acts Committee be amended to read as follows:—

"Registered medical practitioners appointed as follows:—

6 such practitioners (being Members of the Association) elected (in the manner prescribed by the Representative Body) by the elected Representatives of the Constituencies formed for the United Kingdom under By-law 33, namely 4 by all the elected Representatives (acting together) of the Constituencies so formed for England and Wales, and one each by all the elected Representatives (acting together) of the Constituencies so formed for Scotland and for Ireland respectively;

22 such practitioners (whether Members of the Association or not) elected by the 4 Members *ex-officio* and the above-mentioned 6 elected Members of the Committee acting together, such 22 practitioners to be nominated or qualified as under, viz.:—

18 to be selected so far as possible on a territorial basis from among practitioners nominated by the Local Medical Committees and Panel Committees formed in Great Britain under the Insurance Acts;

1 (being a member of the Staff of a Voluntary Hospital) to be nominated by the Hospitals Committee of the Association;

1 to be nominated by the Medical Women's Federation;

1 to be nominated by the Society of Medical Officers of Health;

1 to be nominated by the Poor Law Medical Officers' Association of England and Wales;

with power for the Members of the Committee appointed as above provided to co-opt as additional Members such number (if any) of non-panel practitioners as shall be required to secure that 4 such practitioners shall be Members of the Committee."

CONTENTS OF THIS REPORT.

147. In accordance with paragraph 132 of the Report of the Council 1917-18, approved by the Representative Body, the Council submits in the National Health Insurance section of this Report only those matters which entail alterations in the By-laws of the Association or affect the policy of the Association, as apart from matters of more domestic interest affecting, mainly or wholly, only those practitioners at present doing National Health Insurance work. Full reports on the latter are placed before the Conference of Representatives of Local Medical and Panel Committees.

ANNUAL CONFERENCE OF LOCAL MEDICAL AND PANEL COMMITTEES.

148. The Annual Conference of Representatives of Local Medical and Panel Committees was held on October 24th, 1918. Of the 200 Insurance areas in England, Scotland

and Wales, 117 sent representatives. A full report of the proceedings of the Conference was published in the *B.M.J. Supplement* of November 2nd, 1918.

MONEYS WITHHELD FROM INSURANCE COMMITTEES.

149. The Council considered the instruction of the A.R.M. 1918 (Minute 93) to take such steps as should ensure that in the event of a monetary penalty being inflicted by the Commissioners, the Insurance Committee should not divide the penalty over the whole panel, and that if a practitioner gives his services conformably to the Regulations, the practitioner shall receive in payment the full sum due to him or her in accordance with the Acts.

150. It transpired that the case, in Scotland, which had led to this question first being raised, had been settled in a manner satisfactory to the persons affected, and that the Scottish Commissioners had taken steps to ensure that in future any penalty inflicted should not be divided over the whole panel, but should fall on the individual practitioner concerned.

ALLOWANCES FOR INCREASED COST OF LIVING AND INCREASED PRACTICE EXPENSES.

151. The Insurance Acts Committee was successful in obtaining in the case of rural and semi-urban practitioners the particulars required by the Commissioners in support of the claim for a grant on account of increased practice expenses. A detailed statement was forwarded by the Committee to the Commissioners. All possible steps were taken by the Committee to obtain through the Local Medical and Panel Committees particulars as regards urban practices such as would enable the Committee to justify a claim for a grant for increased practice expenses to the urban practitioners also. In this respect however the result of the Committee's efforts was disappointing, very few statements being forthcoming from practitioners, and these mostly being of a very meagre nature. The information was none the less placed before the Commissioners in support of the claim. They intimated that it was insufficient and asked for further information in support of the claim. None being obtainable, the Committee decided that it would serve no useful purpose to press the claim for an allowance for increased practice expenses in the case of the urban practices.

152. The Council has pleasure in reporting that as a result of the action taken, the Treasury agreed to make grants to Insurance practitioners as follows:—

(1) Increased Cost of Living.

(i.) To all practitioners whose net professional income from all sources does not exceed £500 a year, a War allowance of 12½ per cent. of the Insurance fees payable to him for treatment.

(ii.) To all practitioners whose net professional income from all sources exceeds £500 but does not exceed £1,000, a War allowance of 10 per cent. of the Insurance fees payable to him for treatment,

subject in each case to a maximum payment of £60.

153. In order to avoid complications and delay in payment, the grant was in each case determined by reference to the practitioner's income tax assessment for the year 1918, and the amount of the allowance was calculated on the insurance fees payable to the practitioner for treatment (as distinct from any payments for drugs or mileage) during the year 1917. The principle on which the grant has been made and the percentages which have been fixed are as nearly as possible those which governed the grants made, at the time the grant was made, to the Civil Service.

(2) Increased Practice Expenses.

154. For the purposes of this grant a sum of £40,000 (in addition to the £20,000 already distributed as an extra mileage grant) is to be apportioned among Insurance Committee areas, on the basis of the total number of insured persons for whom the doctors within the area supply drugs where no chemist is available within a mile of the insured person's residence. This method has been adopted in order to save the doctors concerned from having to prepare detailed statements, and in order to obtain prompt distribution of the grant. So far as the distribution among the doctors of an area is concerned, this may either be on the same basis as mentioned above, or the Commissioners are willing to consider any alternative methods of distribution which Insurance Committees may submit to them.

RAISING OF INCOME LIMIT FOR INSURED PERSONS.

155. The Council was informed at its meeting on April 16th that the Insurance Commissioners had under consideration a

proposal to increase the income limit of £160 a year, which now applies to persons who are employed otherwise than by way of manual labour. This step is being taken because large numbers of persons whose income was previously under £160 have, by war bonuses and other additions to wages which may now be considered to be more or less permanent, passed the £160 limit. Various figures had been suggested for a new income limit, but it was believed that the figure to be adopted would be £250 which was thought roughly to correspond in money value to the old limit. It was stated also that if a Bill is brought in this will probably happen almost immediately, as, unless something was done before the end of June, a large number of persons at present insured, estimated as being between half a million and a million, would automatically go out of insurance on June 30th. Enquiries had elicited the fact that though the intention of the proposed Bill is merely to keep in insurance persons who are of the class intended by the 1911 Act to be insured, an incidental effect would be to allow of the entrance to insurance of an uncertain number of persons who were in 1911 in receipt of an income over £160 but under £250, though such persons would have the right to claim to be exempt. The Council directed that immediate representations should be made to the Commissioners objecting strongly to the proposed Bill unless arrangements can be made to prevent the entrance of this latter class into insurance.

NEW AGREEMENT FOR 1920: POSSIBLE EXTENSION OF SERVICE.

156. Conferences have been proceeding since May 1st, 1918, between representatives of the Insurance Acts Committee and the Insurance Commissioners as to what should be the conditions of service when the time comes for revision of the present bargain between the Government and that part of the profession who are at present doing work under the Insurance Acts.

157. The Conferences were entered upon as a result of the application made to the Government by the Insurance Acts Committee, by direction of the Local Medical and Panel Committees' Conference of October 1917, for increase of the capitation fee.

158. In reply to that application, Mr. Bonar Law stated to a Deputation of the Insurance Acts Committee which waited upon him on March 15th 1918, that the Government could not at that time consider the application for increase of remuneration except in so far as it might be justified by War conditions. A change in remuneration on grounds independent of War conditions, could only be considered as part of a general revision of the conditions of service. Such a revision would have taken place normally at the end of three years from the coming into operation of medical benefit, i.e., at the end of 1915, but it had been postponed by mutual consent on account of the War. Mr. Bonar Law stated, however, that if the profession desired that consideration of questions affecting a revision of the terms of service should be entered upon without further delay, the Government saw no objection to preliminary discussions between the Commissioners and the Insurance Acts Committee taking place. The question of the actual amount of remuneration could not be entered upon satisfactorily at that time, but there was no reason why all the other conditions of service should not be discussed.

159. Discussions have taken place at regular intervals and reports have already been issued to the Local Medical and Panel Committees regarding the methods of calculating remuneration under the Act and the payment for mileage.

160. There were then considered at the Conferences between the Committee and the Commissioners the conditions of service apart from remuneration, including the duties of practitioners, the question of administrative agreements, question of the form of agreement and the procedure for revising the agreement, questions of procedure in dealing with alleged breaches of agreement, disputes between doctors and Insurance Committees, withholding of Exchequer Grant and removal from the Panel. The Solicitor of the Association attended when the legal interpretation of the form of agreement was being discussed. The question of capitation fee will not be dealt with until it has been decided what services are to be required of Insurance practitioners under the new agreement.

161. When the conferences came to deal with the questions involving the employment of consultants and specialists, and the possible provision of institutional treatment, the Committee and the Commissioners came to the conclusion that representative medical practitioners of the types indicated should be present, and the Commissioners accordingly invited those named in the statement published in the *B.M.J. Supplement* of March 1st, 1919 (page 28).

162. It is hoped to issue about the middle of May, 1919, to all Local Medical and Panel Committees, to every Division and Branch, and also to every member of the

profession, a full report on the matters thus considered. Shortly afterwards, in accordance with the decision of the Conference of Local Medical and Panel Committees of October 1918, meetings will be called of groups of Local Medical and Panel Committees in various parts of the country for consideration of the subject. At these meetings representatives both of the Insurance Acts Committee and of the Commissioners will attend to assist in the elucidation of the report. At the conclusion of this series of meetings a Conference of Local Medical and Panel Committees will be held, probably early in July, to consider the various questions arising.

163. Obviously, the report will include matters which must closely concern all practising members of the profession, and not merely those at present engaged in National Health Insurance work. It is therefore proposed that all members of the profession shall be invited to the local meetings in question. In this way it is believed that ample opportunity will be afforded to all parties for full consideration of the whole matter. Thereafter the Insurance Acts Committee, if so instructed by the Conference of Local Medical and Panel Committees, will be able to enter on definite negotiations for revision of the terms of service, with reliable information as to the views and wishes of the profession. The larger question of possible extensions of service will of course come before the R.B. for discussion.

REMUNERATION OF INSURANCE PRACTITIONERS.

164. The Insurance Acts Committee has pointed out to the Insurance Commissioners that it does not consider that the granting of the recent allowances by way of grants to meet the increased cost of living and increased travelling expenses, in any way affects the claim which has been made on the part of Insurance practitioners for an increased capitation payment.

PRACTICES OF WOMEN PRACTITIONERS AND PRACTITIONERS ENGAGED ON NATIONAL SERVICE.

165. The Insurance Acts Committee drew the attention of the Commissioners to the need for safeguarding the practices of women Insurance practitioners and any other practitioners who might be engaged on National Service of various kinds and absent from their practices. As a result, these classes of practitioners have had extended to them the same protection, so far as transfer from their panels is concerned, as was given to Insurance practitioners on military service.

NATIONAL INSURANCE DEFENCE TRUST.

166. The Council had for some time been considering the desirability of winding up the Central Insurance Defence Fund, and of starting another fund for the protection of the interests of the medical profession in connection with the present National Health Insurance system or any extension or modification thereof. In this connection the Council also considered Min. 88 of the A.R.M., 1918, to the effect that the balance in hand of the Central Insurance Defence Fund should either be returned to the donors, or a scheme for its utilisation be submitted for their approval.

167. In October, 1918, the Conference of Representatives of Local Medical and Panel Committees approved the establishment of a fund for the general organisation and protection, primarily of the interests of Insurance practitioners, but also of those of the whole profession who were, or might be, involved in the administration of the Insurance Acts or similar measures. A "National Insurance Defence Trust" has therefore been inaugurated, with the Insurance Acts Committee as Trustees. Full particulars as to the Trust were published in the *B.M.J. Supplement* of March 22nd, 1919, (p. 45), and have also been circulated to the Local Medical and Panel Committees in England, Scotland and Wales. Strong financial backing for the Trust is appealed for.

168. Arrangements will be made to approach subscribers to the Central Insurance Defence Fund with the offer either to return the balance of their contribution or to transfer it to the new Trust. This will be done as soon as demobilisation is further advanced, with a consequently improved chance of reaching the subscribers to the old Fund.

Public Health and Poor Law.

CONSTITUTION OF THE PUBLIC HEALTH COMMITTEE.

169. The Council considers that in view of the importance of the Public Health Committee of the Association, the work of which includes the consideration of all questions relating to the public health, and the necessity of including in its membership representatives of every type of practice affected, the elected membership of the Committee should be raised, from the present 8, to 12.

The Council recommends:—

Recommendation.—That the A.R.M. 1919, amend the Schedule to the By-laws as to the Public Health Committee, by increasing the number of the Members of that Committee to be elected by the Representative Body and Council, respectively, to 6 each (instead of the present 4 each).

REMUNERATION OF MEDICAL OFFICERS IN PUBLIC HEALTH SERVICES.

170. Having regard to the War conditions, the Council in November 1918, in co-operation with the Society of Medical Officers of Health, urged on the Local Authorities in the United Kingdom under the control of the Local Government Board, the necessity of increasing the salaries of all Medical Officers of Health, School Medical Officers and other Medical Officers or Assistant Medical Officers in their employ, by 33½ per cent. over pre-War rates, irrespective of any increase of salary according to scale, or grant for special or additional services, such as maternity and child welfare, venereal diseases, etc., since the War began. The Council also urged that any such increase should take effect as from July 1918. The Council is glad to report that this effort in many cases had the desired effect, and expressions of thanks have been received from many of the officers concerned. It is intended, as and when information comes to the Central Office as to vacancies in such appointments, to press on the Local Authority concerned that the salaries be so increased, where not already done.

171. The above-mentioned action of the Association did not include Poor Law Medical Officers. While not able as matters stand to urge on Boards of Guardians generally that the salaries of Poor Law Medical Officers be increased by 33½ per cent., the Council is prepared, where in any particular case a good claim is shown for increased salary, to support any such application made to the Guardians which the local Division has approved.

PUBLIC HEALTH AND POOR LAW APPOINTMENTS.

172. The policy of the Association has been supported by energetic action in connection with numerous public health and poor law posts. With few exceptions, the efforts of the Association have been successful. Several of the cases raised the principle adopted by the Association many years ago, that no distinction shall be made on the ground of sex as regards the remuneration to be paid to women practitioners. The Council is glad to report that, in every such case dealt with, the Council has vindicated this important principle, the remuneration of the women practitioners concerned being brought up to the level of that of their male colleagues doing similar work.

NON-PRODUCTION OF RELIEVING OFFICER'S ORDER.

173. Representations were made to the Association by a District Medical Officer that, in a case which he attended, the Relieving Officer's Order was not produced until after the death of the patient. The Council therefore intimated to the L.G.B. its opinion that unless a District Medical Officer received a Relieving Officer's Order or other official intimation that a case which he was called upon to attend was one which was entitled to gratuitous attendance from him, he would be justified in regarding the person as a private patient and in making his customary charge for attendance; and that an order produced only after death of the patient and delivery of the doctor's account, should not be valid. The Board replied that it would not consider attendance given by a doctor in the course of his private practice, and without any intimation until after the patient's death that an order for his attendance as District Medical Officer had been given, as attendance given in that capacity.

REMOVAL TO HOSPITAL OF CASES OF INFECTIOUS DISEASE.

174. The Council has considered Min. 97 of the A.R.M. 1918. (1) regretting the issue of a circular by the Metropolitan Asylums Board in July, 1918, which proposed to restrict the removal of cases of infectious disease to hospital, and (2) expressing the opinion that temporary hospitals might be provided for isolation of such cases. The Council was of opinion that no action should be taken in the matter, in view of the urgent (and only temporary) need for placing additional beds at the disposal of the Military Authorities.

SUPERANNUATION OF MEDICAL OFFICERS.

175. In October 1918, the Government appointed a Departmental Committee on Superannuation of Persons Employed by Local Authorities. The Association requested to be allowed to give evidence before the Committee as to the need for provision for superannuation of the medical officers in the employ of those Authorities. As a result the Council has by invitation placed before the Committee a Memorandum on the subject.

MILK WARRANTY.

176. Representations were made by the Council to the L.G.B. as to the desirability of bringing the Milk and Dairies Act, 1914, into immediate operation. In reply the Council was informed that that Act had been repealed by the Milk and Dairies (Consolidation) Act, 1915. Section 21 of the latter provides that the Act, which contains important provisions for supervision of the milk supply, shall come into operation on such date, not being later than one year after the end of the War, as the L.G.B. may by Order appoint. The L.G.B. further stated that while it desired to bring the Act into force as soon as possible, it was unable to indicate when this would be. The Council has urged that the Act be made operative at the earliest possible moment.

CO-OPERATION WITH POOR LAW MEDICAL OFFICERS AND MEDICAL OFFICERS OF HEALTH.

177. Valuable co-operation has continued between the Association, the Association of Poor Law Medical Officers, and the Society of Medical Officers of Health, through the Poor Law Medical Officers and Medical Officers of Health Sub-Committees.

EXAMINATION OF DISCHARGED SOLDIERS AS TO TUBERCULOSIS.

178. An Acting Medical Officer of Health raised the question of a requirement of his County Council that the fees payable to Tuberculosis Officers in respect of discharged soldiers examined and reported upon with respect to tuberculosis were to be paid to the County Council. The Council has expressed the opinion that all extra work not contemplated by the terms of an appointment should be paid for.

SCALES OF MINIMUM SALARIES FOR WHOLE-TIME MEDICAL OFFICERS.

179. The great depreciation in the value of money, and the recent development of venereal diseases and maternity and child welfare appointments, has brought out certain anomalies in the scales of minimum salaries, fixed by the Association at different times, which require consideration. The matter has therefore been referred to a Joint Sub-Committee of the Medical and Public Health Committees.

UNDER CONSIDERATION.

180. Venereal disease clinics.

Naval and Military.

THE ROYAL AIR FORCE MEDICAL SERVICE AND THE ASSOCIATION.

181. The Council has considered the position created by the formation of the R.A.F. Medical Service. In view of the importance of the new Service, the Council is of opinion that it should be put on all fours with the other Services as regards (1) the non-necessity of approving signatures in respect of applications for membership of the Association; (2) representation in the Naval and Military Committee of the Association; (3) provision in the reference to that Committee; and (4) representation in the Council of the Association.

The Council recommends:—

Recommendation.—That the A.R.M. 1919 make the following amendments in the By-laws in respect of the Royal Air Force Medical Service, and applications by Officers of that Service for membership of the Association:—

(a) That By-law 7, as to election of Officers of the Services, be amended by insertion, after the word "Army", of the words "Air Force"; and substitution of the word "Services" for "Service";

(b) That the Schedule to the By-laws as to the Naval and Military Committee, 2nd column ("Additional Members *ex officio*") be amended by insertion, after the words "Army Medical Service," of the words "the Royal Air Force Medical Service"; and, 6th column ("Duties, Powers, etc."), by insertion, after the words "Army Medical Service," of the words "the Royal Air Force Medical Service";

(c) That By-law 46 (e) ("Composition of Council") be amended by insertion, after the words "Army Medical Service," of the words "the Royal Air Force Medical Service"; and that, consequentially, the words "Air Force" be inserted after the word "Army" in By-law 42 (1) and (3) ("Voting at Representative Meetings"); and the words "the Royal Air Force Medical Service" after the words "Army Medical Service" in By-law 52 (2) ("Term of Office of Members of Council").

INDIAN MEDICAL SERVICE.

182. A Deputation of representatives of the Association was received by the Secretary of State for India on June 27th, 1918, and the question of the means by which the Indian Medical Service might be reformed so as to make it more attractive to the best kind of practitioner was discussed. A full report of the proceedings at the Deputation was published in the *B.M.J. Supplement* of July 6th, 1918.

183. The various Memorandums of the Association on the Indian Medical Service question, together with a report of the Deputation to the Secretary of State of June 27th, 1918, were re-printed in pamphlet form and circulated, in February 1919, to every officer of the Service.

184. In response to further representations and requests by the Association, the Secretary of State intimated that he would receive a Deputation from the Association and make a communication upon the points at issue. The Deputation took place on February 10th 1919. A full report of the proceedings was published in the *B.M.J. Supplement* of February 15th 1919 (page 19), from which it will be realised that considerably improved conditions of service have been secured by the Association for the officers of the Indian Medical Service, including an increase of 33½ per cent. on the rates of military grade pay.

185. It is desired specially to draw the attention of Members to the following testimony to the status and influence of the Association by the Secretary of State for India to the Deputation:—

"I therefore thought it wise to ask you to come here to-day and to tell you myself what had been done and what was being done, because I thought I could produce to you satisfactory results of the representations that you made last year, and because I thought I had grounds, with confidence, to ask you, as representatives of your great and influential Association, to assist us in recruiting the medical officers whose services we so much need."

186. The Deputation, after hearing the particulars as to the improved conditions of service, felt that it could not do otherwise than give the desired promise to help the Government as regards the recruiting of officers for the Indian Medical Service. The Deputation also expressed, on behalf of the Association, its appreciation of the sympathetic way in which the Secretary of State had dealt with the matter. The Council has cordially endorsed the action of the Deputation, and recommends:—

Recommendation.—That the Association place on record its appreciation of the action of the Government in increasing the pay of officers of the Indian Medical Service and otherwise improving the conditions of service, and its approval of the undertaking given by the Deputation from the Association to the Secretary of State for India on February 10th, 1919, that the Association should use its influence in securing officers for the Service.

It is understood unofficially that the officers of the Service will continue to receive the old staff pay, in addition to the 33½ per cent. increase on the old grade pay.

187. The Council has cordially thanked and congratulated the Chairman of the Naval and Military Committee (Lt. Col. R. H. Elliot, I.M.S.) for his work in connection with the Indian Medical Service question, and for having sustained and enhanced the position of the Association as an influential factor in Service questions.

PAY OF OFFICERS OF R.A.M.C., TERRITORIAL FORCE AND
SPECIAL RESERVE.

188. As will be remembered, the Government negated Recommendation (i.) of the Departmental Committee, as to putting officers of the R.A.M.C. Territorial Force and Special Reserve, who joined before the War, on a level with temporarily commissioned contract officers as regards pay, allowances and gratuities where they would gain thereby.

189. The Council addressed to every member of the War Cabinet on May 17th, 1918, a communication urging that, failing acceptance by the Government of that Recommendation, the Government should equalise the position of junior officers of the R.A.M.C. (T.F.) and Special Reserve, and temporary officers of the R.A.M.C., by increasing by the requisite amount the gratuity to which the first two classes were entitled on demobilisation. A similar letter was sent to the War Office on the same date. A reply dated June 1st, 1918, was received from the latter that, in view of the decision of the Government that no change should be made, the question could not be re-opened.

190. At the request of the Association, questions were asked in the House by Commander Bellairs. The Financial Secretary of the War Office replied that he had nothing to add to his

previous replies, which had been to the effect that the junior officers in the R.A.M.C. (T.F.) and Special Reserve got the same emoluments as regular officers in the R.A.M.C.

191. Subsequently, in co-operation with Commander Bellairs, a letter was, in December, 1918, sent to all Members of Parliament, urging them to support the adoption of the Recommendation of the Departmental Committee. As a result, 166 Members promised to support any action taken in support of the Recommendation, but owing to the dissolution of Parliament, it was not found possible to take any further action at that time.

192. The Council has now decided to ask Mr. A. B. Raper, M.P., and Major A. C. Farquharson, M.P., to raise the matter in Parliament by questions, and to request Major Farquharson to communicate with those Members of the present Parliament who, as Members of the old Parliament, promised their support.

MEDICAL WOMEN EMPLOYED BY WAR OFFICE.

(See also para. 21).

193. The A.R.M., 1918 (Min. 36) instructed the Council to enquire into the conditions under which medical practitioners were serving with H.M. Forces, and that, should it be found that the conditions under which women were serving were in conflict with the policy of the Association that no distinction be made on the ground of sex as regards the emoluments to be paid to women practitioners, steps should be taken to give effect to that policy.

194. The Council communicated with the Ministry of National Service, drew its attention to the anomalies of the position in which medical women who were employed on whole-time service under the War Office found themselves, and asked to be informed of the arguments of the military authorities in favour of the present procedure. In reply, the Council was furnished with copies of the agreements for medical women employed (a) with the Q.M.A.A.C., (b) for general service at home or abroad with the R.A.M.C., (c) for general duty at home only, and was informed that in none of these cases were commissions given; that it was not proposed to grant them; and that, as regards class (c), the women were in the same position as male civilian practitioners similarly employed at home.

195. It is contended by medical women employed under the War Office that, having no rank or status, there is, therefore, no promotion, however long and satisfactory their service may be. They are superseded by any newly-joined temporary R.A.M.C. man. There is no graduated pay (all at 24s. per day except two, who have consolidated pay at £700 per annum), and many anomalies arise from the absence of commissioned rank.

196. The Council came to the conclusion that these members of the profession have a real grievance which could only be relieved by putting them on a level with men who are doing the same work. The Council therefore pressed upon the War Office the claim of medical women employed whole-time, for the same commissioned rank and conditions as obtain for medical men similarly employed.

197. Similar action was being taken by the Medical Women's Federation, with the result that Lord Peel, Under-Secretary of State for War, received on March 28th, 1919, a Joint Deputation of both bodies. He has promised to place the views of the Deputation before the Secretary of State for War.

GRATUITIES TO EX-SERVICE PRACTITIONERS: ACTING RANK.

198. The Council successfully took up with the War Office the question of the injustice inflicted upon Territorial Officers by the authorities first changing higher temporary rank to acting rank, and then deciding that gratuities would only be payable on the substantive or temporary rank held, and not on acting rank. That decision has now been reversed, and gratuities are payable on acting rank.

ACTION TAKEN ON BEHALF OF SERVICE MEMBERS.

199. The Council has given advice and assistance to a large number of Members in the Services in connection with questions of difficulty cropping up, of which the following is typical:—

A Major complained to the Association and asked for advice, in that, having fallen sick on April 9th, 1918, he was not boarded out of the Army as permanently unfit until August 14th, and on August 28th was informed by Messrs. Holt that they had been authorised to pay him his gratuity, and that his pay had ceased from April 9th. The practitioner in question not being a Member of the Association, was informed that, while the Association sympathised with him, it could not take up his case with

the Military Authorities, as in all probability it would be informed that it was interfering in a matter in which it had no direct concern. He immediately joined the Association, whereupon representations were made to the War Office. As a result, he was informed by the War Office that they had instructed the Army Agents to pay him up to August 14th, 1918, which decision carried with it the gratuity he claimed, his claim being thus conceded.

200. This instance is given to point a moral which is not always appreciated by Members, namely, that employers and Government Departments will often concede to a practitioner who proves that he has the Association at his back, what they decline to grant to the individual. The Council is always glad to use the influence of the Association in cases which examination proves to be genuine grievances of a professional nature.

ROYAL NAVY MEDICAL SERVICE.

201. In 1914 the Council memorialised the Admiralty as to the necessity for improvement in the conditions of the Royal Navy Medical Service, which was causing a shortage of officers in that Service. A detailed Memorandum on the question was forwarded to the Admiralty by the Council in July, 1914. Owing to the intervention of the War, it has not been possible to take any further steps in the matter. The Council is of opinion that the time has come for the question to be again taken up, and a Special Sub-Committee of the Naval and Military Committee has been appointed to deal with it.

Scotland.

202. The Scottish Committee appointed Dr. James R. Drever, Glasgow, Chairman; Dr. John Goff, Bothwell, Vice-Chairman; and Dr. R. C. Buist, Dundee, Hon. Secretary for the current year.

MINISTRY OF HEALTH: SCOTTISH BOARD OF HEALTH BILL.

203. The Committee carefully considered the proposal of the Government to establish a Ministry of Health. A Conference was called by representatives of the various medical bodies in Scotland to consider the desirability of forming a Joint Committee to deal with the subject. The Scottish Committee decided to co-operate with the Corporations and other medical bodies in the formation of a Joint Scottish Ministry of Health Committee, and resolved that such co-operation should continue so long as the general principles defined by the Association could be secured, and that an endeavour be made to secure that all the members of the Scottish Committee should be members of the Joint Committee. It was further decided that the Committee should offer to contribute half of the working expenses of the Joint Committee.

204. At the Conference it was agreed to form a Joint Committee to collect and formulate the views of Scottish members of the profession on the proposals for establishment of a Ministry of Health, and on other important problems of medical reconstruction. It was agreed that the Joint Committee be constituted as follows:—(i.) the members of the Scottish Branch of the General Medical Council (9); (ii.) the Scottish members of the Scottish Committee (18); (iii.) one representative from each of the Universities (4); (iv.) two representatives from each of the Licensing Corporations (6); (v.) two representatives from the Society of Medical Officers of Health (2); (vi.) one representative of women practitioners (1); and (vii.) four additional co-opted members (4). A report by the Joint Committee was published in the *British Medical Journal* of March 15th, 1919 (p. 324).

205. The Scottish Committee has invited the Divisions and Branches in Scotland to hold meetings forthwith to consider the Scottish Board of Health Bill, and to forward their opinions to the Scottish Committee without delay. The text of the Bill was published in the *B.M.J. Supplement* of April 5th, 1919 (p. 53).

POSITION OF MEDICAL PRACTITIONERS IN THE HIGHLANDS AND ISLANDS.

206. The Highlands and Islands Sub-Committee, which was established last year, attended by invitation before the Highlands and Islands Medical Service Board in 1918, and discussed various points at issue. The Sub-Committee issued to the practitioners concerned a statement showing the result of the deputation, and the position adopted by the Board.

207. The Committee decided (1) that the members of its Highlands and Islands Sub-Committee, other than those appointed by the Committee itself, should be elected by the respective Constituencies in the Highlands and Islands, by the method of transferable vote; (2) that one member be

elected for each of the counties of Argyll, Caithness, Inverness, Ross and Cromarty, Sutherland, Orkney, Shetland, and the Highland District of the County of Perth; (3) that each practitioner serving under the Board be entitled to nominate and to vote; and (4) that the elections be based on nominations by Members resident in the respective areas, and conducted by post. The election of 6 representatives on the Sub-Committee by practitioners serving under the Board has now been completed. Dr. A. C. Miller, Fort William, has been appointed Chairman.

208. The Sub-Committee has met and decided to review alternative schemes of service in lieu of the one at present in operation. Meantime the Committee has informed the Board of the result of the elections by practitioners; of the consequent status of the Sub-committee as representing Highland and Islands practitioners; and of its intention to submit proposals as to improvements in the Service.

MEDICAL FEES UNDER MIDWIVES (SCOTLAND) ACT.

209. The Committee has considered the scales of fees allowed to medical practitioners in Scotland and England under the respective Midwives Acts, and has forwarded both scales to the Divisions and Branches in Scotland, asking for their views. There is considerable discrepancy between the two scales, and it is the intention of the Committee to try to bring them into unison.

POSITION OF COLLIERY DOCTORS ABSENT ON SERVICE.

210. Representations were made by the Committee to colliery owners on behalf of doctors absent on service, asking the owners to give what facilities were possible in order that miners might be aware of the names of these doctors when arranging for medical attendance for their families.

EXTENSION OF POWERS OF SCOTTISH COMMITTEE.

211. As a Board of Health is to be set up in Scotland, distinct from the Ministry of Health of England, and further divergence of legislation and administration is probable, some extension of the powers of the Scottish Committee has now become necessary. It is not proposed, meantime, to raise the difficult question of devolution, but the Council has, as a tentative measure, empowered the Committee to convene, on occasions of special urgency, meetings of the Scottish Representatives. Such meetings will serve the useful purpose of eliciting and focussing Scottish professional opinion upon matters purely Scottish. The functions of such meetings will be purely deliberative, and decisions arrived at will be reported to the Council through the Committee.

UNDER CONSIDERATION.

212. Representation of the profession upon County Councils and other Local Authorities whose duties concern the health of the community.

213. Nurses' Registration Bill.

Ireland.

ELECTION OF CHAIRMAN AND VICE-CHAIRMAN.

214. Owing to the War and the epidemic of influenza having made such demands on the time of the profession, the Irish Committee has not met as frequently as in other years. At the meeting of the Committee held in January, 1919, Dr. J. S. Darling, Lurgan, co. Armagh, and Dr. Denis Walsh, Craigue, co. Kilkenny, were elected Chairman and Vice-Chairman respectively.

REMUNERATION OF POOR LAW MEDICAL OFFICERS.

215. The Irish Medical Secretary organised in March and April, 1918, a meeting of delegates representative of the entire Irish profession. The meeting was held on May 29th, 1918, and was well attended by representatives of the profession from all parts of Ireland. The principal business transacted was in regard to the salaries and conditions of service of Poor Law Medical Officers. The meeting also passed a resolution in favour of extension of Medical Benefits to Ireland on conditions acceptable to the profession and suitable to the needs of the country. By direction of the meeting, applications were forwarded to all the Boards of Guardians in Ireland for increased salaries for their Poor Law Medical Officers. Many of the Boards readily admitted the inadequacy of the salaries of their Poor Law Medical Officers, and, in some instances, granted fairly substantial increases in the case of doctors with long service. It was, however, a cause of much disappointment to find subsequently that the Irish Local

Government Board refused to sanction maximal salaries of £250 per annum on the ground of their being excessive.

216. In connection with this action of the Local Government Board, a Deputation of Poor Law Medical Officers, accompanied by the Rt. Hon. M. F. Cox, M.D., and the Irish Medical Secretary, waited on that Board. The Deputation gave a detailed account of the financial difficulties of Poor Law Medical Officers in discharging their duties efficiently owing to their inadequate salaries, and pointed out that, as the result of the war, these difficulties had become impossibilities in consequence of the enormous increase in the cost of living and travelling. Soon after the Deputation, the Local Government Board communicated with the Boards of Guardians concerned and informed them that, as the result of the representations of the Deputation, it had decided to sanction maximal salaries of £250 per annum in the case of medical officers who had completed fifteen years service and upwards.

217. During the year, the Irish Medical Secretary addressed Boards of Guardians in different Counties regarding the inadequacy of the salaries of Poor Law Medical Officers, and in many cases succeeded in obtaining substantial increases.

DOMICILIARY TREATMENT OF DISCHARGED AND DISABLED SOLDIERS.

218. The Committee made representations to the Ministry of Pensions with regard to the provision of medical treatment for disabled and discharged soldiers and sailors in Ireland. Arising out of these representations, an official of the Ministry of Pensions attended a conference between the Medical Commissioners of the Irish Local Government Board, the Irish Insurance Commission, and representatives of the Irish medical profession. The terms of remuneration (agreed upon by the members of the conference on a capitation basis to include the cost of medicines and a defined list of appliances) were as follows: In urban areas 12s. 6d., in rural areas 15s.; the payment for certification under the Insurance Act to be extra—namely, in borough and larger urban areas 1s. 3d., urban-rural areas 2s., and rural areas 2s. 6d. per capita. The administration of the scheme was, after considerable delay, entrusted to the Irish Insurance Commission, who, instead of the panel system, adopted the principle of payment "for work done." The representatives of the profession adopted the scheme of payment for work done with some reluctance, owing to what they considered the very serious defect that such a scheme did not guarantee a fixed minimum remuneration. The Insurance Commission, however, undertook to alter the scheme if, after a trial, it did not prove satisfactory to the profession.

MINISTRY OF HEALTH FOR IRELAND.

219. The Committee made representations to the chief Government Departments concerned in the administration of health, with regard to the necessity for the establishment of a Ministry of Health in Ireland. The Irish medical profession and the Irish public were practically unanimous in favour of a separate Bill to deal with the peculiar position of public health in Ireland. Though the Government did not meet the unanimous Irish demand for a separate measure, it has accepted very important amendments which it is believed will provide the means of undertaking a very radical reform of the out-of-date health services existing at the present time in Ireland. The amendments accepted by the Government provide for the formation of an Irish Public Health Council, with a medical man as Chairman. This Council shall, as at first constituted, include the Commissioners of the Local Government Board, Irish Insurance Commission, Registrar-General for Ireland, and the officials of other Irish Departments concerned in the administration of health questions. In addition, there will be nominated by the Chief Secretary three medical members, of whom one must be a woman. There will be also on the Public Health Council representatives of the Approved Societies and local health authorities, e.g., the County Councils. Though the Chief Secretary did not accept the proposal of the medical deputation which recently waited on him, that the medical members of the Council should be elected by the medical profession, he has, in reply to a letter addressed to him by the Irish Medical Secretary as to this proposal, stated that when about to nominate the medical members of the Council, he would consider if it were possible to submit their names for the views of the profession.

THE IRISH MEDICAL WAR COMMITTEE.

220. The Irish Medical War Committee is still at work, and through a Sub-Committee makes all the necessary inquiries in connection with the demobilisation of Irish doctors who have been serving in the different medical War services.

Oversea Branches.

RELATIONSHIP BETWEEN THE OVERSEA BODIES AND THE PARENT ASSOCIATION.

221. On the initiative of Lt.-Col. W. T. Hayward, C.M.G., President of the Australian Federal Committee, the Council in January 1918, addressed a letter to the Oversea bodies as to the question of the relationship between them and the parent body. In response, several Branches and Divisions have made suggestions for more effective co-operation between the Association overseas and at home. The Council is now conferring with these Branches and Divisions on the subjects raised.

EAST AFRICAN MEDICAL SERVICE.

222. The Council had before it (i) a petition sent to the Colonial Office by the Medical Officers of the Protectorates of British East Africa, Uganda, Nyasaland, Somaliland and Zanzibar, pressing for improvement of the Medical Services in those Protectorates, and for the formation of an East African Medical Service to include the whole of the protectorates and any contiguous territories ultimately absorbed; (ii) a request that the Association should support the Medical Officers in their endeavours to obtain better conditions of service. The Dominions Committee also had an opportunity of discussing the subject with representatives of the East African and Uganda Medical Services, who drew special attention to certain points of unfairness and hardship. As a result, it has been demonstrated to the Council that the terms and conditions of medical service in the East African Protectorates are greatly inferior to those of the West African Medical Staff.

223. There appears to be a strong impression in the minds of certain Government officials that the climatic conditions in East Africa are much better than those of West Africa. It would seem that this impression is largely responsible for the difference in pay in East and West Africa. The Council is, however, able to state on good authority that the health conditions in East Africa are, generally speaking, not better than in West Africa.

224. A communication was therefore addressed to the Secretary of State for the Colonies on January 21st, 1919, stating (a) that the Association had had under consideration the terms and conditions of service of the East African Medical Service, and was satisfied that an immediate improvement in the rates of remuneration would alone remove the deep and widespread discontent prevailing among the members of that Service; (b) that unless such improvement could be brought about it would be impossible to get practitioners of the right type to join, or to obtain the best work from those already in the service; and (c) asking him to receive a deputation which would place before him in greater detail the views which the Association had formed as a result of careful enquiry into the conditions of medical service in British East Africa and adjacent territories.

225. The Secretary of State replied on February 17th, 1919, (a) forwarding a copy of the new edition of the pamphlet relating to colonial medical appointments (Miscellaneous, No. 99, 26th edition); (b) pointing out that in the new edition were embodied the revised scale of salaries for the medical staff in the East African Protectorates which had now been adopted, and which would apply to the vacancies now being advertised in the medical press; and (c) stating that in view of the steps thus taken to improve the conditions of service, he doubted if the proposed deputation from the Association was necessary at this stage, but that, if desired, the head of the East African Department would be happy to see a representative of the Association at the Colonial Office on the subject.

226. Accordingly, on March 5th, 1919, Lt.-Col. Newland, Chairman of the Dominions Committee, and the Deputy Medical Secretary, had a conference at the Colonial Office with the head of the East African Department. Col. Newland expressed regret that Lord Milner had not considered it necessary to receive a deputation from the Association as to the terms and conditions of service of the East African Medical Service, as although the increased rates of remuneration authorised in the Memorandum No. 99 of February 1919 were recognised as a very substantial improvement, there still remained a somewhat serious discrepancy between the remuneration of the East African Medical Service and that of the West African Medical Staff. He especially emphasised (1) that the regulations as to pension were not improved; (2) that the salaries of the senior appointments were not nearly up to the level of similar appointments in the West African Medical Staff; (3) that the duty allowances were only half of the amount allowed to the West African Medical Staff; and (4) that no opportunity had been afforded to retire from the Service with gratuity after nine years' service. He also urged

the establishment of a General Medical Service for the whole of the territories in Africa under the administration of the Colonial Office, and suggested that an amalgamation, wherever possible, of the medical services of adjacent Colonies would be a great advantage.

227. The Council is now pressing for an interview of representatives of the Dominions Committee with Lord Milner on the subject, and is pointing out that until the Association has his assurance that the following points will be conceded, it will not take upon itself the responsibility of recommending practitioners to join the East African Medical Service :—

(i.) That the new scale of salaries attaching to posts under the East African Medical Services shall apply *pro rata* to officers already in the service ;

(ii.) that the new scale shall be subject to any general increase of remuneration applicable to the whole of the staff of the Service in respect of the increased cost of living ;

(iii.) that the option of retiring with a gratuity applying to the West African Medical Service shall be made to apply at once to the East African Medical Service ;

(iv.) that arrangements be made for the inauguration of study leave, as obtains in the Indian Medical Service ;

(v.) that consideration be given to the inadequate number of senior posts in the Services, and the consequent lack of opportunities for promotion.

QUESTION OF A GENERAL MEDICAL SERVICE FOR THE CROWN COLONIES AND PROTECTORATES.

228. The Council considered the question of the formation of a General Medical Service for the Crown Colonies and Protectorates, and came to the conclusion that the differences in climate and local conditions in different parts of the Empire make separate services essential. It considers, however, that in the best interests of the Empire, the Medical Services of adjacent Colonies should, wherever possible, be amalgamated, and that the Medical Services of all the territories in Africa directly administered by the Colonial Office should be combined in one African Medical Service. This opinion was conveyed to the head of the East African Department by the Chairman of the Dominions Committee at the interview on March 5th, 1919.

POSITION OF PRACTITIONERS OF ALIEN ENEMY NATIONALITY IN THE COLONIES.

229. On the initiative of the Hong Kong and China Branch, the Council has urged the Colonial Office to take such action as shall ensure that practitioners of alien enemy nationality shall only be allowed to practise medicine in British Colonies after the War on diplomas duly accepted and registered by the General Council of Medical Education and Registration of the United Kingdom under the British Medical Acts.

J. A. MACDONALD,

Chairman of Council.

April 16th, 1919.

APPENDIX.

MEMORANDUM ON THE QUESTION OF SCHEMES FOR A SCHOOL MEDICAL SERVICE, SENT TO THE BOARD OF EDUCATION ON JANUARY 21st, 1919.

(See page 77, para. 100, of *Annual Report of Council*).

As a result of Sir George Newman's statement that he would be willing to consider any observations which the British Medical Association might wish to bring before him on the question of schemes for the organisation and functions of School Medical Services, the Medico-Political Committee of the Association has given careful consideration to the matter and would submit the following Memorandum in connection therewith :—

1. It seems necessary that the general purpose of the School Medical Service and the relative importance of its several parts should be impressed on Local Education Authorities. Too many members of these Authorities take the narrow view that the Service is primarily, if not wholly, concerned with the detection and treatment of

physical defects in individual children. The schemes of Authorities have a tendency to devote exclusive or unduly preponderant attention to the intermittent medical or surgical treatment of the diseased child, rather than to embody arrangements for advancing the health and physical development of the whole child population, well or ill. Sir George Newman has said "nothing could be more unscientific or statesmanlike" and the Association trusts that the Board of Education will see that schemes of Local Authorities recognise this fact and place the treatment of school children in its proper perspective.

2. It is clear that to accomplish successfully the main purpose, the intimate co-operation of the medical and the teaching staff is necessary. Such matters as the provision of meals, the supervision of the employment of children and young persons, the organisation of games or of evening play centres, and the ordinary physical exercises in the schools are obviously but parts of the whole, and though the School Medical Officer should of course always be called upon to advise with regard to them, there are reasons why it may be better that these matters should be administered through the Education Officers and Staff rather than by the Medical Department. The particular necessities of individual children, or even modifications with respect to groups of children, from the point of view of health, would, however, be a matter for the Medical Officer as would also, of course, such things as the sanitary condition of school buildings and the control of infectious diseases.

3. A full and complete system of medical inspection is necessary in all cases. The requirements of the Board in this matter as regards Public Elementary Schools are well known and may perhaps be considered adequate. The new Education Act, however, creates new conditions and in this connection the following points are put forward for consideration :—

(a) Medical inspection should be carried out by the School Medical Officer and his medical staff (whole-time officers); rather than by the practitioners of the locality.

(b) In neighbourhoods where both nursery schools and child welfare centres exist, difficulty might arise on account of the child being examined at both places or being taken from one to the other, and in order to secure continuity of the School Medical Service, where adequate medical provision is made in connection with both the School Medical Service and the Child Welfare Centre, it is preferable that inspection should be carried out in connection with the former.

(c) With regard to arrangements for the extension of medical inspection to day continuation schools, secondary schools, other educational institutions, and possibly to private schools and when the Authority for Higher Education is not the same as the Authority for Elementary Education, while the Association is not in a position to express any opinion as regards individual cases it thinks it desirable that provision should be made in the local schemes for continuity of medical inspection and of ancillary services.

4. Every complete scheme should specify the arrangements for the education of special classes of defective children. These are (i.) Blind (ii.) Deaf, or Deaf and Dumb (iii.) Tuberculous or pre-Tuberculous (iv.) Other Physically Defective (v.) Epileptic (vi.) Mentally Defective. There does not seem much difficulty from the medical side with regard to these, provided it is recognised

(a) That the nature of the case is determined by the School Medical Officer ;

(b) That the School Medical Officer may advise as to the nature of the school which is most suitable in any individual case—whether ordinary elementary school, special day school, open air school, residential school, or colony ;

(c) That in the case of an open air school or a school for physically defective children the curriculum is under the control of the Education Officer and Inspector, while the physical exercises (and diet) are under the control of the Medical Department.

5. The Education Act, 1918, makes it compulsory for Local Education Authorities to provide medical and surgical treatment for children educated in public elementary schools ; and gives power to such authorities to provide treatment for young persons attending secondary schools, continuation schools, and certain other educational institutions even though they be under private control and management. It is thus possible for an Education Authority to provide medical treatment which will be available for practically all children and young

persons in the area between two and eighteen years of age. This makes it more than ever necessary for the profession to scrutinise very carefully the schemes under which this provision is made, and the Association trusts that when sanctioning schemes the Board will bear in mind the legitimate interests of the profession in this connection and the importance to the public of the preservation of those interests. Certain provisos are embodied in the Education Acts. Such are :—

- (i.) The Local Education Authority must not establish a general service of domiciliary treatment by medical practitioners ;
- (ii.) The Authority must consider how far they can avail themselves of the services of private medical practitioners ;
- (iii.) The Authority must give suitable publicity to its proposals, and consider any representations made by parents or other persons or bodies of persons interested ;
- (iv.) The Authority may provide treatment by encouraging or assisting the establishment or continuance of voluntary agencies, and may associate with itself representatives of voluntary associations for the purpose.

These legislative provisos are obviously important to the profession, and the Association trusts that the Board of Education will insist that full effect is given to them in connection with every scheme submitted by an Education Authority.

6. Beyond these provisos and the general requirement that all schemes require the sanction of the Board of Education, there are no legislative restrictions on the activities of Local Education Authorities in this direction. The ideas of Authorities as well as the needs of areas vary, and it may be expected that the influence of the Board will be required to curb the propensities of some Authorities as well as to stimulate the activities of others. The Association has noted certain expressions of opinion and intention made in the House of Commons by the President of the Board of Education and in the House of Lords by Government spokesmen, and has noted also those remarks in the Reports of the Chief Medical Officer of the Board which indicate the general character of arrangements which the Board might consider to be "adequate and suitable." Among the latter is the sentence in the Report for 1917, paragraph 35 (d) :—"The Authority will necessarily take account of the extent to which parents secure the treatment of their children by the private practitioner or through existing voluntary agencies." This is satisfactory as far as it goes, but the Association would ask the Board to establish the principle enunciated in a somewhat wider form by the insertion of the word "can" before the word "secure," and, by the omission of the word "voluntary." This seems desirable, not merely to avoid unnecessary interference with established interests, but also to prevent the reduplication of agencies and the overlapping of functions with consequent confusion to the patient and financial waste to the public, and to bring into proper relation to the scheme that necessary domiciliary or institutional treatment which the Local Education Authority cannot itself provide.

7. Existing agencies by which medical advice and treatment can be secured for children and young persons are (i.) Voluntary hospitals, (ii.) Maternity and Child Welfare Centres, (iii.) Tuberculosis Dispensaries, (iv.) The National Health Insurance administration and practitioners working in connection therewith, (v.) Other private practitioners. It seems obviously undesirable that in the same area there should be a Tuberculosis Dispensary, a Child Welfare Centre, and a School Clinic, each open several half-days a week in separate buildings and under separate management, together with possibly an entirely distinct Clinic or Central Surgery attended daily by practitioners working under the Insurance Acts. Again, though existing hospitals may obviously be utilised quite properly by Education Authorities for certain cases found to be in need of treatment that can best be provided in such an institution, it would seem undesirable that Education Authorities should be permitted themselves to establish or maintain an entirely new series of hospitals of their own. Further, the divorcement of private (or Insurance) practitioners who are concerned with the children in their homes from participation in the work of a Centre or Clinic would seem most undesirable. The Association is of opinion that Local Authorities should be encouraged to utilise the services of local private practitioners in connection with their schemes.

8. The position in connection with the National Health Insurance Scheme may perhaps be worthy of somewhat closer examination, especially as its possibilities do not

seem to be fully recognised by either the profession or members of Education Authorities. There are three categories of persons who may be provided with treatment through the School Medical Service who are, or may be, brought under the National Insurance Scheme. There are, (a) those who are already compulsory contributors—employed persons between 16 and 18 years' of age attending continuation schools ; (b) those who may at any time be provided for under the National Health Insurance Acts without any further legislation—the dependents of insured persons who are members of an Approved Society, which, after valuation, decides to provide medical treatment for them, and the dependents of insured persons in any area where the Insurance Committee passes a resolution to extend "Sanatorium Benefit" to them ; (c) all other dependents of insured persons, those for whom medical advice and treatment could not be provided without further legislation, but concerning whose inclusion in the Insurance Scheme discussions are now taking place. It is clear that if all these classes were included, almost the whole of the children in the schools would be provided for apart from the School Medical Service altogether, and that even if no further legislation takes place the first two classes may include large numbers of the children and young persons, and that for them the Insurance Scheme would offer a more complete provision than the School Medical Service, including, as it would, domiciliary attendance.

9. In view of the above considerations, it is suggested that all schemes might well contain such provisions as the following :—

(i.) All cases found to require treatment should be directed to obtain it by or through the medical attendant of the patient or family, if there be such a practitioner.

(ii.) In cases where there is no family practitioner but in which the parent is willing to consult one, advice should be given to obtain treatment by or through a private practitioner.

(iii.) In cases where treatment is to be obtained from a private practitioner, arrangements should be made, wherever possible, for direct communication between the School Medical Officer and the private practitioner concerned.

(iv.) The forms of treatment which an Authority provides should, speaking generally, be limited to certain common defects which permit of a more or less direct remedy. Such will be (a) cleansing and treatment for verminous conditions and scabies, (b) ringworm, (c) errors of refraction, (d) dental conditions, (e) enlarged tonsils and adenoids, (f) certain minor ailments, *which should in general terms be specified.*

(v.) Such treatment, when provided by the Authority, in cases which can most suitably be dealt with in this way, should be obtained by referring the case to a private practitioner, who should be required to act under the administrative supervision of the School Medical Officer and to keep such records as are required by him.

(vi.) Where a School Clinic is established it should be staffed, wherever possible, by the part-time attendance of private practitioners, whether specialists or general practitioners, provided always that such practitioners act under the administrative supervision of the School Medical Officer and keep such records as are required by him, and, when a School Clinic can be staffed by the part-time attendance of the general practitioners of the locality, such an arrangement should be encouraged.

(vii.) Cases of Tuberculosis not able or not willing to obtain treatment by or through a private practitioner should be referred to the Tuberculosis Dispensary or Officer.

(viii.) Cases requiring institutional treatment should be dealt with by an agreement between the Education Authority and a Voluntary Hospital, such agreement always containing provision for payment being made to the Hospital sufficient to cover not merely the maintenance of the patient therein, but a suitable sum to be placed at the disposal of the medical staff of the Hospital.*

(ix.) No person for whom suitable provision is made under the National Insurance (Health) Acts should be treated under the School Medical Service.

* The payments for treatment should be paid by the governing body of the Hospital into a Staff Fund and not to individual members of the Staff, and the Staff should itself decide the way in which this fund should be used.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Overseas bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting proposing to make any addition to, or any amendment, alteration, or repeal of any regulation or by-law, or to make any new regulation or by-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 15th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches this year in connexion with the Representative Meeting. Particulars as to the date and hour of the Conference will be announced later. Honorary Secretaries are reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

ANNUAL GENERAL MEETING.

NOTICE is hereby given by the Council that the Annual General Meeting of the British Medical Association will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 25th, 1919, at 2 o'clock in the afternoon. Business: (1) Minutes of last meeting. (2) Appointment of auditors (Messrs. Price, Waterhouse and Co. offer themselves for re-election). (3) Report election of President.—By Order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

Dated this 3rd day of May, 1919.

ELECTION OF COUNCIL, 1919-20.

NOTICE is hereby given that nominations for candidates for election as Members of Council by Branches or Groups of Branches in the United Kingdom for the year 1919-20 must be forwarded to reach the Acting Secretary, at the Office of the Association, not later than Saturday, May 17th, 1919. Each nomination must be on the prescribed form, copies of which will be furnished by him upon application.

Separate forms have been prepared:

- For a nomination by a Division, and
- For a nomination by any three Members of a Branch respectively.

Those applying are requested to state for which purpose the form is desired.

An announcement of the Nominations received will be made in the JOURNAL of May 24th.

Election will be by voting papers. These papers will contain the names of all duly nominated candidates, and will be issued from the Central Office on Saturday, June 7th, and will be returnable not later than Saturday, June 14th.

The result of the election of Members to the Council will be published in the JOURNAL of June 21st, or, in the event of there being no contests, earlier.

By Order of the Council,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

May 3rd, 1919.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—Dr. M. J. Oliver, Honorary Secretary (St. Boswells), gives notice that the annual meeting of the Division will be held in the Bailie Memorial Hall, Newtown St. Boswells, on Thursday, May 8th, at 3 p.m.

SOUTH-WESTERN BRANCH: EXETER DIVISION.—Dr. R. Eager, Honorary Secretary, gives notice that the annual meeting of the Exeter Division has been arranged for Thursday, May 8th, at 3 p.m., at the Devon and Exeter Hospital. The desirability of calling a meeting of all members of the local profession to discuss the question of minimum fees will be considered, and the question of forming some medical advisory body as representative of the medical profession in the administrative areas which are likely to be formed under the Ministry of Health will be discussed.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Commander F. H. Nimmo to the *Alexandra*. Surgeon Lieut. Commanders: G. P. Syme to the *King Edward*; A. H. Richardson to the *Wetherby*. Surgeon Lieutenant J. C. Kelly, D.S.O., to the *Stieve Bernagh*. Surgeon Lieutenants (temporary): W. H. Jones to the *Fivid*; D. G. P. Bell, G. B. Tarring, T. N. D'Arcy, and S. O. Rashbrook to Plymouth Hospital; J. T. Johnston to the *Coveyry*; R. Martin to the *Pembroke*; C. W. Armstrong to H.S. *Garth Castle*; A. P. Wyatt to the *Zetland*; F. Grey, C. J. Helsham, P. Lloyd-Williams, E. C. W. Cooke, E. P. Brockman, A. E. Ward, and C. F. Maclean to Haslar Hospital; A. C. H. Halliwell to Chatham Hospital; E. D. Davies to the *Attentive II*; R. H. O. B. Robinson to the *Bruce*; F. A. V. Denning to Portsmouth Dockyard; F. J. Burke to the *Lion*.

ARMY MEDICAL SERVICE.

Colonel R. W. Wright, C.M.G., retires on retired pay, March 14th, 1919 (substituted for the notification in the *London Gazette*, March 5th, 1919).

Captain (acting Major) M. G. Foster, R.A.M.C.T.F., to be temporary Colonel.

Temporary Colonel W. T. Lister relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Major W. D. C. Kelly, D.S.O., relinquishes the temporary rank of Lieutenant-Colonel on reposting.

The following relinquish the acting rank of Lieutenant-Colonel on reposting:—Majors: A. H. McN. Mitchell, R. G. H. Tate, J. A. Turnbull, D.S.O., H. Harding. Temporary Major C. E. M. Lowe. Captains: G. H. Stack, C. E. Franklin, M.C. Temporary Captain K. W. Mackenzie, D.S.O., M.C.

To be acting Lieut.-Colonels whilst in command of a medical unit: Majors B. H. V. Dunbar, D.S.O., C. R. Millar, D.S.O.

Major H. O. M. Beadnell is placed temporarily on the half-pay list on account of ill health.

The following relinquish the acting rank of Major on reposting: Captain B. Varvill, M.C. Temporary Captains: H. V. A. Gatchell, A. W. Rowe, G. W. Fitz-Henry, W. S. Edmund, H. W. Scawin, A. W. S. Christie, R. K. Birnie, D. Green, A. K. H. Pollock, D. C. Ogilvie, M.C., A. G. M. Middleton, M.C., A. G. Cook, M.C., C. J. Sullivan, F. B. Chavasse, M.C., D. J. Stokes, M.C., G. Jackson, M.C., H. W. Powell, W. G. Munford, O.B.E., R. T. Worthington, P. Turner, W. Deane, C. McM. Wilson, M.C., J. Kirton, M.C., A. Mearns, A. E. Hallinan, M.C., T. Winning, P. Henderson, M.C., R. J. T. Thornhill.

Temporary Captains to be acting Majors: H. F. Warwick, M.C., A. W. Dennis, C. A. Dottridge, T. H. Just, G. McMullan, H. M. Anderson, H. E. Clutterbuck, A. R. Esler, H. F. Marris, G. T. Cregan, M.C., C. King (from December 25th, 1918, to February 27th, 1919), W. R. Snodgrass (from January 17th to February 6th, 1919). Whilst specially employed: G. W. B. Waters, G. R. E. Colquhoun, N. M. Grace, A. G. McLeod, W. E. Graves. Whilst commanding troops on a hospital ship: A. J. Beadel.

Captain J. C. Muir (late R.A.M.C.) to be temporary Lieutenant-Colonel whilst employed at the Whipp's Cross War Hospital.

The notifications regarding temporary Captains G. R. Gall and W. H. Johnston and temporary Lieutenant F. H. Boone, published in the *London Gazette* of March 31st, March 18th, and March 28th respectively, are cancelled.

The name of temporary Captain Israel Allau is as now described, and not as in the *London Gazette* of July 10th, 1917, and February 25th, 1918.

Late temporary Captains granted the rank of Captain: A. Gillespie, H. B. Minshull.

Temporary Captain Thomas Forde, M.B., is dismissed the service by sentence of a general court-martial, January 12th, 1919.

The following officers relinquish their commissions: Temporary Lieut.-Colonel H. G. G. Cook, on ceasing to serve with the Welsh Hospital, Netley, and retains the rank of Lieut.-Colonel. Temporary Majors, and retain the rank of Major: S. W. Woollett, February 15th, 1919 (substituted for the notification in the *London Gazette*, March 28th), C. H. G. Ramsbottom, M. Bridgeman. Temporary Captains, and are granted the rank of Major: J. Hendry, J. W. Renton, J. B.

Cook, F. L. Collie. Temporary Captain A. E. Watson, on account of ill health, and retains the rank of Captain. Temporary Captains and retain the rank of Captain: C. L. Lakin, H. A. Grierson, J. L. Hawkes, A. E. A. Carver, P. C. Garrett, B. Beamish, H. F. Davis, N. Dovereux, C. Elliott, R. Farrant, M. C. H. A. Douglas, J. Cameron, A. T. Cooper, C. E. Bartlett, H. G. Drake-Brockman, R. I. Douglas, M. L. Houghes, R. B. Lobban, R. H. Crompton, D. S. Brough, M. C. H. E. T. Dawes, J. B. J. L. Dalby, A. Brown, A. Budd, M. C. W. T. Brown, M. C. S. R. Glead, W. Darlington, L. C. Ferguson, A. H. Bostock, R. S. Harper, N. F. Sinclair, C. Verge, N. P. Boulton, O. R. Belcher, W. F. Addey, H. C. Semon, E. Hudson, R. F. Bolt, F. E. Dowling, C. G. Seligman, J. Jardine, W. K. Eys, J. N. Dobbie, J. F. West, J. Appleyard, S. T. Irwin, F. N. Smith, A. F. Cowan, A. Barrett, C. Wits, M. C. R. M. L. Anderson, J. H. F. Wilgress, W. B. Peacock, G. L. Neil, V. D. C. Wakeford, C. Speers, W. J. Dilling, A. P. Hall, J. R. A. D. Todhunter, J. C. Sale, D. S. O. M. C. G. Eager, T. Sturdy, W. Tregoe, A. P. Gray, P. J. Barry, A. G. Wilkins, J. K. Rennie, M. C. J. S. Alexander, J. R. R. Ritchie, J. H. Iles, A. F. Horn, M. C. T. L. Hardy, J. J. Rigg, H. J. C. Gibson, A. E. Taylor, D. M. Kilgour, G. W. Mitchell, T. J. R. Maguire, C. E. G. Bateman, P. E. Adams, R. J. Datty, G. B. Bartlett, E. B. Barton, A. F. Hewat, J. G. Craig, W. H. Kiep, J. H. Elliott, M. C. F. Butler, L. Bathurst, P. D. Maclean, J. B. Mason, G. A. Williams, E. V. Beaumont, J. W. Bennett, E. L. Ivens, C. W. C. Robinson, W. Shipton, H. B. L. Henderson, G. F. Oldershaw, J. T. Morrison, J. Ferguson, E. A. C. Beard, R. J. Mackessack, J. T. B. Hall, F. N. Marsh, C. O. Bodman, A. V. Stocks, A. E. Carsberg, W. J. Rutherford, M. C. D. H. Clarke, J. H. Clatworthy, M. Clover, A. A. Campbell, L. Kilroe, W. G. Masefield, F. Joyce, A. U. Millar, L. Leslie, W. B. Wylie, H. Corder. Temporary Captain N. S. Gilchrist, O.B.E., on transfer to the R.A.F. Temporary honorary Captains and retain the rank of honorary Captain: J. V. S. Taylor, W. E. Coe, J. Beckett and W. Wilson, on ceasing to serve with the St. John Ambulance Brigade Hospital; F. B. Grinnell, A. B. Pastel. Temporary Lieutenant and retain the rank of Lieutenant: T. D. Homan, D. Davie, R. M. Manwaring-White, G. A. Thompson.

ROYAL AIR FORCE.

Honorary Lieut.-Colonel G. Dreyer relinquishes his commission on ceasing to be employed.
Captain H. R. B. Hull to be acting Major, November 18th, 1918 (substituted for notification in the *London Gazette*, April 8th).
The following are transferred to the unemployed list: Captains T. Gibbins, J. Allen, W. M. Jeffreys, L. C. Blackstone, W. R. Nasmyth, J. Grimoldby.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captain (acting Major) J. A. H. Aitken to be Major.
The following officers relinquish their acting rank on ceasing to be specially employed: Majors (acting Lieut.-Colonels) J. E. Bates, B. M. Rogers. Captains (acting Majors): C. F. M. Saint, J. W. Scott, R. E. Pitts, M. C. F. Prestwick, A. M. Gibson, A. Griffith, H. G. W. Dawson, A. N. S. Carmichael, F. W. Lewis, W. B. Hill, A. J. Gibson, A. M. Hughes, G. M. McGilivray, F. W. K. Tough, R. Armstrong, F. W. Burn, K. A. P. R. Murray, A. R. Paterson.
Captain (acting Lieut.-Colonel) J. R. Menzies reverts to the acting rank of Major on ceasing to command a field ambulance.
Captains to be acting Majors whilst specially employed: A. A. Hington, L. T. Challenor, J. Anderson, A. J. A. McCabe-Dallus, M. C. R. D. Langdale-Kelham, A. Wilson, C. E. W. McDonald, A. W. Scott.
Captain J. Steele relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.
Captain E. P. Minett is seconded for duty under the Colonial Office.
Captain A. MacLennan is restored to the establishment.
1st Eastern General Hospital.—Captain W. L. Murphy is restored to the establishment.
2nd Eastern General Hospital.—Captain C. N. Chadborn is restored to the establishment. Captain (acting Major) W. R. Wood relinquishes his acting rank on ceasing to be specially employed.
1st London Sanitary Company.—Captain (acting Major) G. N. Anderson relinquishes his acting rank on vacating appointment as Deputy Assistant Director of Medical Services.
3rd London General Hospital.—Captain (acting Major) V. Z. Cope relinquishes his acting rank on ceasing to be specially employed.
1st Southern General Hospital.—Captain G. P. Mills is restored to the establishment. Captain (acting Major) S. G. Webb relinquishes his acting rank on ceasing to be specially employed.
2nd Southern General Hospital.—Captain C. A. Moore is restored to the establishment.
3rd Southern General Hospital.—Major (acting Lieut.-Colonel) A. P. Dodds-Parker and Captain (acting Major) A. G. Kewley relinquish their acting rank on ceasing to be specially employed.
5th Southern General Hospital.—Captain (acting Major) H. Burrows, O.B.E., relinquishes his acting rank on ceasing to be specially employed, and remains seconded. Captain P. H. Green to be acting Major whilst specially employed.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Major H. E. Cumming, M.C., retires in the British Isles.
Temporary Lieutenant A. L. Rollet to be temporary Captain.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain (acting Major) A. J. Gibson, D.S.O., to be acting Lieutenant-Colonel whilst in command of a medical unit.
Captain C. J. A. Griffin, D.S.O., relinquishes the acting rank of Lieutenant-Colonel on reposting.
The following Captains relinquish the acting rank of Major on reposting: J. Faulley, (Brevet Major) L. W. O. Taylor, H. C. Crawford, M. C. C. H. G. Penny, P. J. Affkin, M. C. W. S. Haydock, G. F. P. Gibbons, D. C. MacDonald, M. C. L. S. B. Tasker, M. C. J. Rafter, M. C. G. V. Stockdale, D.S.O., A. R. Dale, M. C. W. C. Mackie, E. A. Mills, R. H. Hodges, M. C. G. Marshall, E. C. W. Starling, M. C. F. G. Foster, R. L. Horton, W. O. Tobias, J. R. McCurdie, M. C. J. Stephenson, M. C. J. H. Bayley, M. C. C. F. Burton, M. C. R. P. Ballard, M. C. A. L. Shearwood, M. C.
Captains to be acting Majors: J. Inkster, A. McL. Ferrie, M. C. G. G. Alderson, V. Wiley.
Captain (acting Major) R. Magill, D.S.O., to draw the pay and allowances of his acting rank whilst specially employed.
Captain (acting Major) T. Lindsay relinquishes the pay and allowances of his acting rank.
Captain J. J. Finlay relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

Lieutenants to be Captains: W. L. M. Gabriel, J. Hope, D. M. Jones, A. Robertson, E. R. Batho, M. C. A. E. Clark-Kennedy, W. S. Gross, R. M. Humphreys, P. M. Neighbour, M. C. Paterson, M. C. P. F. Bishop, C. B. Cohen, W. Feldman, R. B. Green, A. V. Pegge, M. C. B. B. Sharp, A. G. Shurlock, G. K. Stone, J. Charnley, J. C. T. Fiddes, R. S. Paterson, F. W. M. Lamb, H. S. Carter, W. N. Goldschmidt.
W. Y. Eccott, from University of Edinburgh Contingent, O.T.C., to be Lieutenant.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

The announcements regarding the following officers which appeared in the *London Gazette* of the dates indicated are cancelled: Lieut.-Colonels (Brevet Colonel) J. R. Kaye (January 11th), (acting Colonel) J. Mackinnon, D.S.O. (January 9th), E. J. Cross (January 21st), W. E. Foggie, D.S.O. (December 31st, 1918), H. W. Thomson, D.S.O. (January 10th), Majors H. L. de Legh (December 4th, 1918), J. S. Y. Rogers, D.S.O. (December 30th, 1918), R. Stirling (January 22nd), A. Ogston (January 18th), J. Bruce (January 9th, 1919), Captain T. H. C. Derham (December 31st, 1918).

Captain J. M. O'Meara, from Eastern Mounted Brigade Field Ambulance, to be Captain, December 8th, 1918 (substituted for notification in the *London Gazette* of January 25th, 1919).

VOLUNTEER FORCE.

Glamorgan R.A.M.C.(V).—Temporary Lieutenant J. Hartigan to be temporary Captain.

Kent Royal Army Medical Corps (V).—Temporary Captain J. Sterry to be temporary Major.

Lancashire R.A.M.C.(V).—Temporary Lieutenant J. D. McVean to be temporary Captain.

Middlesex Royal Army Medical Corps (V), Motor Ambulance Convoy.—To be temporary Lieutenants: F. Becker, L. D. Hughes.

Monmouthshire R.A.M.C.(V).—Temporary Lieutenant G. A. H. Martin to be temporary Captain.

QUEEN MARY'S ARMY AUXILIARY CORPS.

AUXILIARY SECTION, R.A.M.C. ATTACHED.

Medical Officer Dr. Hannah K. Alton relinquishes her appointment.
Medical Controller Dr. M. A. Dobbin Crawford relinquishes her appointment.

APPOINTMENTS.

BAILEY, R. T. M.R.C.S., L.R.C.P., Medical Superintendent, West Dorset Union Infirmary.
HOPPER, A. J., L.M.S.S.A., District Medical Officer of the Sunderland Union.
PERRINS, E. S., L.M.S.S.A., Second Assistant Medical Officer, Bowling Park Institution, Bradford (Yorks) Union.
SCAIGILL, L. W. K., M.D.Camb., Medical Officer, Institution and District, Clebury Mortimer Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGE.

JOHNSTONE—CATHELS.—At Hawick Parish Church, on April 16th, by the Rev. D. Cathels, M.A., Minister of the Parish of Hawick (father of the bride), and the Very Rev. Dr. Wallace Williamson, C.V.O., Minister of St. Giles', Edinburgh, James Johnstone, M.B., Ch.B., D.P.H.Camb., to Jean Gardner Cathels, M.B., Ch.B.

DEATHS.

ALDRIDGE.—On April 19th, at Belle Vue House, Plympton, Devon, Charles Aldridge, M.D., aged 71. (Late of Plympton House).
ROBERTSON.—On April 24th, at St. Anne's, Dulwich, his residence, William Borwick Robertson, M.D., J.P., in his 81st year. Will friends kindly accept this the only intimation?
STAUNTON.—At Redhill, Natal, South Africa, of influenza and pneumonia, Gilbert Patrick Staunton, M.D., C.M., aged 53.

DIARY FOR THE WEEK.

ASSURANCE MEDICAL SOCIETY, 11, Chandos Street, W.1.—Wednesday, 5.0 p.m., Council Meeting. 5.30 p.m., Dr. Lionel Stretton: Surgical Operations as Affecting Life Assurance. Visitors are invited to take part in the discussion.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8.30 p.m., Reception by President and Council of members of the Fellowship of Medicine and medical members of Overseas Forces now in London. 9.0 p.m., Sir St. Clair Thomson: J. C. Lettsom and the foundation of the Medical Society of London 1773.

RÖNTGEN SOCIETY, 1, Wimpole Street, W.1., Tuesday, 8 p.m.—Second Silvanus Thompson Memorial Lecture, by Professor W. M. Bayliss, F.R.S.

ROYAL SOCIETY OF MEDICINE.—Social Evening, Wednesday, 8.30 p.m. Mr. D'Arcy Power: "Old English Surgeons." Section of Surgery:—Wednesday, 5 p.m., Annual Meeting, Mr. J. E. Adams: Carcinoma of the Appendix. Sir John Bland-Sutton: Missiles as Emboli (with Demonstration). Section of Neurology: Thursday, 8 p.m., Annual Meeting and Clinical Evening. Section of Epidemiology and State Medicine: Friday, 5.30 p.m., Annual Meeting. Discussion on "Sydenham as an Epidemiologist," to be opened by Mr. M. Greenwood.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	May.
8 Thur.	Exeter Division, Annual Meeting, Devon and Exeter Hospital, 3 p.m. South-Eastern Counties Division of Edinburgh Branch, Annual Meeting, Baillie Memorial Hall, Newtown St. Boswells, 3 p.m.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 10TH, 1919.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he or she belongs.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

ANNUAL REPRESENTATIVE MEETING, LONDON, 1919.

The Annual Representative Meeting of the Association will be held in London on Thursday, July 24th, 1919, and following day(s) as may be necessary.

PROVISIONAL AGENDA.

(NOTE.—This Provisional Agenda includes only formal items. The great bulk of the work is contained in the reports of action taken.)

ANNUAL REPORT OF COUNCIL.

(The Annual Report of Council was published in the SUPPLEMENT, May 3rd, 1919. The references in brackets are to the paragraphs of this Report.)

PRELIMINARY.

Presidentship.

1. **Motion:** That the following Recommendation of the Council (p. 67) be adopted:

That Sir Thomas Clifford Allbutt, K.C.B., LL.D., F.R.S., be re-elected President of the Association for 1919-20.

Remainder of Annual Report under heading "Preliminary."

2. **Motion:** That the remainder of the Annual Report of the Council under the heading "Preliminary" (pp. 67-9, paras. 1-8) be approved.

FINANCE.

3. **Motion:** That the Annual Report of the Council under the heading "Finance" (pp. 69-71, paras. 9-16) be approved.

CENTRAL MEDICAL WAR COMMITTEE.

4. **Motion:** That the Annual Report of the Council under the heading "Central Medical War Committee" (pp. 71-3, paras. 17-42) be approved.

ORGANIZATION.

Grouping of Branches and Constituencies for Election of Members of the Council.

5. **Motion:** That the following Recommendation of the Council (p. 73, paras. 43-4) be adopted:

That the Representative Body adopt the following Standing Order:

Until further order of the Representative Body, the Council is hereby empowered to prescribe the groupings of the Branches and Divisions for the purpose of the election of Members of the Council by Branches and Divisions and Representatives of Constituencies under By-law 46 (a)-(c), provided that the Council shall not be empowered to make without the consent of the Representative Body any change in the numbers of Members of Council at present allotted to the parts of the United Kingdom—namely, 16 to England and Wales, 4 to Scotland, and 4 to Ireland under By-law 46 (a), and 8 to England and Wales, 2 to Scotland and 2 to Ireland under By-law 46 (c).

Remainder of Annual Report under heading "Organization."

6. **Motion:** That the remainder of the Annual Report of the Council under the heading "Organization" (pp. 73-4, paras. 43-68) be approved.

SCIENCE.

7. **Motion:** That the Annual Report of the Council under the heading "Science" (pp. 74-5, paras. 69-80) be approved.

MEDICAL ETHICS.

8. **Motion:** That the Annual Report of the Council under the heading "Medical Ethics" (pp. 75-6, paras. 81-6) be approved.

MINISTRY OF HEALTH.

9. **Motion:** That the Annual Report of the Council under the heading "Ministry of Health" (pp. 76-7, paras. 87-97) be approved.

MEDICO-POLITICAL.

10. **Motion:** That the Annual report of the Council under the heading "Medico-Political" (pp. 77-80, paras. 98-141) be approved.

MEDICAL REPRESENTATION IN PARLIAMENT FUND.

11. **Motion:** That the Annual Report of the Council under the heading "Medical Representation in Parliament Fund" (p. 80, paras. 142-3) be approved.

NATIONAL HEALTH INSURANCE.

Constitution of Insurance Acts Committee.

12. **Motion:** That the following Recommendation of the Council (pp. 80-1, paras. 144-6) be adopted:

(1) That the Annual Representative Meeting, 1919, amend By-law 69 by inserting after the word "Committees" the words "(which may include persons who are not members of the Association)";

(2) That the column "Otherwise appointed" of the Schedule to the By-laws as to the Insurance Acts Committee be amended to read as follows:

"Registered medical practitioners appointed as follows:

6 such practitioners (being Members of the Association) elected (in the manner prescribed by the Representative Body) by the elected Representatives of the Constituencies formed for the United Kingdom under By-law 33, namely, 4 by all the elected Representatives (acting together) of the Constituencies so formed for England and Wales, and one each by all the elected Representatives (acting together) of the Constituencies so formed for Scotland and for Ireland respectively.

22 such practitioners (whether Members of the Association or not) elected by the 4 Members *ex officio* and the above-mentioned 6 elected Members of the Committee acting together, such 22 practitioners to be nominated or qualified as under—namely:

18 to be selected so far as possible on a territorial basis from among practitioners nominated by the Local Medical Committees and Panel Committees formed in Great Britain under the Insurance Acts;

1 (being a member of the Staff of a Voluntary Hospital) to be nominated by the Hospitals Committee of the Association;

1 to be nominated by the Medical Women's Federation;

1 to be nominated by the Society of Medical Officers of Health;

1 to be nominated by the Poor Law Medical Officers' Association of England and Wales;

with power for the Members of the Committee appointed as above provided to co-opt as additional Members such number (if any) of non-panel practitioners as shall be required to secure that 4 such practitioners shall be Members of the Committee."

Remainder of Annual Report of Council under heading "National Health Insurance."

13. **Motion:** That the remainder of the Annual Report of the Council under the heading "National Health Insurance" (pp. 80-2, paras. 144-68) be approved.

PUBLIC HEALTH AND POOR LAW.

Constitution of Public Health Committee.

14. **Motion:** That the following Recommendation of the Council (pp. 82-3, para. 169) be adopted:

That the Annual Representative Meeting, 1919, amend the Schedule to the By-laws as to the Public Health Committee, by increasing the number of the Members of that Committee to be elected by the Representative Body and Council, respectively, to 6 each (instead of the present 4 each).

Remainder of Annual Report under heading

"Public Health and Poor Law."

15. **Motion:** That the remainder of the Annual Report of the Council under the heading "Public Health and Poor Law" (pp. 82-3, paras. 169-80) be approved.

NAVAL AND MILITARY.

The Royal Air Force Medical Service and the Association.

16. **Motion:** That the following Recommendation of the Council (p. 83, para. 181) be adopted:

That the Annual Representative Meeting, 1919, make the following amendments in the By-laws in respect of the Royal Air Force Medical Service, and applications by Officers of that Service for membership of the Association:

(a) That By-law 7, as to election of Officers of the Services, be amended by insertion, after the word "Army," of the words "Air Force"; and substitution of the word "Services" for "Service."

(b) That the Schedule to the By-laws as to the Naval and Military Committee, 2nd column ("Additional Members *ex officio*"), be amended by insertion, after the words "Army Medical Service," of the words "the Royal Air Force Medical Service"; and, sixth column ("Duties, Powers, etc."), by insertion, after the words "Army Medical Service," of the words "the Royal Air Force Medical Service."

(c) That By-law 46 (e) ("Composition of Council") be amended by insertion, after the words "Army Medical Service," of the words "the Royal Air Force Medical Service"; and that, consequently, the words "Air Force" be inserted

after the word "Army" in By-law 42 (1) and (3) ("Voting at Representative Meetings"); and the words "the Royal Air Force Medical Service" after the words "Army Medical Service" in By-law 52 (2) ("Term of Office of Members of Council").

Remainder of Annual Report under heading "Naval and Military."

17. **Motion:** That the remainder of the Annual Report of the Council under the heading "Naval and Military" (pp. 83-5, paras. 181-201) be approved.

SCOTLAND.

18. **Motion:** That the Annual Report of the Council under the heading "Scotland" (p. 85, paras. 202-13) be approved.

IRELAND.

19. **Motion:** That the Annual Report of the Council under the heading "Ireland" (pp. 85-6, paras. 214-20) be approved.

OVERSEA BRANCHES.

20. **Motion:** That the Annual Report of the Council under the heading "Oversea Branches" (pp. 86-7, paras. 221-9) be approved.

MINISTRY OF HEALTH BILL.

MEDICAL CONSULTATIVE COUNCIL.

THE Council of the British Medical Association has forwarded to Dr. Addison, M.P., President of the Local Government Board, who is in charge of the Ministry of Health Bill, the following scheme for the constitution of the Medical Consultative Council. The scheme is believed to have the general support of the Joint Ministry of Health Committee of the Royal College of Physicians, London, and the Royal College of Surgeons, England, and the Committee of the Royal Society of Medicine, and the Council has stated that it is of opinion that the scheme would be regarded by the medical profession throughout the country as a satisfactory method of appointing the Medical Consultative Council:

That the following be instructions to the "Electoral College" (for constitution see below) as to the constitution of the Medical Advisory Council:

(a) In making appointments to the Council and in nominating persons for appointment the paramount consideration should be representation of varieties of knowledge and experience (both preventive and clinical), the representation of organizations and districts being only secondary.

(b) Among the members appointed, at least seven shall be engaged in general practice, and among those rural practice shall be represented.

(c) Due regard shall be had to the representation of the younger members of the profession.

(i) That the Advisory Council should consist of not more than 24 members, without regard to the methods by which they shall be elected.

Constitution of "Electoral College."

(ii) That triennially an "Electoral College" of six persons be set up, none of whom shall be eligible for appointment on the Advisory Council. This "college" shall consist of the Minister or his representative, who shall be chairman, the other five members to be such individuals or representatives of such bodies or societies as shall best ensure by their knowledge and experience of the profession that there shall be an adequate selection from members of the profession of the members of the Medical Advisory Council.

(iii) That at the present time the five representatives should be selected as follows:

(a) One nominated jointly by the Royal Colleges of Physicians and Surgeons.

(b) One nominated by the British Medical Association.

(c) One nominated by the Royal Society of Medicine.

(d) One nominated by the Society of Medical Officers of Health.

(e) One additional member chosen by the above, who must fulfil the following conditions: He shall be a general practitioner; he shall not be a member of the council of any of the above bodies; he shall not reside within the County of London.

Method of Selecting Nominations for Advisory Council.

(iv) That the following method be adopted in securing nominations for the Advisory Council for submission to the Minister:

(a) Arrange for the election of seven persons by the whole profession; such election to be carried out on the lines of that for the direct representatives on the General Medical Council.

(b) Set up a list of professional bodies and organizations which are of sufficient importance to warrant recognition, and which shall together be as representative as possible of the whole profession in England and Wales.

(c) Secure from these bodies and organizations the names of, say, sixty persons suggested as suitable for appointment on the Council, the number of names to be suggested by each body being such as the "Electoral College" considers equitable, and the method by which the names are arrived at being left entirely to the discretion of each suggesting body.

(d) Select from among the persons referred to in (c) the most suitable "team" of fourteen, having regard to the points in Minute 64 of last meeting.

(e) Nominate to the Minister these twenty-one persons for appointment.

(v) That the Minister may himself add to the persons as nominated three others.

Method of "Joint Working" or Co-ordination of the Several Councils.

(vi) That the following scheme be suggested as a means of co-ordinating the work of the several councils:

(a) The President and Vice-President would be common to each Advisory Council, and possibly the Secretariat would be common also.

(b) One member of each Council might be appointed a member of each of the others.

(c) The Minutes of each Council should be circulated to the members of the other Councils.

(d) Arrangements should be made for occasional joint meetings of two or more Councils to consider any specified subject which seemed to require joint discussion.

(e) A small co-ordinating Committee (consisting, say, of two members from each Council) should be set up for the purpose of ensuring proper co-ordination of reports, and for this purpose only.

THE ORGANIZATION OF THE PROFESSION.

CORRESPONDENCE.

SIR,—I hesitate to intrude on your columns so soon again, but two things urge me to do so. The first is the letter of Dr. Clegg in the SUPPLEMENT of April 26th; upon it I wish to offer one or two comments.

In the first place, one reason why the miners, engineers, etc., could have an advance in wages given them, while it was denied to the medical profession working under the Insurance Act, is that in the former case the consent of Parliament was not needed; whereas the remuneration of insurance practitioners having been fixed by Act of Parliament, it would (I believe) have been necessary to introduce and pass a new bill before that remuneration could be increased, unless it were done by way of a bonus, as actually happened. The point may not be vital, but it is important.

Secondly, the various sections of workers have not won their various concessions from their employers or from the State merely because they were strong trade unions in the legal sense of the word, but because they were strong bodies of men, banded together into societies, having on the whole a common object in view, united in their common aim and in the method to be adopted in obtaining it. It is this *unity* which counts, let the society be a registered trade union or not. The railway men nearly lost their fight and had much internecine trouble because they were grouped under two strong trade unions instead of one. If every general practitioner in the country, whether on the panel or not, were a member of the British Medical Association, loyally prepared to support it in every policy, which ought to emanate from the members themselves, while abating no right of criticism or of effort to make the Association more fully representative of the views of the members, there would be no need for any other society, trade union or otherwise, and no special need for the Association itself to become a registered trade union. The name matters little; it is the power behind the name that counts. The letter may only kill; it is the spirit which maketh alive.

But now I think there is a splendid opportunity for the Association to prove its value to the profession, and—if it takes up a really strong line of action—to see whether the rank and file will support it. I refer to the raising of the income limit from £160 to £250 a year, which the Insurance Commissioners are proposing. I will not dwell upon what that may mean to the profession. Its results ought to be obvious. But I would point out that the Commissioners propose to attain their object by bringing in a new bill,

and, no doubt, rushing it through Parliament hastily and quietly, while they declined to adopt that course when it was a question of raising the remuneration of panel practitioners. I think one or other of two policies should be adopted *at once*. Either the proposed bill must be absolutely opposed, the profession being organized to the point, if necessary, of united refusal to renew contracts should the bill become law; or else the same bill should embody a proposal to raise the rate of remuneration under the Insurance Act to, say, 12s. 6d. It would be for the profession to say which, or what other, course should be adopted. But here is a chance for the Insurance Acts Committee to take a bold lead, to institute a really strong policy likely to command the support of the profession as a whole. This may be the psychological moment. If they fail to grasp the opportunity, to formulate an effective plan of campaign, they may give such reasons for distrust to those in the opposing camp as may lead to disorganization and weakness. If they rise to the occasion they may completely rehabilitate the Association and put the profession into a position of unity and strength which it has never occupied before. What course will they adopt?—I am, etc.,

Hull, April 27th,

JOSEPH NELSON.

SIR,—Having read the letters of Dr. Clegg and Dr. Nelson, and having recently heard Dr. Cox and Dr. Stancomb at Bournemouth, I find differences of opinion exist, be they real or imaginary, and for the good of the profession *unity* is all-important. As Dr. Nelson writes, "Our future is not in the hands of any Government department; it is for ourselves to make what we choose of it."

We must fight on trade unionism lines; a fetish is not always bad, and it is useless for Dr. Cox to argue against the benefits of it. Surely the profession, with its strong hold on individual members of Parliament, has no limitations. Why is it that the legal profession are so well able to take care of themselves? During Dr. Stancomb's address at Bournemouth he more than once advocated a workable arrangement with the British Medical Association, and in no way indulged in "disruptive tactics," whereas Dr. Cox gave one the impression of a "dog in the manger" spirit. The Coventry case was dwelt upon at some length, and as though it had created a spirit of nervousness; this being so, I trust a *modus vivendi* may be found of fighting the question manfully and with all unity.—I am, etc.,

Bournemouth, April 27th.

A. KINSEY-MORGAN.

SIR,—Dr. Joseph Nelson, in a letter in your issue of April 26th, p. 63, accuses the Medico-Political Union of being ignorant of the "really vital principles" of the trade union movement, while all the time the Union is endeavouring to imitate the policy of the great trade unions and to follow in their footsteps. But he does not appear to me to be so conversant with the history of trade union development as he imagines himself to be. No great trade union that I know of started as such *ab origine*. The process consisted in the establishment of several distinct unions, and a concentration was effected by the amalgamation of these separate units. Many among us are dreaming of the same phenomenon occurring in the case of the medical profession. It is the natural process. Men form groups, then companies, then coalesce into masses and armies. It is this process which is really going on now.

When the Medico-Political Union was started there was a mass of men (the majority of the profession), who, after many years of propagandism, were still unwilling to join the Association. It was in order to gather these in that the Medico-Political Union was founded. In fact, to pick up the "shreds and patches" lying outside about it. To do this it was necessary for the Pied Piper to play a different tune. If this has succeeded (as it has) in getting a very large number of men into line who had been aimlessly and individually wandering, why find fault with the bugle call?

Dr. Nelson throws some doubt upon the power of the Trade Disputes Act to safeguard the funds. Whether he be right or wrong, it is now certain that nothing else will. He speaks disparagingly of "disruptive tactics," but I venture to predict that when the great fight is joined he will be surprised at the ease with which the unity of the profession will be completed through the coalescence of dissimilar bodies.

Finally, may I suggest one or two aphorisms for his midnight cogitations:

1. Two rival organizations will thrive where one would languish.

2. Efficiency is the product of rivalry.

3. Friends who slang each other in public may be affectionate enough in private.

4. If one army gains a recruit it does not follow that the other has lost one.—I am, etc.,

London, W., April 27th.

W. COODE ADAMS.

SIR.—Dr. Clegg, in his letter published in the SUPPLEMENT to the JOURNAL of April 26th, p. 62, points out that Mr. Bonar Law granted increased pay to the miners on receiving representations from their "strong trade union," and Dr. Clegg therefore thinks a separate "trade union" of the profession would be able to do more than the British Medical Association. He has overlooked the main thing which undoubtedly appealed to Mr. Bonar Law—namely, the miners' trade union has behind it about five thousand parliamentary votes to one of the British Medical Association. We can never hope with our small numbers to receive the same attention from our politicians as a trade union commanding a million or so votes.

What we can do is to join and back up the British Medical Association, which is, and always will be, the recognized medium for conducting matters of importance between the profession, Parliament, and the public. Any attempt to split the medical profession into two camps is most deplorable and will lay it open to the attacks of politicians and bring on it the ridicule and contempt of the public.

One half the doctors in the country are members of the British Medical Association; surely they know what they want, and have much the same experience as those who are non-members. If anything wants doing I think we can trust the members of the Association to look after the interests of the profession, and to do it in a dignified and satisfactory manner. The idea that the British Medical Association should confine itself to science, and leave politics alone, as suggested by some, is ridiculous; most of us use our scientific knowledge to make a living. How, for instance, can we deal with tuberculosis without scientific knowledge and political assistance? Where would the science of hygiene be without politicians to enforce the public health laws? The great mistake we doctors have made in the past has been our reluctance to take an interest in politics—we have neglected a duty which we owed to the public and ourselves; we as a profession know what is wanted, and yet we have avoided politics, and allowed lawyers, soldiers, and county squires to make the laws of the country. It is high time to combine science and politics for the benefit of the race, and the British Medical Association is in duty bound to do it.—I am, etc.,

Leytonstone, April 27th.

ARTHUR T. TODD-WHITE.

MEETINGS AT BOURNEMOUTH.

Two meetings of the local profession, called by the Panel Committee to discuss the better organization of the medical profession, were held on April 2nd and April 23rd, at both of which there was a large attendance. Dr. STANCOMB and other representatives of the Medico-Political Union addressed the first meeting, and after discussion it was resolved to adjourn the consideration of a motion in favour of forming a branch of the Union until after a second meeting, to be addressed also by a representative of the British Medical Association. Dr. F. W. RAMSAY took the chair on both occasions.

Dr. COX, speaking on behalf of the Association on April 23rd, began by a tribute to Dr. Stancomb, whom he described as one of the most eloquent and attractive speakers in the profession, and went on to say that the fundamental difference between Dr. Stancomb and himself was that the former thought the profession would be better organized if it had two organizations, while he was convinced it would do better by concentrating on one, and making that one really strong and effective. But Dr. Stancomb was of opinion that while the Association might be very good and useful up to a certain point, the profession needed some protection that could only be got through a trade union, while he believed that the alleged advantages of trade unionism for the profession were a delusion, and therefore that its advocates were doing the profession

harm by pushing it. In the course of a speech describing the work which the Association was doing, he stated that up to the present it had had nothing but opposition and abuse from the Medico-Political Union, and he was therefore amazed to read that Dr. Stancomb, in his speech there on April 2nd, had said that the Union had never failed to hold out the olive branch. The speaker's opinion was that the olive branch had been carefully camouflaged so as to resemble a shillelagh. He dealt with the two main lines of argument put forward in favour of medical trade unionism, (1) that it possessed some magical power of compelling its members to hold together, and (2) that it had legal immunities which protected its funds and its members against actions which would involve their doers in damages if carried out under any other auspices. So far as the first was concerned, in spite of many requests for information he had never succeeded in finding out what the mysterious power was, and he never expected to do so, because there was none. A trade union was a voluntary organization, and medical men would leave it when they were not satisfied with its policy just as they left other organizations. As for the legal immunities, he relied on the high legal opinion the Association had recently obtained, which was to the effect that whatever immunity a medical trade union might have in actions for conspiracy, libel, and slander (and that was very doubtful), there was no immunity for the individuals. Quite apart from legal considerations, and much more important in his opinion, was the mischief that was being done to the interests of the profession in splitting the profession up into several bodies. The ingenious suggestion of Dr. Stancomb and his friends, that the Association should leave its medico-political work to the Union and go on as a scientific social body, could only be made by people who neither knew nor cared to know the extent of the work of the Association.

Dr. STANCOMB, in reply, said Dr. Cox's arguments against medical trade unionism were destructive criticisms of trade unionism in general, but it was the experience of all workmen whose lives depended on their labour that their salvation depended on trade union organization; the benefits they secured from their employers were in proportion to the effectiveness of their trade union organization. Some of the employers even had organized as trade unions, and Mr. Bonar Law recently had said the Government were indisposed to deal with any but the recognized officials of a trade union. He accused the Association of sailing under false colours, for Dr. Cox had said the Association was doing and intended to do most of those things that a union claimed to do because it was a registered trade union. He read from the Memorandum of Association of the British Medical Association the clause which forbids the Association to "support with its funds or endeavour to procure to be observed by its members any action that would make it a trade union." The Medico-Political Union by its activities had "gingered up" the Association to take action which they were at their wits' end how to do either within their charter or within the law. He did not want the British Medical Association to give up its work, but suggested that if the Association found that ordinary negotiations did not succeed, it should relegate in such cases the final act of pressing the terms of the profession to a body that was fully equipped for the purpose—the Medico-Political Union. While he hoped and intended to be a loyal member of the Association, he objected to the Association asking for funds for purposes of such a kind that it dared not keep the money in its own hands, but had to camouflage it in another body.

A discussion took place in which Drs. WEATHERLEY, BRISCOE, LE FLEMING, DAVIDSON, JOHNSON SMYTHE and others took part, and in which it was evident that though there was no ill-will to the Association (many of the speakers professing their loyalty to it), there was a feeling that it would perhaps be best to join both organizations.

Dr. COX and Dr. STANCOMB both replied to questions, and on a vote being taken on the desirability of forming a local branch of the Union, the motion to do so was carried by 42 to 8. The meeting terminated with votes of thanks to the two speakers and to the Chairman.

A RECRUITING LETTER.

As an instance of what may be done by an energetic honorary secretary to increase the membership of the Association in his Division, we may quote from a letter recently sent by Dr. Harold S. Beadles to all non-members in the Stratford Divisional area of the Metropolitan Counties Branch. The letter begins by pointing out the

necessity at the present time for a united profession, and continues:

During the last quarter of a century eager men have endeavoured to create fresh organizations, but one after another these have only had a short life, because they represented only larger or smaller sectional interests. The profession has, therefore, had to fall back continuously on the British Medical Association, which has always endeavoured to represent the interests of every branch of the profession, which interests cannot be dissociated from one another. The Association has been created as the most democratic body imaginable, and its policy must always be what the majority of the profession makes it. The men who hold office can only be those whom the members elect as best representing their views. In any occupation there will always be men who hold views which are not in accordance with those of the majority, but once those views become the views of the majority, then they must become the views of the Association. It is no use a man saying that the Association does not represent his ideas; no organization will ever represent his ideas until those ideas are accepted as those of the majority of the profession.

The letter then goes on to argue that it is the duty of every practitioner to join the Association as an active member, and to lend a hand in making the profession a united and consolidated body with one strong organization. It concludes: "There will be a meeting for every member to attend in May, when you will be able to elect those men to represent you whose views are those which you desire to become the views of the profession as a whole."

EXHIBITION OF SURGICAL INSTRUMENTS, DRUGS, FOODS, AND BOOKS.

(Concluded from p. 63.)

We continue from the SUPPLEMENT of April 26th a detailed notice of the exhibition of surgical instruments, drugs, foods, books, etc., which was held in the Physics Examination Hall of the Imperial College of Science and Technology during the Special Clinical and Scientific Meeting of the British Medical Association.

NESBIT EVANS AND COMPANY (Birmingham). The science of bed construction was well exemplified at this stand, where beds were on view in which, through the central placing of the springs, sagging was prevented; beds equipped with easy regulation of movement to simplify the wheeling from ward to balcony; beds which could be inclined at any angle, and secured at that angle; and beds for asylum patients specially contrived to prevent the patient injuring himself with the metal work.

BURGOYNE, BURBIDGES, AND COMPANY, LTD. (East Ham). The laboratories of this firm have done much to fill the gap caused by the withdrawal of German preparations. The largest specimen of a chemical product on exhibition was chloroformamide (a hypnotic which was formerly sold under the proprietary name of chloralamid) and its intermediate products, anhydrous chloral and formamide. A specimen of chlorbutol, or trichlor-tertiary butyl alcohol, used as a preservative of hypodermic solutions, was shown; and other exhibits were acetanilide—which was nearly all manufactured abroad in pre-war days—and its mono-methyl derivative; also sodium salicylate, now a commonplace of British chemical manufacture, and a large number of pharmaceutical preparations.

SIEBE, GORMAN AND COMPANY, LTD. (187, Westminster Bridge Road, S.E.1). Among the masks and other contrivances for working in poisonous atmospheres, the Haldane apparatus for oxygen administration was conspicuous, and was shown in several types, including a field pattern. The gas analysis apparatus of the same authority was also on view, together with a number of restorative appliances for cases of gas poisoning in mines, and respirators for various purposes.

SURGICAL MANUFACTURING COMPANY (64, Mortimer Street, W.1). A large array of surgical instruments of many kinds was shown at this stall. A twin-barrel syringe designed by Dr. Edward Harrison for the intravenous injection of the "914" solution in the treatment of syphilis was noted, and also a special form of tonsillotome suggested by Mr. Somerville Hastings.

BOOTS PURE DRUG COMPANY, LTD. (Nottingham), had a very wide range of synthetic medicinal chemicals and of synthetic antiseptic substances. Among the former were

aspirin, atropine (now made on a very large scale in England), butyl chloral hydrate, hexamine, phenacetin, and salicylic acid; and, among the antiseptic substances, acriflavine and proflavine, chloramine-T and dichloramine-T, and halazone for the sterilization of drinking water. These newcomers shared the stand with more familiar pharmaceutical preparations.

MOORE AND MOORE (Oxford) exhibited a scientific closet which, the inventor claimed, was more suited to the natural posture than the usual pattern, and had the advantage of not necessarily involving contact of the body with the pan, and also could be fitted with douches. A similar contrivance was shown at the exhibition at Aberdeen in 1914, and was then fully described in these columns.

DOWN BROTHERS, LTD. (21-23, St. Thomas's Street, S.E.1). The collection of instruments at this stand again had a wide range, and included instruments which have been introduced or have come into prominence during the war, particularly for bone surgery. Among the hospital furniture shown were some interesting designs of operation tables, one a quadrant table with all accessories, and another a table which claimed attention on account of its portability.

GENATOSAN, LTD. (12, Chenies Street, W.C.1). This firm, which is the British purchaser of the Sanatogen Company, showed, in addition to sanatogen, a new form of aspirin, called genasprin, guaranteed to contain no free acetic or salicylic acid. The Quain silica ozonizer, shown at this stand, has been used in the treatment of cases of gas poisoning in British and French military hospitals. It consists of a quartz silica vacuum tube through which the energy of the ultra-violet rays is made to pass, and it is stated that the ozone produced is free from nitric oxides.

OPPENHEIMER, SON, AND COMPANY, LTD. (179, Queen Victoria Street, E.C.4), had a large and varied exhibit, among which various rubefacients were a special feature, particularly a cream named "balmosa," containing methyl salicylate in a non-greasy basis. Among the articles shown at this stand were various aerizers and neboline compounds, as well as palatinoids and bipalatinoids of uncompressed drugs.

WATSON AND SONS (ELECTRO-MEDICAL), LTD. (43, Parker Street, W.C.2). The most interesting exhibit here was a display of radium salt in a capillary tube, fitted with screens for filtration purposes. Of the x-ray exhibit the chief feature was the "sonic" plate, advocated for its great rapidity.

CLEMENT AND JOHNSON (19, Sicilian Avenue, W.C.1). This stand was given up to the "yadil" antiseptic in various preparations, as liquid, jelly, and ointment. "Yadil" is stated to be a trimethenol allylic carbide compound, which can be prescribed for internal use in sufficiently large doses to be effective.

OZONAIR, LTD. (96, Victoria Street, S.W.1). At this stand apparatus was exhibited for applying ozone in the treatment of lung and throat affections, for purifying the air of sick-rooms, for disinfecting mortuaries and dissecting-rooms, and for treating substances to be used as medicinal preparations.

MAYER AND PHELPS (formerly Mayer and Meltzer, 59-61, New Cavendish Street, W.1) had a considerable range of surgical and anaesthetic apparatus, including, for general surgery, retractors, callipers, and trocars; various appliances for throat and nose work; and for anaesthetic use a new apparatus for the intratracheal insufflation of ether.

HEARSON AND COMPANY, LTD. (235, Regent Street, W.1). Some of the larger laboratory apparatus was to be seen at this stand, including incubators, paraffin baths, and ovens, centrifuges, sterilizers, and shaking machines (for vaccines). This in its way illustrated the rising of British industry to new occasions, for in many cases such laboratory equipment came only from Germany before the war.

Several of the remaining stands can be dealt with summarily, not because their exhibits were less interesting than those already mentioned, but because they concentrated upon one product or one range of products, or because their products are already familiar and have been described on many former occasions.

KEEN, ROBINSON (Denmark Street, E.1), in addition to their well known mustard preparations, were showing farina of barley and of groats for making barley water and gruel for infant and invalid feeding. HORLICK'S (Slough, Bucks) gave up their stand to an attractive display of their malted milk. BRAND AND COMPANY, LTD. (72-84, South Lambeth Road, S.W.8), with their meat essences and their soups and beef-teas for invalids, made a savoury display; while the condensed milk and associated foods of the NESTLÉ COMPANY (6-8, Eastcheap, E.C.3), together with the "Milkmaid" coffee and cocoa, were as tempting as usual. The claims of two French waters—Vichy-Célestins and Contrexéville "Pavillon"—were put forward by INGRAM AND ROYLE, LTD. (45, Belvedere Road, S.E.1), together with samples of the Vichy salts.

THE SANITAS COMPANY, LTD. (Locksley Street, Limehouse), exhibited their "sanitas" fluid and other germicidal agents, including a carbolic soap, guaranteed to contain 20 per cent. of carbolic acid.

JEYES SANITARY COMPOUNDS COMPANY, LTD. (64, Cannon Street, E.C.4), in addition to the disinfectant which goes by their name, showed "cyllin" in a number of different forms, and also "jeysol," claimed to be identical in composition with the original "lysol." RONUK, LTD. (Portslade), confined their exhibit to their well known sanitary polishes for hospital floors and to appliances for using them. GEORGE KENT, LTD. (199, High Holborn, W.C.1), showed apparatus for the use of oxygen, both in gaseous and liquid form, with cylinders in the one case and metal vacuum flasks in the other; and the HYDROGEN, OXYGEN, AND PLANT COMPANY, LTD. (1, Albemarle Street, London, W.1), had various types of British and French oxygen regulators for use with high-pressure gas supplies, as well as a number of portable breathing appliances and masks. Another triumph of industrial production during the war was illustrated at the stand of R. B. TURNER AND COMPANY (9-11, Eagle Street, W.C.1), in the shape of an exhibit of glassware, including ampoules, flasks, test tubes, and other lamp-blown articles.

Among the exhibitors of surgical instruments was HENRY LEWIS (2, Westmoreland Street, W.1), who had a selection of orthopaedic appliances of many kinds. T. HOLLAND AND SON (46, South Audley Street, W.1) showed an interesting selection of surgical boots and foot and instep supports; and SMITH AND COMPANY (59, Gray's Inn Road, W.C.1) showed some of their more than eighty varieties of truss, for the making of which they have established a reputation extending over a hundred years. W. H. BAILEY AND SON, LTD. (38, Oxford Street, W.1), in a surgical exhibit, drew attention to two arrangements, one an examination couch with certain special features, and the other a compact midwifery case, with a separate compartment for the sterilizer. A. E. DEAN AND COMPANY (Leigh Place, E.C.1) showed an interesting selection of x-ray apparatus, including tubes (made of English glass) and tube stands, interrupter and rectifier, couch and localizer, and other features of an up-to-date x-ray installation. The protection of the operator was again the note of this particular exhibit. Attention was also called to a new portable spirometer at the stand of OLIVER-PELL ELECTRIC AND MANUFACTURING COMPANY, LIMITED (Arundel Street, W.C.2). This was an instrument, less than a foot in height, for measuring lung capacity in both cubic and decimal equivalents.

In addition to apparatus and material for the surgeon, BROWNE AND SAYER (30, Highbury Place, N.5) were demonstrating Pavy's sugar test with ammonio-cupric sulphate. Another striking exhibit of fine chemical products appeared at the stand of W. J. BUSH AND COMPANY, LTD. (Hackney), in which the chief place was given to benzoic acid and salicylic acid and their respective salts. In addition to synthetic preparations, here various vegetable oils were also shown. HOWARDS AND SONS, LTD. (Ilford), gave the main place in their exhibit to their standard ether, the demand for which was stated to have increased greatly during the war; their other chemical products included aspirin, and barium sulphate for the x-ray shadow meal. C. J. HEWLETT AND SON, LTD. (35-42, Charlotte Street, E.C.2), also had a display of their chemical products, which included antiseptic creams, spirituous skin lotions, and intestinal lubricants, as well as preparations of opium, iodine, and ergot, and several good atomizers. A supply of Italian ichthyol (ammonium

sulpho-ichthyolate) was shown by PAUL BEHREND'S (Didsbury) under the commercial Italian name of "ittiolio."

The various bookstalls were well attended. W. B. SAUNDERS COMPANY (9, Henrietta Street, W.C.2) had an attractive collection of new books and new editions, the bulkiest among them being some American *Clinics*. J. B. LIPPINCOTT COMPANY (34, Bedford Street, W.C.2) also had a number of books by American authors, as well as the quarterly *International Clinics*. HENRY KIMPTON (263, High Holborn, W.C.) showed a number of standard works on radiology and medical electricity, among other subjects; and WILLIAM HEINEMANN, LTD. (20, Bedford Street, W.C.2), had a good selection of books, among which one noticed the work on *Malingering*, by Bassett Jones and Llewellyn. Finally, there were the massive publications of the Oxford University Press; on this stand (HENRY FROWDE; HODDER AND STOUGHTON, 17, Warwick Square, E.C.4) were works by Sir James Mackenzie, Sir W. Arbuthnot Lane, Sir James Purves Stewart, and many others; also a report of the American Red Cross Commission on trench fever. Before visitors left the exhibition they were invited to take away pamphlets of the Research Defence Society and also of the Medical Insurance Agency. The last and most modest place in this review must be given to the stand of the British Medical Association, where the various publications issued by the Association were on sale.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

THE Annual Representative Meeting of the Association will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy-Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Oversea bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy-Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting, proposing to make any addition to, or any amendment, alteration, or repeal of any Regulation or By-law, or to make any new Regulation or By-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 19th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches in the afternoon of Wednesday, July 23rd, in connexion with the Representative Meeting. Particulars as to the Conference will be announced later. Honorary Secretaries are hereby invited to give notice of matters they desire should receive consideration. They are also reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ANNUAL GENERAL MEETING, 1919.

NOTICE is hereby given by the Council that the Annual General Meeting of the Association will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 25th, 1919, at 2 o'clock in the afternoon. Business: (1) Minutes of last Meeting. (2) Appointment of auditors (Messrs. Price, Waterhouse and Co. offer themselves for re-election). (3) Report of election of President.

ELECTION OF COUNCIL FOR 1919-20.

THE Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

Notice is hereby given that **Nominations** of candidates for election as Members of the Council by Branches or Groups of Branches in the United Kingdom for the year 1919-20, under By-law 46 (a), require to be forwarded to reach the Acting Financial Secretary and Business Manager, at the Office of the Association, not later than Saturday, May 17th, 1919. Each Nomination is required to be on the prescribed form, copies of which will be furnished by him upon application.

There are separate forms:

- (a) For a Nomination by a Division, and
- (b) For a Nomination by any three Members of a Branch.

Members applying for forms are asked to state which form is desired.

An announcement of the Nominations received will be made in the JOURNAL of May 24th.

In the case of contests the elections will be by voting papers. These papers will contain the names of all duly nominated candidates, and will be issued from the Central Office on Saturday, June 7th, and be returnable not later than Saturday, June 14th.

The result of the election of Members to the Council will be published in the JOURNAL of June 21st, or, in the event of there being no contests, earlier.

Meetings of Branches and Divisions.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION. THE annual meeting of the Division was held at Dorchester on April 23rd, when Dr. P. W. Macdonald was appointed Chairman. Dr. J. P. L. Whittingdale Vice-Chairman, Dr. A. L. Haig Honorary Secretary and Treasurer, and Dr. Decimus Curme Representative in Representative Body. Feeling allusion was made to the great loss sustained by the Division owing to the death of Dr. Miller; also to the deaths of Dr. Hay and Dr. Kitson. The question of holding clinical meetings was discussed, and the chairman and secretary were asked to consult with the staff of the Dorset County Hospital and, if possible, to arrange for a clinical meeting in June.

EAST ANGLIAN BRANCH: SOUTH ESSEX DIVISION.

THE annual general meeting of the Division was held on April 4th, with Dr. T. B. SELLORS in the chair. The meeting placed on record its regret at the loss which the Division had sustained by the death of Dr. J. B. Maxwell.

Annual Report and Financial Statement.—The HONORARY SECRETARY presented the balance sheet for the past year, and made a brief report on the general aspect of affairs in the Division. He reminded the meeting that during the past four and a half years the work of the Division had been in abeyance, but that the Local Medical War Committee had done a large amount of work, holding twenty-eight meetings in all, with an average attendance of 8.2 out of a possible 9. He impressed on members the pressing need for them to take an active interest in Division affairs, and emphasized the point that their worst enemy was apathy. The British Medical Association, with all its faults, was the only body to which they could look for help in the problems which now confronted medical men, and it was that body and that alone which the Government recognized in its dealings with the profession. It was hoped that an attractive list of social functions and clinical evenings would be arranged for the ensuing year, and members were asked to do everything possible to make the Division strong and united.

Annual Dinner.—It was resolved to revive the annual dinner at an early date.

Election of Officers.—The following officers were then elected for 1919-20:

Chairman: Dr. A. F. Blake. **Vice-Chairman:** Dr. C. Forsyth. **Honorary Secretary and Representative:** Dr. J. F. Walker. **Committee:** Drs. Adams, Bridger, Day, Hinks, Eyre Lloyd, Lowe, Poole, Simpson, Stovin, Wragg.

LANCASHIRE AND CHESHIRE BRANCH: ROCHDALE DIVISION. THE annual meeting of the Rochdale Division was held on April 24th, when Dr. GEDDES was in the chair. The annual report was adopted; it showed that the membership was one less than last year. On account of the shortage of doctors and

the influenza epidemic only one meeting of the Division and one meeting of the Executive Committee had been held.

The following officers were elected:

Chairman: Dr. W. H. Bateman. **Vice-Chairman:** Dr. G. Geddes. **Secretary and Treasurer:** Dr. James Melvin. **Auditor:** Dr. H. Harris. **Representative in Representative Body:** Dr. S. T. Lord. **Deputy Representative:** Dr. James Melvin. **Representative on Branch Council:** Dr. S. T. Lord.

NORTHERN COUNTIES OF SCOTLAND BRANCH: BANFF, ELGIN, AND NAIN DIVISION.

At the annual general meeting of the Division, held on April 10th, the following officers were elected for the year 1919-20:

President: Dr. Ironside. **Vice-President:** Dr. Alexander. **Honorary Secretary and Treasurer:** Dr. J. A. Stephen. **Representative in Representative Body:** Dr. Brodie Crickshank. **Deputy Representative:** Dr. Alexander. **Representatives on Branch Council:** Drs. George Wilson and Beaton.

BRANCH AND DIVISION MEETINGS TO BE HELD.

SUSSEX BRANCH: EASTBOURNE DIVISION.—Dr. W. Mair Smith, Honorary Secretary (8, Upperton Road, Eastbourne), gives notice that at a meeting under the auspices of the Division, Professor David Ligat will repeat in the Cinema Theatre, Summerdown Convalescent Hospital, on May 12th, at 3.30 p.m., his recent Hunterian Lecture on the Significance and Surgical Value of Certain Abdominal Reflexes. Tea will be provided at the close of the meeting.

INSURANCE.

LOCAL MEDICAL AND PANEL COMMITTEES.

BEDFORDSHIRE.

At a meeting of the panel practitioners for the County of Bedford, on April 2nd, it was agreed unanimously to approve the scheme for a "National Insurance Defence Trust" as described in Circular M.21 issued by the British Medical Association.

GLASGOW BURGH.

A MEETING of the Local Medical and Panel Committees on February 25th resolved that it was not satisfied that the proposed Association of Practitioners for the Burgh of Glasgow under the provisions of paragraph (C) subsection (2) of Section 59 of the National Insurance Act 1911, offered better prospects of thorough representation of the whole profession than the alternative method of election.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Commanders W. H. O. Garde to the *Resolution*, H. Huskinson, C.M.G., to the *Revenge*, H. S. Burniston, C.M.G., to the *Queen Elizabeth*, E. Arkwright to the *Canada*, J. Chambers to R.N. Hospital, Queensferry, M. L. B. Rodd to Chatham Hospital, C. L. W. Burton to R.M. Division, Deal, F. Bolster to Malta Hospital. Surgeon Lieutenants F. W. Poole to the *City of Perth*, additional for Brightlingsea Naval Base, W. H. Kay to the *Hearty*, T. W. Robbins to the *Garth Castle*, G. E. D. Ellis to Plymouth Hospital, J. L. Preston to the *Hawkins*. Surgeon Lieutenants (temporary) J. B. Bailey to the *Tyne*; J. Donald, J. W. Peden, and J. M. Bickerton to Chatham Hospital; D. J. Max to the *Eagle*.

ARMY MEDICAL SERVICE.

Major-General (temporary Lieut.-General) Sir William Babbie, V.C., K.C.M.G., C.B., K.H.S., is placed on retired pay and is granted the honorary rank of Lieut.-General.

Temporary Colonel H. Alexis Thomson, C.M.G., relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Major and Brevet Colonel J. S. Bostock is seconded for service with the Ministry of Pensions.

J. H. Nicoll to be temporary honorary Lieut.-Colonel whilst serving with the Scottish Red Cross Hospital, Bellahouston.

Captain C. G. G. Keane to be acting Major.

Temporary Captain (acting Major) P. Carney, M.C., relinquishes the pay and allowances of his acting rank.

Temporary Captains C. W. G. Bryan, M.C., and A. M. Wood relinquish the acting rank of Major.

Lieutenants (temporary Captains) to be Captains: (Acting Major) M. B. King, M.C. (and to retain his acting rank), J. H. C. Walker, W. H. Hunt, M.C., W. L. Partridge, M.C., H. J. Bower.

Lieutenant (temporary Captain) W. Hunt, M.C., is seconded for service with the Egyptian army.

The following officers relinquish their commissions:—Temporary Lieut.-Colonels and retain the rank of Lieut.-Colonel: D. D. Logan, F. C. Dwyer, Gordon M. Holmes. Temporary Major E. W. Skinner, and is granted the rank of Lieutenant-Colonel. Temporary Majors and retain the rank of Major: J. S. Morrow, J. C. Webb, J. B. Boves, G. E. Macleod, M. B. Scott, P. S. Clark, D.S.O., G. T. S. Siechel. Temporary Captain and is granted the rank of Lieut.-Colonel: C. D. Pye-Smith, D.S.O., M.C. Temporary Captains and are granted the rank of Major: J. F. R. Gairdner, H. R. Macintyre, D.S.O., M.C., P. L. Blaber, J. C. L. Day, J. S. Joly, A. E. Knight, D.S.O., M.C., A. W. S. Christie, T. P. Cole, J. J. Gibb, A. Ryland, S. A. Owen, J. Greene, D.S.O., M.C., H. F. N. Scott, W. K. A. Richards, M.C., T. C. Ritchie, O.B.E., W. J. Pearson, D.S.O., M.C., W. Crabtree, J. F. Robertson, N. S. Carmichael, V. F. Southill, J. Jack, M.C., C. L. Chalk, M.C. Temporary Captains and retain the rank of Captain: P. W. Leathart, J. C. Johnson, J. N. G. W. McMorris, O. C. M. Davis, I. W. Mortimer, A. G. McIntyre, D. L. Lindsay, N. C. Lake, R. C. Muir, G. J. R. Carruthers, T. McCrick, R. Marshall, J. A. M. Clark, H. W. Moir, D. Morrison, O. J. N. Longridge, J. D. Clay, J. Lindsay, J. Jeffrey, R. L. B.

Downer, T. Chalmers, G. Macleod, M.C., J. E. Erskine-Collins, A. P. Fry, M.C., G. F. Shepherd, T. A. Ross, M. P. Dewar, F. W. Fawcett, T. Jackson, J. P. Fairley, W. H. R. McCartor, R. Gellatly, R. P. Rosser, G. E. Lockyer, W. O. Travis, R. H. G. Oulton, M. Nicoll, C. C. Harris, H. H. Sloane, W. R. Addis, M.C., H. Tomlin, J. L. Rubidge, T. Clarke, A. C. Sharp, B. C. Powell, C. J. Taylor, H. G. Davison, T. J. Gilmore, R. D. Carter, T. J. Killard-Leavey, F. E. Reynolds, S. A. Forbes, H. H. Kendrick, R. E. Collins, J. C. Curtis, L. R. Meech, M.C., J. N. Glaster, D. M. Reid, G. C. B. Mielville, J. M. Burnford, C. C. Vigurs, J. Kenwick, H. E. Crisp, C. Simpson, R. C. Corbett, W. R. L. Waters, L. D. Wright, F. Gallimore, M.C., J. E. Richards, R. MacGill, F. Gordon, J. S. Rowlands, E. H. Morris, M. H. E. R. Montesole, E. E. Mather, E. W. Ogden, E. J. E. Taylor, W. W. Jameson, G. W. H. James, M.C., J. B. Jordan, E. T. Roberts, E. Nuttall, J. M. Pooley, H. C. Nickson, J. C. Michell, A. O'Flaherty, H. E. Jones, H. J. Jones, H. C. Robertson, C. S. U. Rippon, S. W. McLellan, M.C., J. C. Middleton, G. A. J. M. Loughman, F. W. M. Palmer, A. G. Glass, N. M. Rankin, A. T. Nankivill, A. M. Webber, A. Rendle, P. C. Lock, J. F. Mackay, A. E. Rayner, H. S. Roberts, A. E. Roberts, W. A. D. King, C. T. Neve, C. H. G. Prance, J. A. Lowry, C. de Z. Marshall, H. J. Keane, H. G. G. Jeffreys, D. W. MacLagan, G. R. Jeffrey, H. Robinson, O. G. Morgan, C. D. Williamson, H. Whitehead, A. L. Taylor, L. W. Pole, E. P. Titterton, T. G. King, J. P. Macleod, W. H. Parry, L. F. E. Jeffcoat, S. B. White, A. J. Kendrick, H. F. Lumsden, A. A. Greenwood, C. E. Molino, E. R. Morley, J. Orr, T. Dowzer, M.C., A. H. H. Howard, C. C. Worster-Drought, G. C. W. Williams, W. W. Hallechurch, S. P. Harris, T. E. Hincks, R. W. Reid, C. W. Coglian, J. G. Gods, H. Heathcote, A. E. Woodall, D. Gillespie, M.C., E. J. Tyrrell, A. R. N. MacGillivuddy, M. H. Whiting, S. E. Bethell, H. O. Gough, H. M. Bouchier-Hayes, J. McDonnell, M.C., H. H. Weir, R. H. Martin, W. Macleod, S. Williams, O. Le F. Milburn, G. B. Nicholson, F. S. Kidd, C. W. Preston-Hillary, D. G. Pearson, R. W. Rix, O. V. Payne, F. Robinson, B. C. Maybury, A. P. Piggot, J. G. G. Pigott, H. J. Rae, M.C., H. G. Nelson, S. Marie, W. O. Pitt, H. F. Marshall, H. G. K. Young, C. H. Waddell, A. M. Wood (on ceasing to serve with the Home Hospitals Reserve), A. Matheson, G. C. Gill, E. I. P. Pellew, O.B.E., J. W. Robertson, P. C. Prince, J. C. Marshall, H. Granger, R. F. Gill, W. L. Johnson, S. N. Galbraith, A. R. Mair, C. M. Pennefather, H. Bowring, W. Matheson, J. F. Lindsay, E. M. Grace, I. B. Richardson, E. W. Grogono, A. M. Barlow, C. B. Gerrard, A. D. Yule, A. Patrick, C. H. Medlock, Q. Madge, O.B.E., R. R. Wade, G. B. Proctor, C. Clarke, S. W. G. Ratcliff, W. E. S. Scott, W. H. Bryce, H. T. Prince, J. I. Shepherd, M.C., A. G. Bisset, M.C., B. B. Phillips, J. S. Soutter, W. A. Slater, H. H. Bywater, J. M. Redding, C. S. van R. Harwood, H. M. M. Mackenzie, C. G. McClymont, W. Gorrie, R. H. Simpson, A. Vost, A. P. M. Sloan, M.C., J. H. Robertson, A. C. Palmer, J. A. Struthers, A. Smith, A. C. Russell, E. Thorp, N. Navarra, W. H. Richardson, S. Slade, G. S. Gordon, R. Curle, J. Brierley, R. H. W. Garle, R. Burges, A. G. Clark, M.C., R. D. Passey, M.C., W. Ross, W. Barbour, D. B. Cramer, J. A. W. Ponton, J. M. H. Caldwell, R. Cunliffe, H. M. Sturrock, J. Lang, J. M. Moyes, W. B. Sanders, W. L. Hodge, R. P. Hadden, M.C., F. G. Bullmore, F. M. Kirwan, A. E. Hodgson, G. D. Sherwood, H. Chapple, G. W. Stone, K. D. Bean, E. L. Horsburgh, A. S. Moorhead, R. J. MacMillan, T. Miller, J. A. Smith, M.C. Temporary honorary Captains and retain the honorary rank of Captain: S. R. Meaker, A. C. Hudson. Temporary Lieutenants and retain the rank of Lieutenant: B. A. McSwiney, E. F. Crabtree, J. R. Sutherland, G. A. Fothergill, J. D. Walker, P. W. Smith, C. J. L. Palmer, L. P. M. Gardner, A. Bevan, A. J. Reynolds, E. Walsh, N. A. Macleod, H. H. Patrick, F. Anderson, R. W. Taylor.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Major A. Pelling relinquishes his commission on account of ill health. Captain M. E. H. Hale relinquishes his commission on account of ill health, and is permitted to retain his rank. Transferred to the unemployed list: Major A. H. Hogarth; Captains A. I. George, A. G. Holman, J. B. Stevenson; Lieutenants H. G. James, L. E. Stamm.

INDIAN MEDICAL SERVICE.

Lieut.-Colonel T. Stodart to be Colonel.
Captain E. A. Penny to be temporary Major.

GENERAL RESERVE OF OFFICERS.

Major (temporary Lieut.-Colonel) Sir Allan Perry retains the rank of Lieut.-Colonel on ceasing to be employed.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL CORPS.

Temporary Major (acting Lieutenant-Colonel) T. A. Lower, D.S.O., relinquishes the appointment of Officer in Command of a Canadian Field Ambulance. Temporary Major J. L. Cock to command a Canadian Casualty Clearing Station.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel (acting Colonel) E. C. Montgomery-Smith, D.S.O., relinquishes his acting rank on vacating the appointment of Assistant Director of Medical Services.

Major D. F. Todd, Captain (acting Major) J. Strathearn, and Captain G. R. Rickett, to be acting Lieutenant-Colonels whilst specially employed.

Captain (Brevet-Major—acting Major) A. S. M. Macgregor relinquishes his acting rank on vacating appointment as Deputy Assistant Director of Medical Services.

Captains D. W. Berry, M.C., and T. V. Oldham to be Deputy Assistant Directors of Medical Services, and to be acting Majors whilst so employed.

To be Majors: Captain (acting Major) S. English, Captains H. N. Burroughes and A. T. Mulhall.

Captains to be acting Majors whilst specially employed: A. C. Cameron, M.C., H. B. Cunningham, H. S. Wallace, R. W. Aitken, K. F. R. Davison.

Captains H. L. Gaultlett and J. Young relinquish their commissions on account of ill health contracted on active service, and retain the rank of Captain.

The following relinquish their acting rank on ceasing to be specially employed:—Major (Brevet Lieut.-Colonel, acting Lieut.-Colonel) E. E.

Bird, D.S.O. Majors (acting Lieut.-Colonels): F. Whalley, D.S.O., D. L. Fisher, D.S.O., R. Griffith. Captains (acting Lieut.-Colonels): J. A. Davies, A. C. F. Turner, D.S.O., T. B. Wolstenholme, O.B.E., H. G. L. Haynes. Captains (acting Majors): H. T. Bates, M. Coplans, D.S.O., W. J. T. Kimber, P. R. Bolus, R. Errington, M.C., W. C. Macaulay, R. C. Neil, B. E. Potter, P. S. Price, J. H. Crane, W. E. H. Bull, M.C., J. H. Donnell, G. E. J. A. Robinson, C. H. Caldicott, J. R. B. Russell.

East Anglian Divisional Sanitary Section.—Captain (acting Major) W. P. Corfield relinquishes his acting rank on vacating appointment of Deputy Assistant Director of Medical Services.

1st London Sanitary Company.—Captain (acting Major) W. N. W. Kennedy relinquishes his acting rank on vacating the appointment of Deputy Assistant Director of Medical Services.

2nd London Sanitary Company.—Captain (acting Major) F. R. Carson, M.C., relinquishes his acting rank on ceasing to be specially employed.

2nd Scottish General Hospital.—Major (Brevet Lieut.-Colonel) D. Wallace, C.M.G., is restored to the establishment.

3rd Scottish General Hospital.—Major H. Rutherford is restored to the establishment.

2nd Southern General Hospital.—Officers seconded for service with a special military surgical hospital: Captains C. F. Coombs, (Brevet Major) E. W. H. Groves, J. M. Fortescue-Brickdale, A. R. Short, A. I. Flemming.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel (Brevet Colonel) H. W. Webber, from the 4th Southern General Hospital, to be Lieutenant-Colonel.

APPOINTMENTS.

Bailey, Reginald Threlfall, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent of the Mill Road Infirmary, Liverpool.

Cresswell, Thomas H., M.R.C.S., L.R.C.P., House-Surgeon to the Wolverhampton and Midland Counties Eye Infirmary.

Hudson, Bernard, M.D., M.R.C.P., Principal Medical Officer, Palaca Hotel Tuberculosis Station, Montana-sur-Sierre, Switzerland.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

HUTCHINSON.—On May 3rd, at Lady Howard de Walden's Maternity Hospital for Officers' Wives, 34, Albert Road, Regent's Park, to Dora (née Crockett) and Samuel Hutchinson, M.R.C.S.Eng., a son.

ROSE.—To Dr. and Mrs. F. G. Rose, at the Public Hospital, Georgetown, Demerara, on March 3rd, 1919, a son—Anthony Michael.

MARRIAGES.

AITKIN—CHAMBERS.—At St. Mark's Parish Church, Portadown, co. Antrim, on April 30th, 1919, by the Rev. Canon Moeran, M.A., assisted by the Rev. Canon Archer, B.D., James H. Aitken, M.B. Ch.B. Edin., M.C., Chelmsford Place, York, to Kit, youngest daughter of Mr. and Mrs. Chambers, Ulster Bank House, Portadown.

GEDDIE—DICKINSON.—On April 30th, at Baptist Church, St. Anne's-on-Sea, by the Rev. C. Davis, C. M. Geddies, M.B., son of Dr. W. Geddies, Waterloo House, Accrington, to Florrie, daughter of Mr. T. and Mrs. A. Dickinson, Willowdene, St. Anne's-on-Sea.

HARRISON—RACKHAM.—On May 6th, at St. Jude-on-the-Hill, Golders Green, by the Rev. Arthur A. P. Winsor, Captain Cyril E. Harrison, R.A.M.C., only son of Mr. and Mrs. Charles G. Harrison, 25, Ashbourne Avenue, Golders Green, to Muriel Constance, younger daughter of Dr. and Mrs. A. R. Rackham, of Elham, Norfolk.

WILKINSON—STURROCK.—On May 3rd, at St. Peter's Church, Bourne-mouth, Captain Stephen Harold Wilkinson, R.A.M.C., eldest son of Mrs. Wilkinson, Hylands, Priory Road, Bourne-mouth, to Ida, widow of Lieutenant A. Hill Sturrock, M.G.O., and second daughter of Mrs. Vaughan, 39, St. George's Square, S.W.1.

DIARY FOR THE WEEK.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Monday, 8 p.m., General Meeting; 9 p.m., Annual Oration by Sir John Tweedy, LL.D., on The Medical Tradition, to be followed by a conversation.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Social evening 9.30 p.m., Mrs. Dickinson Berry: Balkan Experiences. Section of Surgery, Subsection of Proctology: Wednesday, 5.30 p.m., Annual Meeting. Cases, Professor Arthur Keith: Demonstration of Specimens of War Injuries of the Rectum and Colon. Dr. Alfred Jordan: X-ray Appearances in a Case of Diverticulitis of the Sigmoid. Section of Dermatology: Thursday, 4.30 p.m., Cases, 5 p.m., Annual Meeting. Section of Otolaryngology: Friday, 5 p.m., Annual Meeting. Cases and Specimens. Section of Electro-Therapeutics: Friday, 7.30 p.m., Annual Meeting and Dinner at Paganini's Restaurant.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W.1.—Friday, 5.59 p.m., Professor Maxwell-Lefroy: Fly Sprays.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be held.
	May.
12 Mon.	Eastbourne Division, Summerdown Convalescent Hospital, 5.30 p.m.
23 Fri.	London: Propaganda Subcommittee, 2.30.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 17TH, 1919.

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REPORT OF CONFERENCE OF REPRESENTATIVES OF VARIOUS MEDICAL BODIES.

A CONFERENCE of representatives of various medical organizations was held on Tuesday, May 6th, 1919, at the offices of the British Medical Association. The conference was called by the Council of the Association on the initiative of the Association of Panel Committees, which suggested that the subjects of discussion should be the possibilities of common action, the best means of securing that the Medical Consultative Council of the Ministry of Health should possess the confidence of the great body of the profession, and the best means of securing the support of all medical organizations for the National Insurance Defence Trust.

The following organizations were invited to send representatives: The Association of Panel Committees, the Medico-Political Union, the Medical Parliamentary Committee, the Medical Women's Federation, the National Medical Union, the State Medical Service Association. The two last named societies have not yet replied to the invitation, probably owing to the comparative shortness of the notice. The following representatives were present:

Association of Panel Committees: Drs. H. J. Cardale, Peter Macdonald, B. A. Richmond, J. P. Williams-Freeman.

Medico-Political Union: Drs. F. Coke, E. H. Stancomb, A. Welply.

Medical Parliamentary Committee: Drs. C. Buttar, A. Latham, Jane Walker, A. S. Woodwark.

Medical Women's Federation: Dr. Janet Lane-Claypon, Dr. Dickinson Berry.

British Medical Association: Drs. M. G. Biggs, H. B. Brackenbury, A. Cox, T. W. H. Garstang, G. E. Haslip (acting for Dr. J. A. Macdonald, unable to be present).

Dr. GARSTANG was appointed chairman, and in welcoming those present expressed the hope that all would try to put into the background the things on which there were differences of opinion, and concentrate on the points on which there was likely to be agreement.

Common Action.

Dr. RICHMOND stated that the position of the Association of Panel Committees was that there should be a body directly representative of Panel Committees and looking specially after their interests, and his Association had used its influence to modify the composition of the Insurance Acts Committee in that direction. They were very desirous of bringing about unity in the profession, and thought the time had come when the British Medical Association should foster a federation of all medical organizations.

Dr. PETER MACDONALD emphasized these remarks and advocated the early formation of a liaison committee

which should contain representatives of all medical organizations that cared to come into it. He made certain proposals for common action which he thought should be considered at once by a small committee of the Conference.

The idea of having a small committee received general approval. Dr. STANCOMB, on behalf of the Medico-Political Union, stated his agreement that there was danger to the profession in the competition which was now going on and also in the existence of rival deputations on the same subject. He added that his Union did not desire to injure the British Medical Association nor to rival it, and he submitted the following conditions by means of which an understanding could be arrived at:

(a) That there should be recognition of the trade union as a possible valuable adjunct in medical organization.

(b) That the Medico-Political Union should be frankly recognized as the official body representing those members of the profession who wished to belong to a medical trade union.

(c) That the British Medical Association should recognize the Medico-Political Union as the agent for the profession in collective bargaining in the final resort—that is, if ordinary means of persuasion had failed and there was any question of refusing to accept or renew contracts or anything which might be construed as being in "restraint of trade," the matter should be dealt with by the Medico-Political Union.

(d) That further conferences be held to define limitations of work and prevent overlapping.

(e) That there should be mutual agreement in important matters before any action is taken by way of joint deputations.

Eventually a committee consisting of Drs. Brackenbury and Garstang, Dr. Richmond, Dr. Welply, Dr. Buttar, and Dr. Jane Walker, was constituted to consider and report on the best ways of promoting common action, including the possibility of forming a liaison committee; and to consider also the proposals made by Dr. Stancomb which were not then further discussed. Dr. Cox was appointed secretary of the committee, and it was agreed that it should meet on Friday, May 16th, and report as soon as possible to another meeting of the Conference.

Medical Consultative Council to Ministry of Health.

It was reported that a scheme for the selection of names for nomination to the Minister had been sent by the British Medical Association to Dr. Addison, who had been asked whether he was prepared to accept it. It was agreed that in whatever way nominations were desired by Dr. Addison it was desirable that there should be consultation between the various bodies asked to nominate, and arrangements were made to secure this.

National Insurance Defence Trust.

A discussion took place on the best way of securing united action in connexion with this fund, and the matter was postponed until after the consideration of the report of the committee referred to above.

TRADE UNIONISM AND THE MEDICAL PROFESSION.

IN view of the interest that has been aroused in the medical profession on the trade union question, the Council of the Association is sending to every non-member a reprint of the address delivered by the Medical Secretary at Newcastle-on-Tyne on March 13th and printed in the SUPPLEMENT on March 22nd, together with the following verbatim report of the questions put to counsel bearing on the subject and their answers.

QUESTIONS.

(7) *If the Association had been a Trade Union would it have been possible for the plaintiffs in the Coventry case to bring their action either in whole or in part (1) against the Association, (2) against any of the individual officers, members, or officials of the Association?* In the light of counsel's answer to this question attention is specially directed to Section 4 (1) Trades Disputes Act, 1906.

It is of paramount importance to the Association to have the clearest and most conclusive answers possible upon each of the above questions. The Association is constantly being told that its actions, either in fixing minimum salaries for classes of appointments and advertising the same to the profession (which is work constantly done), or advising doctors either not to take appointments belonging to certain classes (such as those under the control of a body of workmen) or not to take particular appointments, are "in restraint of trade" and therefore illegal. It is also told that a trade union could do any of these things, even to the extent of boycotting such as was carried out at Coventry, with perfect impunity. In fact, that an action for conspiracy, libel, or slander "would not lie" in such a case.

The Association therefore desires to be advised how far, in the view and opinion of counsel, these theories are well founded.

(8) Assuming that in the Coventry case the Association had pleaded Sec. 3 of the "Trades Disputes Act" (the protection in which is apparently not confined to trade unions) and had also pleaded that its action was in furtherance of a "trade dispute," what would have been the probable success of such a plea? If it had been successful, what would have been the position of the Association in connexion with par. 3 of the Memorandum of Association?

(9) Upon the assumption that the main object of this inquiry is to ascertain in what way the profession could gain the maximum of legal immunity in undertaking action such as is exemplified in the Coventry case—that is, the "warning off of men from appointments objected to, the endeavour to prevent men from taking such appointments by all such means as were resorted to at Coventry and the ostracism of those who, after warning, did take such appointments"—would registration as a trade union enable a body of medical men to do these things with (a) complete legal immunity, or (b) much less risk than that run by any body which is not a trade union and cannot become one, either registered or unregistered?

If material advantage of the nature indicated would accrue to an organization registered as a trade union, will Counsel please mention any countervailing disadvantages which occur to them as touching either the professional or legal aspects of the position.

ANSWERS.

(7, 8, 9) We think that questions 7, 8, 9, can better be answered together and in different form from that in which they are put.

We understand that some members of the Association think that the Association ought to be registered as a trade union, and that if so registered it would escape the possibility of such an action as that of Pratt and others against the Association and others.

This raises two main questions:

(a) Can the Association be registered as a trade union? and

(b) What advantages would result from such registration?

As to (a) the British Medical Association, while it remains a company registered under the Companies Acts, cannot be registered as a trade union. (Trade Union Act, 1871, Sec. 5; Companies Consolidation Act, 1908, Sec. 294.)

There are therefore two alternatives:

(1) For the Association to be wound up and its members to form themselves into a new Association and seek to register under the Trade Union Acts, or

(2) For the Association to continue to exist for certain purposes, but for such of its members as see fit to form a new Association and to take over such of the functions of the present Association as deal with the restrictions sought to be imposed upon the practice of the medical profession, and for this new Association to seek registration as a trade union.

We do not think that the course of forming an unregistered trade union, though possible, has any advantages. There must be many matters in regard to either course which are not questions of law but relate to the status and dignity of the profession and its members with which it is not for us to deal, but in case the second alternative were adopted we would point out that a difficulty would arise as to the **BRITISH MEDICAL JOURNAL**.

It is a periodical primarily dealing with scientific matters and therefore would naturally remain the organ of the present Association. But, if so, the publication in it of notices, etc., relating to professional interests might leave the present Association open to all the dangers it is now seeking to avoid. There remains still the question whether the whole Association when reconstructed or a number of its members could register as a trade union.

By the Trade Union Act, 1913, a trade union is now defined as "any combination, whether temporary or permanent, the principal objects of which are under its constitution.

(i) For regulating the relations between workmen and masters or between workmen and workmen or between masters and masters, or

(ii) For imposing restrictive conditions on the conduct of any trade or business, and for

(iii) The provision of benefits to members."

The third of these probably means "pecuniary benefits."

Now the British Medical Association has or would have among its objects the "imposing of restrictive conditions on the conduct of a trade or business," for we think that the practice of medicine, besides being a profession is a business, although it is arguable that "business" is in the Act used in a narrower sense.

But we do not think that it can be said that the principal object of the British Medical Association is to impose such restrictive conditions, and accordingly we think that the Association if it reconstructed itself as a whole for objects similar to those expressed in its present Memorandum of Association could not properly be registered as a trade union.

We understand that there would be opposition to any such registration both within and without the Association, and we think such opposition would be successful. This argument, however, would not apply if some members of the present Association, either with or without other members of the medical profession, formed themselves into a new association having for its principal object the imposing of restrictive conditions on the practice of medical men in their profession, and upon the whole we think that such a new association could be registered as a trade union although, as before noted, the opposition might still urge that the scope of the Trade Union Acts was to deal with masters and workmen, or employers and employed, and that therefore "Business" ought to be read in the narrower sense which would exclude professions.

If once registered, it is to be noted that by Section 2, Subsection 5 of the Trade Union Act, 1913, "a certificate of the Registrar that a trade union is a trade union within the meaning of this Act shall so long as it is in force be conclusive for all purposes," but by Subsection 2 of the same section the Registrar may withdraw the certificate "if in his opinion the principal objects for which the Union is actually carried on are not statutory objects (that is, objects as above defined).

As to (b) what advantages would result from registration as a trade union? Those who advocate registration no doubt look mainly to the protection offered by the Trades Disputes Act, 1906, and particularly to Sections 3 and 4 of that Act.

In our opinion the protection given by these sections would be small.

Section 3 enacts that:

"An act done by a person in contemplation or furtherance of a trade dispute shall not be actionable on the ground only that it induces some other person to break a contract, etc."

By Section 5 the expression "trade dispute" is defined as meaning:

"Any dispute between employers and workmen or between workmen and workmen which is connected with the employment or non-employment or the terms of the employment or with the conditions of labour of any person,"

and the expression "workman" is defined as meaning:

"All persons employed in trade or industry."

In our opinion a medical man, whether employed at a salary or practising in the ordinary way for fees, is not a person employed in trade or industry, and is not a "workman" within the meaning of the Act. Accordingly, a dispute as to the terms of employment or conditions of employment of a medical man is not a trade dispute within the meaning of the Act, not being a dispute between employers and workmen or between workmen and workmen, and therefore, no protection is given by Section 3, and if this section had been pleaded in the Pratt action no benefit would have been derived from such plea.

Section 4 of the Trades Disputes Act, 1906, enacts that—

"An action against a trade union, whether of workmen or masters, or against any members or officials thereof on behalf of themselves and all other members of the trade union in respect of any tortious act alleged to have been committed by or on behalf of the trade union shall not be entertained by any court."

First, it is to be noted that this section does not give any protection to a member or official sued in his own capacity for a tortious act, but only to such as are sued on behalf of themselves and the other members, and even when so sued only gives protection in respect of acts alleged to have been committed by and on behalf of the trade union. See *Bussey v. Amalgamated Society of Railway Servants*, 1908, 24 T.L.R. 437, and *Richards v. Bertram*, 25 T.L.R. 181.

They are therefore left unprotected as regards tortious acts alleged to have been committed in their individual capacity.

It follows that in the Pratt action even if the British Medical Association had been registered as a trade union the defendants other than the Association could have taken no benefit from this section.

Secondly, it is to be observed that the section deals only with—

"An action against a trade union whether of workmen or masters."

We have already said that medical men are not "workmen" within the meaning of this Act. In our opinion also they cannot be described as "masters," and therefore even if the British Medical Association had been registered as a trade union we do not think that Section 4 of the Trades Disputes Act, 1906, would have been extended so as to give them protection. It is to be remembered that the Section in removing from the jurisdiction of the courts in regard to wrongful acts a section of the community will be read strictly.

We are not aware of any other advantages arising from registration as a trade union, and from the foregoing it will be seen that in our opinion little or no advantage would be derived from registration as a trade union in a case of claims similar to those raised in the Pratt action being again raised. There are limitations on the right of a trade union to sue its members for subscriptions, etc., under the Trade Union Act, 1871, Section 4, which would be a disadvantage, and a trade union has not the benefit of limited liability.

British Medical Association.

CURRENT NOTES.

Salaries of Medical Officers.

THE British Medical Association has endorsed the resolutions recently passed by the Society of Medical Officers of Health, and has written to the local authorities of the United Kingdom under the control of the Local Government Board, and to the education authorities and town clerks of city and borough councils in Scotland, inviting these bodies to give favourable consideration to the request. The resolutions are as follows:

1. That, having regard to war conditions, the salaries of all medical officers of health, school medical officers, and other medical officers or assistant medical officers of local authorities be increased by 33½ per cent. over pre-war rates, notwithstanding any increase of salary according to scale, or grant for special or additional services, for example, maternity and child welfare, venereal diseases, etc., since the war commenced.
2. That the above take effect as from July 1st, 1918.

National Deposit Friendly Society.

The revised scale of fees payable by the National Deposit Friendly Society for medical attendance on its members, which came into operation on February 1st, 1919, was published on page 13 of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of February 1st, 1919. Medical practitioners are reminded that accounts for attendance upon members of the society subsequent to February 1st, 1919, should be rendered on the basis of the revised scale.

Repayment of Petrol Licence Duty.

The Board of Trade has announced that persons desiring to obtain motor spirit on and after May 17th, 1919, will not be required to hold motor spirit licences. Dealers in motor spirit are accordingly instructed no longer to detach vouchers from licences held by their customers. In reply to an inquiry on behalf of the British Medical Association, the Deputy Controller of the Petrol Control Department states that provision is now made for a refund of licence duty in respect of unpurchased motor spirit, provided the licence is accompanied by a written application for the balance of the duty to be returned. Licences should be forwarded to the Petrol Control Department, 19, Berkeley Street, London, W.1, as soon after May 17th as possible, but not later than the first week in August.

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH: PRESTON DIVISION.

A MEETING of the whole profession of the Preston Division was held on May 9th to hear an address by Dr. A. Cox on "The forthcoming alterations in the National Health Insurance Agreement for 1920" and the necessity for supporting the new Defence Trust Fund. Dr. SELLERS presided over a good attendance of members and non-members, and, after welcoming those who had returned from active service, called on Dr. Cox for his address.

Dr. Cox outlined the steps already taken with regard to the 1920 agreement, and explained that certain reports would shortly be received by every member of the profession for discussion locally before the holding of a special conference of representatives of Local Medical and Panel Committees in London. He stated that the reports did not touch on the amount of any new capitation fee that might be fixed, as it was thought wiser to see first what the Government wanted done, and then to fix the financial arrangements accordingly. He insisted on the need of support for the "Trust Fund," in case there should have to be a fight over terms, and pointed out that this fund had been constituted in accordance with legal advice, and could be freely used both for administration and compensation purposes. There was nothing to be gained by placing the fund under trade union auspices. A discussion followed, to which Dr. Cox replied, and the meeting closed with a vote of thanks.

SURREY BRANCH: GUILDFORD DIVISION.

At a meeting of the Guildford Division held on May 2nd at the Royal Surrey County Hospital, Guildford, to which all members of the profession were invited, Dr. Alfred Cox, O.B.E. (Medical Secretary of the Association) gave an address on "The imminent alterations and extensions of the Insurance Medical Service and their connexion with the Ministry of Health." A discussion on the various topics dealt with followed, and Dr. Cox replied to questions and criticisms.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting of the Association will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy-Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Oversea bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy-Representatives, for 1919-20 require to be elected not later than June 26th, and their names to be notified to the Medical Secretary not later than July 3rd.

MOTIONS FOR THE REPRESENTATIVE MEETING.

Notices of Motion by Divisions, Constituencies, or Branches for the consideration of the Annual Representative Meeting, proposing to make any addition to, or any amendment, alteration, or repeal of any Regulation or By-law, or to make any new Regulation or By-law, or proposing material alteration of the policy of the Association in matters relating to the honour and interests of the profession or of the Association (Article 30, By-law 40), must be published in the JOURNAL not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 19th.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches in the afternoon of Wednesday, July 23rd, in connexion with the Representative Meeting. Particulars as to the Conference will be announced later. Honorary Secretaries are hereby invited to give notice of matters they desire should receive consideration. They are also reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

ANNUAL GENERAL MEETING, 1919.

NOTICE is hereby given by the Council that the Annual General Meeting of the Association will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 25th, 1919, at 2 o'clock in the afternoon. Business: (1) Minutes of last Meeting. (2) Appointment of auditors (Messrs. Price, Waterhouse and Co. offer themselves for re-election). (3) Report of election of President.

ELECTION OF COUNCIL FOR 1919-20.

The Representative Body decided that the grouping for election of the Council, 1919-20, shall be the same as for the current year.

Notice is hereby given that **Nominations** of candidates for election as Members of the Council by Branches or Groups of Branches in the United Kingdom for the year 1919-20, under By-law 46 (a), require to be forwarded to reach the Acting Financial Secretary and Business Manager, at the Office of the Association, not later than Saturday, May 17th, 1919. Each Nomination is required to be on the prescribed form, copies of which will be furnished by him upon application.

There are separate forms:

- (a) For a Nomination by a Division, and
- (b) For a Nomination by any three Members of a Branch.

Members applying for forms are asked to state which form is desired.

An announcement of the Nominations received will be made in the JOURNAL of May 24th.

In the case of contests the elections will be by voting papers. These papers will contain the names of all duly nominated candidates, and will be issued from the Central Office on Saturday, June 7th, and be returnable not later than Saturday, June 14th.

The result of the election of Members to the Council will be published in the JOURNAL of June 21st, or, in the event of there being no contests, earlier.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

LENDING FACILITIES FOR MEMBERS.

The Council has made arrangements whereby books relating to all branches of medical literature and general science can now be obtained on loan by members of the Association free of charge (other than any postage) from the Lending Department of the Library of the Association, 429, Strand, London, W.C.2. The new facilities include, besides works on medicine, surgery, anatomy, physiology, bacteriology, dentistry, hygiene, obstetrics, and the other branches of medical and surgical science, the subjects of astronomy, biology, botany, chemistry, electricity, engineering, geology, microscopy, mining, physics, philosophy, sociology, technology, voyages and travels, zoology, etc. All such books issued will be latest editions, new books and new editions becoming available immediately upon publication.

The new facilities are additional to those which were already available for loan to members, of medical journals and periodicals, scientific reports of hospitals and laboratories, transactions of societies and congresses, and reports issued by States and municipalities, including those of commissions and committees appointed by States, municipalities, and legislative bodies.

The rules in respect of the new facilities will be similar to the previous rules. Copies of the rules, and all other information, may be obtained on application to the Librarian, British Medical Association, 429, Strand, London, W.C.2.

THE ORGANIZATION OF THE PROFESSION.

CORRESPONDENCE.

SIR,—Dr. Joseph Nelson (SUPPLEMENT, May 10th, p. 93) advocates a policy to meet the proposal of the Insurance Commissioners to raise the income limit to £250. This policy is that the bill should embody a proposal to raise our remuneration to 12s. 6d. This figure is too small, and does not represent, or nearly represent, a proper remuneration at the present time compared with pre-war standards. We should press for, and accept no less than, an increase at least proportionate to the very much enhanced cost of living *plus* a little extra to compensate for the inclusion of previously private patients, and the amount should be a *fixed* sum per head.—I am, etc.,

Johnstone, May 10th.

D. S. RICHMOND.

INSURANCE.

REMUNERATION UNDER THE INSURANCE ACTS.

The following letter, dated May 12th, 1919, has been sent to the Secretary of the Joint Committee of Insurance Commissioners by the Medical Secretary of the British Medical Association:

Sir,

The Insurance Acts Committee at its meeting on Thursday last had before it many expressions of opinion from Panel Committees throughout the country as to the rate of remuneration for insurance practitioners for the year 1919.

Since the grants made for 1918 were agreed upon—namely, 12½ per cent. of his insurance remuneration to a practitioner whose net professional income did not exceed £500, and 10 per cent. to a practitioner whose net professional income exceeded £500 but did not exceed £1,000, with the maximum payment in each case of £60—the position has been considerably altered. The Treasury has agreed to grants being made to civil servants on a much improved basis and irrespective of any income limit, and indications have been given that the Government may

probably introduce a bill into Parliament substituting for the present income limit which applies to insured persons £250 instead of £160.

In these circumstances the Insurance Acts Committee urges that attention should at once be given to the question of the grant to be made for 1919 to insurance practitioners to meet the diminished purchasing power of money; and as a basis for this consideration the Committee suggests the standard which it is understood the Government proposes to adopt—namely, that of 25 in 1919 as compared with 16 in 1914.

Yours faithfully,
ALFRED COX,
Medical Secretary.

LOCAL MEDICAL AND PANEL COMMITTEES.

DERBY AND DERBYSHIRE.

A MEETING convened by the Derby and Derbyshire Panel Committees was held at Derby on April 25th, and was well attended by both Derby town and county practitioners. Dr. Tobin of Ilkeston presided. Dr. A. Cox, Medical Secretary, attended and addressed the meeting on the objects and constitution of the National Insurance Defence Trust scheme. After lengthy discussion, it was unanimously resolved that the scheme as specified in Circular M.21 be adopted, and that the respective Panel Committees of Derby and Derbyshire take the steps necessary to carry the same into effect.

NOTTINGHAM AND NOTTS.

A joint meeting of the practitioners of the Nottingham and Nottinghamshire insurance areas was held at Nottingham on April 26th. Dr. Houghton (Mansfield) presided, and there was a large attendance of both city and county practitioners. A letter from Dr. H. Handford, medical officer of health for the county, was read, in which he regretted his inability to attend, and added that the outlook for the medical profession was so uncertain and anxious that undoubtedly some form of combination was more than ever necessary. Dr. A. Cox, Medical Secretary, was present, and delivered an address in which he fully explained the scheme for the establishment of a National Insurance Defence Trust. After discussion the following resolution was unanimously passed by the county practitioners:

The practitioners of the county authorize the Panel Committee to take the necessary steps to carry the scheme into effect on the lines set out in Circular M.21.

A similar resolution was unanimously passed by the city practitioners.

ESSEX.

At a meeting on May 8th the Essex Local Medical and Panel Committees confirmed the suggestions of a specially appointed subcommittee to form with the other Panel Committees in Group "K" (for election of direct representatives on the Insurance Acts Commission), a standing committee for local conferences of Local Medical and Panel Committees of the group. They further adopted the report of the majority of a subcommittee appointed to inquire into the organization of various medico-political bodies and to recommend which of them the Panel Committee for Essex should adhere to. The decision was to the effect that the Local Medical and Panel Committees should recommend the whole profession in Essex to join the Medico-Political Union for fighting purposes.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following notifications are announced by the Admiralty:—Surgeon Commanders (retired) W. Hackett, A. J. Pickethorn, and R. P. Bate have been promoted to the rank of Surgeon Captains (retired) in recognition of services rendered during the war. Surgeon Commanders: J. Chambers to R.N. Hospital, South Queensferry; M. L. B. Rodd to Chatham Hospital; C. L. W. Bunton to R.M. Division, Deal; F. Bolster to Malta Hospital; W. E. Gribbell to the *Hawkins*; F. E. Anley to Medical Department, Admiralty (temporary); R. A. Ross to Medical Department, Admiralty, as Assistant to M.D.G.; D. W. Hewitt, C.M.G., to the *Glory* as Senior Medical Officer; H. L. Penny, O.B.E., to the *Lion* as Senior Medical Officer on staff of Vice-Admiral Battle Cruiser Squadron. Surgeon Lieutenant Commanders: G. J. Carr to the *Cambrian*; R. H. McGiffin to the *Glory*; G. D. Walsh to the *London Belle*; D. Loughlin, D.S.C., to R.N. Sick Quarters, Osborne; C. G. Sprague to the *Pekin*. Surgeon Lieutenants: W. J. Colborne to M.S.P. W. Carruthers to the *Stene*; R. Knatch, L. F. Strugnell to the *Lord Norton*; A. J. McKee to the *Marchioness of Bute*; R. E. Rampling to the *Queen Empress*; H. E. Y. White to the *Walton Belle*; J. F. Haynes to the *London Belle*. Surgeon Lieutenants (temporary): T. W. Drummond and G. R. Lynch to the *Pembroke*, additional for R.N. Barracks, Chatham; J. Ryan to the *Orion*; F. J. R. Martin to M.26, W. G. Wylie to M.33, W. D. Pearson to the *Haidon*; A. E. R. Wollaston, D.S.C., to the *Humber*; H. T. Cubbon to the *Gainsborough*; S. J. Dunn to the *Edinburgh Castle*, N. Braithwaite to the *King Edward*; C. L. E. Wilson to the *Phesens*, additional. Temporary Surgeon Lieutenant H. H. Bailey, who has been invalided on account of ill health contracted in the service, to retain his rank. Temporary Surgeon Lieutenant J. N. M. Ross to be invalided on account of ill health contracted in the service, and to retain his rank (May 7th), not as previously stated. To be Surgeon Lieutenant: A. W. Gunn. To be Surgeons (temporary): Surgeon Sublieutenants R.N.V.R. (temporary) J. Donald and J. W. Pedon.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Lieutenant (temporary) W. B. Parr to the *Victorious II*. To be temporary Surgeon Lieutenant: E. G. O'Shea.

ARMY MEDICAL SERVICE.

Major-General (temporary Lieut.-General) Sir C. H. Burtchaell, K.C.B., C.M.G., K.H.S., relinquishes his temporary rank on reposting. Temporary Major-General Sir J. Rose Bradford, K.C.M.G., C.B., F.R.S. (Major R.A.M.C.T.F.), relinquishes his temporary commission on reposting.

Temporary Colonels relinquish their temporary commissions:—On reposting: C. G. Watson, C.M.G. (Captain R.A.M.C.T.F. Res.), and retains the rank of Colonel, A. B. Soltan, C.M.G., C.B.E. (Colonel A.M.S.T.F.), G. R. Murray (Major R.A.M.C.T.F.), S. G. Barling (Lieut.-Colonel R.A.M.C.T.F.), A. E. Webb-Johnson, D.S.O. (Captain R.A.M.C.T.F.).

Temporary Colonel C. H. Miller relinquishes his commission, and retains the rank of Colonel.

Temporary Colonel W. P. S. Branson relinquishes his commission, and is granted the rank of Major.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel E. C. Hayes retires on retired pay.

Lieut.-Colonels relinquish the acting rank of Colonel on reposting: H. A. L. Howell, C.M.G., C. R. Evans, D.S.O.

Temporary Lieutenant Colonel G. W. Fitzgerald (Major R.A.M.C.T.F.) relinquishes his temporary commission on ceasing to be in charge of Fusill War Hospital and on reposting.

The following relinquish the acting rank of Lieut.-Colonel on reposting: Majors P. J. Hanatin, D.S.O., J. W. L. Scott, Captains T. S. Eves, D.S.O., A. M. Pollard, D.S.O., E. C. Long, D.S.O., S. D. Large, D.S.O., M.C., I. R. Hudleston, temporary Major (acting Lieut.-Colonel) C. S. Young (Captain R.A.M.C.T.F.), temporary Captain C. V. Bulstrode, D.S.O.

To be acting Lieut.-Colonels: Whilst in command of a medical unit: Temporary Captain (acting Major) W. E. Hallinan, M.C., Captain and Brevet Major F. T. Dowling, Captain (acting Major) H. W. Farebrother. Whilst specially employed: Temporary Captain (acting Major) D. Fletcher.

Major and Brevet Lieut.-Colonel S. L. Pallant, D.S.O., relinquishes the temporary rank of Lieutenant-Colonel on reposting.

The following relinquish the acting rank of Major:—Captains: J. A. Andrews, D. C. G. Ballingall, M.C., N. V. Lohian, D. Bell, K. P. MacKenzie, H. P. Rudolf, H. P. Hart, M.C., J. M. MacKenzie. Temporary Captains: H. Bowring, A. W. P. Todd, M.C., O. E. Finch, M.C., D. M. Morrison, J. Gibson, M.C., J. A. Doull, M.C., C. S. E. Wright, C. E. Sundell, C. H. Corbett, W. L. Cassells, W. F. Box, W. Edmondson, E. Burstal, J. M. Burnford, W. L. Johnson, J. Burke, J. S. Lewis, C. L. Forde, R. R. Elworthy, P. Moran, D. W. Beamish, J. A. Currell, W. B. Griffin, C. J. H. Sharp, M.C., H. J. Milligan, G. McMillan, R. Scott, W. Ward-Smith, B. Whitehead, J. S. Arkie, N. S. Carmichael, A. L. Taylor, G. W. Riddell, J. E. Davies, J. H. Banks, T. W. Melhuish, H. R. Rollinson-Whitaker, J. B. Tomblinson, C. G. Adams, H. H. Row, J. H. Legge (January 25th, 1919—substituted for notification in the *London Gazette*, March 13th, 1919), G. G. Buchanan, A. J. H. Boyton, J. P. Musson, B. Cox, P. M. Heath.

To be acting Majors:—Captains: R. C. Aitchison, C. Kelly, M.C., J. P. Litt, J. W. Littlejohn, J. R. Yourell, H. P. Hart, M.C., A. L. Stevenson, J. M. Weddell. Temporary Captains: J. L. A. Groult, M.C., C. E. Dukes, W. D. Kennedy, A. L. Taylor, G. S. Murray, G. Gemmill, A. H. Coleman, O.B.E., H. G. Frean, A. L. Robinson, A. C. Mackay, F. H. Young, A. Poole, J. Bamforth, G. H. Culverwell, J. Macfines, R. H. Lucas, M.C., N. G. W. Davidson, J. J. Gibb, R. B. Heygate, E. Kidd, E. G. Dindley, C. G. Adams, H. Cordner, A. Topping, J. H. Baird, W. T. Currie, C. Rutherford, E. Jamieson (from August 14th to October 6th, 1918, inclusive), W. M. Howells (from January 8th to 10th, 1919, inclusive), G. P. Armstrong, M.C., R. T. Grant, R. Jamison. Whilst specially employed:—Captains: C. T. V. Benson, G. G. Collet. Temporary Captains: W. V. Robinson, T. M. Bellew, P. L. Hope, A. J. Ferguson.

Temporary Captain J. W. Bennett relinquishes the acting rank of Lieutenant-Colonel.

To be Captains, but not to reckon for pay and allowances prior to April 1st, 1919, with precedence as stated:—Captain (acting Lieut.-Colonel) E. T. Burke, D.S.O., from S.R., February 28th, 1918, next below R. W. Galloway and to retain his acting rank. Captain (acting Major) R. H. Williams from S.R., September 1st, 1918, next below W. T. Hare, and to retain his acting rank. Captains: J. G. Ronaldson, M.C., from S.R., February 10th, 1918, next below R. A. Hepple, J. J. Magner, from S.R., April 7th, 1918, next below T. K. Boney, T. V. Oldham, from T.F., April 15th, 1918, next below J. W. Burton, F. A. Roddy, from S.R., April 18th, 1918, next below T. V. Oldham, D. C. Scott, from S.R., April 24th, 1918, next below T. R. Snelling, H. A. Crouch, M.C., from S.R., April 24th, 1918, next below D. C. Scott, W. J. A. Laird, from S.R., July 4th, 1918, next below J. H. Baird, D. Cran, from S.R., October 14th, 1918, next below J. T. McConkey, D. McIntyre, M.B.E., from S.R., November 15th, 1918, next below H. E. P. Yorke, W. McE. Snodgrass, M.C., from S.R., December 18th, 1918, next below J. E. Brooks, A. J. Horne, from S.R., January 10th, 1919, next below J. W. O'Brien, A. J. Beveridge, M.C., from S.R., January 19th, 1919, next below F. R. H. Mollan, T. Menzies, from S.R., January 24th, 1919, next below C. Russell, J. T. Sorogie, from S.R., February 27th, 1919, next below S. J. L. Lindeman, R. F. Walker, M.C., from S.R., March 1st, 1919, next below J. T. Sorogie, W. W. S. Sharp, from S.R., April 25th, 1919, next below H. J. Bower. Temporary Captains: F. C. A. Fleming, M.C., February 17th, 1918, next below C. C. Munro, W. S. Evans, June 1st, 1918, next below M. Morris, C. F. Anthonisz, August 15th, 1918, next below H. E. A. Boldero, N. E. Packer, September 23rd, 1918, next below R. D. Dary, A. W. Raymond, M.C., September 23rd, 1918, next below N. E. Packer, J. T. McConkey, October 12th, 1918, next below R. B. Myles, H. E. P. Yorke, M.C., November 10th, 1918, next below G. S. Douglas, L. W. Evans, November 28th, 1918, next below D. McIntyre.

To be Lieutenants and to be temporary Captains, but not to reckon for pay and allowances prior to April 1st, 1919, with precedence as stated:—Captains from Special Reserve: J. A. Crawford, April 7th, 1916, next below W. H. Ferguson, A. G. Stevenson, August 10th, 1916, next below T. L. Henderson, B. J. Daunt, August 22nd, 1916, next below R. H. C. Pryn, M. G. Russell, October 9th, 1916, next below G. G. Drummond, J. P. Macnamara, January 1st, 1917, next below G. E. Spicer, L. G. Blackmore, February 5th, 1917, next below G. E. L. Simons, J. M. Morrison, May 1st, 1917, next below D. J. Batterham, J. C. Collins, July 19th, 1917, next below K. Masson, J. C. Burns, August 9th, 1917, next below J. M. Savage, Temporary Captains: C. L. Emmerson, November 14th, 1915, next below L. S. C. Roche, G. D. Gripper, December 1st, 1915, next below F. A. R. Hacker, T. P. Buist, February 25th, 1916, next below W. L. A. Harrison, A. A. H. Scott, March 4th, 1916, next below P. H. Wells, P. R. O'Rourke, Philips, April 28th, 1916, next below J. A. Crawford, P. G. Russell, May 12th, 1916, next below G. T. Garraway, W. E. Hodgkins, June

15th, 1916, next below P. G. Russell. H. A. Whyte-Venables, June 24th, 1915, next below W. E. Hodgkins. A. R. Barlas, October 4th, 1917, next below J. C. Burns.

The notifications in the *London Gazette* of July 25th, 1918, January 30th, and March 31st, 1919, regarding the undermentioned temporary Captains are cancelled: R. H. Lucas, G. P. Armstrong, F. H. Young.

The notification in the *London Gazette* of April 11th, 1919, regarding temporary Lieutenant C. K. T. Hewson is cancelled.

The following officers relinquish their commissions: Temporary Lieutenant-Colonels and retain the rank of Lieutenant-Colonel: J. F. W. Silk, C. S. Myers. Temporary honorary Lieut.-Colonel E. C. Hort on ceasing to be employed with the Red Cross Society and is granted the rank of Major. Temporary Majors and retain the rank of Major: L. Bidwell, T. E. Holmes, H. W. Bruce, W. F. L. A. Holcroft, H. E. L. Canney. Temporary Majors: C. E. M. Lowe, F. E. Crew. Temporary honorary Major Sir Francis M. Farmer and retains the honorary rank of Major. Temporary Captain H. Faulkner and is granted the rank of Lieut.-Colonel. Temporary Captain and Brevet Major N. Duggan and retains the brevet rank of Major. Temporary Captains and are granted the rank of Major: J. Anderson, D.S.O., G. Stiell, M.C., W. B. Griffin, A. H. M. Robertson, G. W. FitzHenry, J. V. Bates, M.C., D. H. Russell, H. W. Gabe, I. S. Wilson, H. R. Evans, G. F. Bird, M.C., H. C. W. Allott, C. Burnham, H. T. Mant, F. Henderson, M.C., A. A. O'Connor, A. J. H. Boyton, C. McMillan, M.C., B. Hart, F. E. Feilden, H. J. Milligan, M.C., W. Morris, J. L. Jackson. Temporary Captains and are granted the rank of Captain: E. McK. Reid, R. W. Hodgson-Jones, J. Macfadyen, V. T. C. Bent, J. E. Sharp, J. Hunter, R. J. Reynolds, E. H. Black, P. A. Hendley, H. J. Shone, S. H. Harris, E. G. Hodgson, C. H. Haddow, R. D. Brennan, J. Brydon, R. R. Hart, A. O. Bisson, A. Shearer, M. H. Raper, J. McMurray, F. A. Hort, G. W. Middlemiss, J. McKenzie, G. S. Marshall, W. S. McLaron, D. Loes, D.S.O., R. Montgomery, M. F. Bliss, M.C., E. B. Barnes, J. W. Miller, E. E. Atkin, A. B. McPherson, M. Maunson, A. S. Hendrie, J. P. E. Henery, H. B. Shepherd, A. R. Lindsay, M. W. Stewart-Smith, M. F. Huston, J. F. Taylor, R. L. Williams, D.S.O., W. D. D. Small, A. U. Webster, M.C., W. Fletcher, T. B. Evans, E. Emrys-Roberts, B. H. Peters, G. R. Lawless, W. T. Ohlms, A. Barker, G. A. Lilly, M.C., C. R. Brown, A. K. Forbes, M.C., J. B. Burt, R. Harrington, T. T. ApSimon, F. D. Crew, H. C. Woodvatt, T. H. Body, W. J. Rouan, P. A. MacCallum, W. H. F. Eales, T. E. Roberts, C. M. Geddie, J. L. Annan, F. F. Laidlaw, C. E. Evans, E. G. Goldie, H. A. Bell, J. W. Turner, M.C., W. Edmondson, H. R. Davies, J. R. Payne, J. Devine, J. R. Cruickshank, V. E. Lloyd, E. M. Niall, T. P. Lineham, D. G. C. Tasker, W. J. McFeat, R. H. Boardsley, A. Morrison, H. Bourne, J. G. Gray, J. T. Lloyd, M.C., H. T. Howell, J. Loftus, J. M. Jarvie, L. M. Ingle, O. H. Bulloch, W. Wilson, N. McC. Hutchison, A. C. Brown, D. C. Dobell, R. C. W. Spence, S. Hodgson, M.C., N. Davidson, E. C. B. Iobson, I. J. Bentley, P. Milnes, J. C. Nixon, G. G. Butler, W. H. Hare, C. J. S. Disnorr, H. H. Jenkins, E. Mapother, H. Love, P. L. Pollard, W. E. Hills, S. H. Richards, R. Gauld, H. S. Jones, E. M. Eaton, H. S. Berry, W. F. Neil, F. W. Pollard, T. C. Mackenzie, A. P. Hart, H. M. Birkett, F. S. B. Fletcher, W. E. C. Dickson, C. A. Kenny, H. W. Latham, P. H. Robinson, D. O. Fairweather, H. J. Starling, R. Dow, G. Ferguson, W. W. Dickinson, W. E. L. Fowler, W. V. Jones, S. H. White, H. W. B. Danaher, J. Magill, G. Macdonald, T. A. Clarke, S. M. Green, J. T. Grieron, J. F. Galligan, J. L. Schilling, E. J. Primrose, D. F. Dobson, J. L. M. Govan, A. Gilchrist, E. Montgomery, W. O'Donnell, W. Hamilton, M.C., P. Kinchin, H. A. Edwards, J. Lambie, E. A. Shirrell, C. A. Laver, A. G. L. Smith, G. D. Latimer, W. Gilmour, H. F. Smith, H. W. Dyke, R. D. Atwood, C. A. Hughes, S. Johnson, M. C. Burke, M.C., W. F. Croll, H. Harrison, J. V. Fiddian, W. B. Wansley, M.C., E. Weatherhead, L. P. Costobadie, C. Tylor, R. Taylor, R. Boutwood, D. Wardrop, D. H. Trail, N. G. Thornley, R. H. Asbury, N. F. Lock, F. Humphreys, H. M. Green, A. R. Taylor, P. E. Carroll, A. W. Matthew, H. Devine, F. I. Trimmer, B. Beesley, C. E. P. Husband, J. B. Macallan, R. D. Laurie, W. B. H. Dundee, G. S. Clark, C. A. Whitney, P. A. McCarthy, G. Mitchell, A. Lowndes, W. Campbell, G. D. Dawson, N. McI. Falkner, J. H. Leckler, W. A. Muir, R. H. Hunter, S. M. Mackenzie, T. Fearhead, H. E. Graham, R. L. Ley, J. Coutts, M. du B. Ferguson, E. C. Girling, D. C. McCormick, H. Mather, J. B. Martin, J. A. C. Greene, M.C., J. R. Currie, J. R. Liddell, F. W. Browne, A. I. Cooke, C. A. Farrell, C. G. Kemp, M.C., W. C. Gavin, B. Blacklock, E. L. Galletly, J. Lunn, J. B. Low, W. C. Mence, C. G. MacMahon, W. M. Menzies, W. Mair, C. R. Gibson, W. T. McCutcheon, G. R. Halloran. Temporary Captain M. J. Loftus. Temporary honorary Captains and retain the honorary rank of Captain: J. R. Beaven, J. F. Cooper, R. Marshall. Temporary Lieutenants and retain the rank of Lieutenant: L. D. Stephen, B. M. Wilson, C. F. Williams, C. R. Dykes, J. M. Reid, T. W. Lumsden, J. L. Phibbs, C. D. Lochrane, S. T. Rowling, J. J. Foran, P. Harwood, A. J. Hynd, R. J. Smith, I. D. C. Howlen, A. R. Waite, W. P. Tisdale, W. H. Jones, D. M. Barcroft, P. A. Mansfield.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Major H. Pritchard to be acting Lieutenant-Colonel whilst employed as President, R.A.F. Invaliding Board, from September 6th, 1918, to April 30th.

Transferred to unemployed list:—Captains: M. R. O. Wilson, (acting Major) A. Scott-Turner, S. Robertson, J. B. Stevenson, M.C., J. M. Wyatt, W. G. Helsby, R. M. Dannatt, C. F. Graves. Lieutenants: G. M. Wishart, B. R. B. Truman, I. M. Thomson.

E. L. Sergeant is granted a temporary commission as Lieutenant.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains relinquish the acting rank of Lieut.-Colonel: W. H. Elliott, M.B.E. (and reverts to the acting rank of Major), G. T. Van der Vijver, M.C. (on reposting).

Captains relinquish the acting rank of Major: J. Walker, M.C. (March 23rd, 1919, substituted for the notification in the *London Gazette*, January 30th, 1919), R. R. G. Atkins, M.C. On reposting: P. Gamm, M.C., T. W. Clarke, M.C., W. McCombie, M.C., G. F. V. Leary, E. Butler, C. D. M. Buckley, M.C.

Captains to be acting Majors, August 14th, 1918: J. P. Charnock, F. Cook, J. W. Cannon.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL SERVICE.

Temporary Lieut.-Colonel G. J. Boyce, D.S.O., C.A.M.C., to be Assistant Director of Medical Services, and to be acting Colonel whilst so employed.

CANADIAN ARMY MEDICAL CORPS.

The following retire in the British Isles: Temporary Major (acting Lieutenant-Colonel) S. R. Harrison; temporary Majors J. H. M. Bell, W. F. Nicholson, M.C.; honorary Captains E. H. Bradley, R. G. Mathews; temporary Captains A. Arthur, A. Plouffe.

Temporary Captains to be acting Majors: J. A. M. Hemmeon (whilst employed at No. 3 Canadian General Hospital), D. A. Morrison, M.C., W. A. Richardson (whilst in command No. 2 Canadian Sanitary Section).

SOUTH AFRICAN MEDICAL CORPS.

The following officers relinquish their commissions:—Temporary Major and retains the rank of Major: M. S. Power, D.S.O. Temporary Captains and retain the rank of Captain: W. Smith, P. A. Smuts, J. Granger, A. R. Friel, B. Sampson, M.C.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel W. B. Mackay, C.M.G., relinquishes his commission on account of ill health contracted on active service, and retains the rank of Lieutenant-Colonel.

To be acting Lieutenant-Colonels while specially employed: Captains (acting Majors) H. Paterson, M. S. Double.

The following officers relinquish their acting rank on ceasing to be specially employed: Majors (acting Lieutenant-Colonels) G. H. L. Hammeton, C.M.G., D.S.O., H. Henry, M.C. Captains (acting Lieut.-Colonels) A. Baxter, W. Duncan. Captains (acting Majors) E. L. Rowsa, W. Scarisbrick, C. A. Webster, J. S. Ward, T. B. McKee, F. A. W. Drinkwater, R. Waterhouse, W. K. Barron, C. Hartley, J. J. Ridley, J. H. Wright.

Captain (acting Major) A. E. Ridsdale relinquishes his acting rank on vacating appointment of Deputy Assistant Director of Medical Services.

Captain W. H. H. Bennett is restored to the establishment.

1st Eastern General Hospital.—Captain R. V. Slattery is restored to the establishment.

2nd Eastern General Hospital.—Lieut.-Colonel E. F. Maynard is restored to the establishment.

1st London General Hospital.—Majors W. McA. Eccles is seconded for service at the War Office. Captains H. D. Clement-Smith and J. H. Thursfield are restored to the establishment.

1st London Sanitary Company.—Captain (acting Major) A. A. McWhan relinquishes his acting rank on ceasing to be specially employed.

2nd London Sanitary Company.—Major C. A. Spooner is restored to the establishment.

2nd Northern General Hospital.—Captain H. J. Macvean is restored to the establishment.

3rd Scottish General Hospital.—Major (acting Lieut.-Colonel) R. Riddell relinquishes his acting rank on ceasing to be specially employed. Captain D. Watson is restored to the establishment.

3rd Southern General Hospital.—Captains W. J. Foster and E. W. Rowland are restored to the establishment.

5th Southern General Hospital.—Captain H. Burrows, O.B.E., is now seconded, whilst holding a temporary commission in the R.A.M.C. Captain J. E. Falser is restored to the establishment.

APPOINTMENTS.

EDINBURGH ROYAL INFIRMARY.—The following appointments have been made: Resident Physician—F. Henderson, M.B., Ch.B., to Professor Sir R. W. Philip. Non-resident House-Surgeon—J. S. Arkle, M.B., B.S., L.R.C.P., M.R.C.S., to Dr. Sym. Clinical Assistants—M. H. Barton, M.R.C.S., L.R.C.P., to Dr. Sym; Wm. J. Crauston, M.C. (Major, U.S. Army), to Dr. Paterson; Miss Mary F. Liston, M.B., Ch.B., to Mr. W. J. Stuart; J. G. Dobson, M.B., Ch.B., to Mr. W. J. Stuart; Miss Marjorie Geep, to Dr. Chalmers Watson.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

MILLER.—On the 7th May, the wife of T. Davidson Miller, M.B., B.S., Eastcourt, Sidcup, Kent, of a daughter.

WHITE.—On May 10th, at 1, Albemarle Road, Withington, Manchester, the wife of C. Powell White, M.D., F.R.C.S.—a son.

DEATHS.

BOOTH.—At 1, Carden Place, on May 8th, James Mackenzie Booth, M.A., M.D., C.M. Funeral private. No flowers, by request.

FINNY.—May 8th, 1919, at "Tamesa," Kingston Hill, Surrey, Rosa, the wife of William Evelyn St. Lawrence Finny, M.D., J.P., Barrister-at-Law, Inner Temple. Funeral service, Parish Church, Kingston-upon-Thames. Interred, Kingston Cemetery, May 7th, 1919.

REID, William Bramwell.—On May 7th, 1919, at Lampton Road, Hounslow, William Bramwell Reid, M.B., C.M.Edin., D.P.H., Medical Officer of Health, Heston and Isleworth, beloved husband of E. A. R. Reid.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Tuesday, General Meeting of Fellows, 5 p.m. Election to Fellowship. Wednesday, 8.30 p.m., Social Evening, 9.30 p.m., Mr. Jonathan Hutchinson: Art and Morality. Section of Psychiatry: Tuesday, 5 p.m., Annual Meeting. Section of History of Medicine: Wednesday, 5 p.m., Rabelais.—Mr. W. F. Smith: His Books and Life. Professor Wright: Medical Aspects of his Writings. Section of Study of Disease in Children: Friday, 4.30 p.m., Annual Meeting. Cases.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	MAY.
23 Fri.	London: Propaganda Subcommittees, 2.30.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 24TH, 1919.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he or she belongs.

Matters Referred to Divisions.

ANNUAL REPRESENTATIVE MEETING, 1919, IN LONDON.

Thursday, July 24th, and following day(s).

FURTHER NOTICES OF MOTION.

(A) AFFECTING ARTICLES OR BY-LAWS OF ASSOCIATION.

Decisions on Matters of Urgency and Importance.

1. By Plymouth:

That amendments be made to the existing Regulations or By-laws, or if necessary the same be repealed and new ones adopted whereby more prompt and active steps can be taken in matters of urgency and importance to secure quicker decisions and results, rather than by the present system of referring such matters to and from Divisional, Branch, and Council Meetings, by which much valuable time is lost.

Representation of Wales in Council of Association.

2. By South Carnarvon and Merioneth:

That the Annual Representative Meeting, 1919, amend By-law 46, as to the composition of the Council, as follows:

(i) That paragraph (a) of the By-law be amended by substituting for the words "twenty-four," in the first line, the words "twenty-eight."

(ii) That paragraph (c) of the By-law be amended by substituting for the word "twelve," in the first and fifth lines, the word "fourteen."

[Extract from Existing By-law 46.

COUNCIL.—Composition.

46. The Council shall be composed of the members *ex officio* mentioned in the Regulations and of members elected in manner following, namely:—

(a) Twenty-four by the Branches and Divisions of the Association in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned.

(c) Twelve by the elected Representatives of the Constituencies comprised in the Branches and Divisions of the Association in the United Kingdom, which Branches and Divisions shall be formed for that purpose into twelve groups as hereinafter mentioned, the Representatives of all the Constituencies in each such group being entitled together to elect one member of Council.]

Constitution of Welsh Committee.

3. By South Carnarvon and Merioneth:

That the Annual Representative Meeting amend the Schedule to the By-laws as to the Welsh Committee by inserting the words Wales (or South Wales) "*including Monmouthshire,*" instead of the words Wales (or South Wales) "*or Monmouthshire*" or "*and Monmouthshire.*"

[The existing Schedule as to the Welsh Committee provides that it shall contain the following members *ex officio*: the Secretaries of the North Wales and the South Wales and Monmouthshire Branches; all the members of the Council who represent Branches in Wales or Monmouthshire; that its appointed members shall be one member appointed by the North Wales Branch, two members appointed by the South Wales and Monmouthshire Branch, and one member appointed by the members of the Shropshire and Mid-Wales Branch resident in Wales; that its duties, powers, etc., shall be to consider all matters specially concerning Wales or Monmouthshire; and that it shall have an honorary secretary resident in Wales or Monmouthshire, and shall meet at such place and time as the Committee may itself direct.]

(B) AFFECTING ADMINISTRATION OF ASSOCIATION.

Areas of Divisions and Branches.

4. By South Carnarvon and Merioneth:

That the Council exercise its power under Article 12 (2) to modify Divisions and Branches and the local areas thereof so that no Division or Branch shall consist partly of members resident in England and partly of members resident in Wales.

Grouping of Branches and Constituencies for Election of Members of Council.

5. By South Carnarvon and Merioneth (Amendment to Recommendation of Council, SUPPLEMENT, May 3rd, 1919, page 73, or SUPPLEMENT, May 10th, page 91, item 5):

That for the words "at present allotted to the parts of the United Kingdom—namely, 16 to England and Wales, 4 to Scotland, and 4 to Ireland under By-law 46 (a), and 8 to England and Wales, 2 to Scotland, and 2 to Ireland under By-law 46 (c)," at the end of the Recommendation, there be substituted the following words:

"allotted at this Meeting to the parts of the United Kingdom—namely, 16 to England, 4 to Wales, 4 to Scotland, and 4 to Ireland under By-law 45 (a), and 8 to England, 2 to Wales, 2 to Scotland, and 2 to Ireland under By-law 46 (c)."

(C) AFFECTING POLICY OF ASSOCIATION.*
Organization of Medical Profession.

6. By Bournemouth:

That although the Council of the Association should be given every opportunity of circulating its reasons against the organizing of the profession on trade union lines, it should not endeavour to prevent such members of the Association as may not be convinced by the arguments used from joining any other body which is attempting to combine the profession on such lines, and should encourage conferences with all bodies, representing members of the profession, to secure joint action to obtain satisfactory conditions of practice.

7. By Bournemouth:

That in view of the fact that the success of any action on behalf of the profession is dependent upon the number of practitioners who do not belong to any organization and whose views cannot therefore be ascertained, it is desirable that a united appeal should be made to them by all the societies in any way representing professional interests, urging them to join one at least of such societies.

Ministry of Health.

8. By Mid-Cheshire:

That when the Ministry of Health is established, before any practical change involving services and emoluments of the profession be introduced, it should be submitted to the Divisions and brought before a Special Representative Meeting, with a view to combined action of the whole profession in reference thereto.

Adequate Remuneration for Medical Certificates.

9. By East Norfolk:

That it is contrary to all principles of justice that medical practitioners should be called upon to furnish certificates without adequate fee—for example, notification of births.

Diagnosis of Infectious Disease.

10. By Newcastle-upon-Tyne:

That a fee of 2s. 6d. be paid for any specimens sent to bacteriological laboratories for diagnosis of suspected infectious disease, the above fee to include postage expenses.

Remuneration Limit for Non-manual Workers under the National Insurance Acts.

11. By Newcastle-upon-Tyne:

That the Representative Body views with alarm the reported increase of the wage limit for non-manual workers from £160 to £250 under the National Health Insurance Acts, and requests the Council to use all its powers to prevent such a diminution of private practice in persons well able, and mostly desirous, to pay private fees.

Capitation Fee under National Insurance Acts.

12. By Mid-Cheshire:

That the remuneration of panel practitioners be not less than 12s. 6d. per head per patient.

13. By South-Eastern Counties (of Edinburgh Branch):

That the Association forthwith take action to secure a material increase in the capitation fee under the National Health Insurance Acts.

Question of Records and other Clerical Work under National Insurance Acts.

14. By Mid-Cheshire:

That unless increased remuneration asked for is granted, this Meeting protests in the strongest way possible against reimposition of records being kept, and other clerical work, unless adequate payment be made for the same.

Treatment of Sailors and Soldiers at Voluntary Hospitals.

15. By Mid-Cheshire:

That for all work for sailors and soldiers, whether discharged or not, for any diseases or injuries connected with the War undertaken at voluntary hospitals, the medical staffs should be adequately remunerated.

Establishment of Auxiliary Hospitals.

16. By Bournemouth:

That in any scheme of medical reconstruction, arrangements should be made for auxiliary hospitals in which general practitioners could treat their own patients.

* For Report as to Revision of Ethical Rules of Procedure see next column, and for Recommendation, see page 108.

REVISION OF ETHICAL RULES OF
PROCEDURE.

PURSUANT to the instructions referred to in paragraph 86 of the Annual Report of Council (see SUPPLEMENT, May 3rd, 1919, page 76) the Rules governing procedure in Ethical matters have been carefully revised.

The alterations considered necessary in view of the joint Opinion of Council and the experience already gained in the practical working of the Rules now in force are set out below. The revised Rules as approved by the Annual Representative Meeting, 1915, are of three kinds: (i) Of a Division not itself a Branch; (ii) a Branch composed of one Division; and (iii) a Branch composed of several Divisions; but it is only necessary to print now the alterations required in one set of Rules. The Rules of a Division not itself a Branch are used for this purpose, but it must be clearly understood that similar consequential alterations must also be made in the Rules of a Branch composed of one Division and of a Branch composed of several Divisions.

The complete set of Ethical Rules as approved by the Annual Representative Meeting, 1915, were printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 8th, 1915, pages 208-218, and a copy will be sent to any member on application to the Head Office.

ALTERATIONS IN THE ETHICAL RULES OF A DIVISION
NOT ITSELF A BRANCH.

(Words in square brackets [] are deleted and words underlined have been inserted.)

RULE 3.

(a) It shall be the duty of the Honorary Secretary of the Division to notify every Member of the Division of every Resolution as to professional conduct duly adopted by the Division in accordance with these Rules; and [subject to such instructions as may be received from the Division in General Meeting,] it shall rest in the discretion of the Executive Committee, subject to the approval of the Central Ethical Committee being first obtained, to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession residing within the area of the Division who is not a Member of the Association.

(b) It shall be the duty of the Honorary Secretary of the Division to notify every Member of the Association coming to reside within the area of the Division, and every newly-elected Member of the Division, of every Resolution as to professional conduct duly adopted by the Division in accordance with these Rules, and further it shall rest in the discretion of the Executive Committee, subject to the approval of the Central Ethical Committee being first obtained, to cause any such Resolution or Resolutions to be brought to the notice of any member of the profession who comes to reside within the area of the Division who is not a Member of the Association.

RULE 4.

Subject to instructions of a meeting of the Division, the Executive Committee may, subject to the approval of the Central Ethical Committee being first obtained—

(i) cause to be brought to the notice of any other Division or of any Branch of the Association a Resolution of the Division as to professional conduct, and may request support from such Division or Branch with a view to making the operation of such Resolution more effective;

(ii) cause to be brought to the notice of every Member of the Division and, if thought fit, to the notice of every member of the profession residing within the area of the Division, any Resolution as to professional conduct adopted by any other Division or Branch, of which the Division shall have received official notice. This Rule shall [not] only apply to Resolutions passed under Rule 2 [relating to the professional conduct of individual practitioners.]

RULE 5.

(The revised form of this rule is printed in full on the next page.)

If a Resolution of the Division shall have reference to the terms or conditions upon which practitioners should accept or hold Appointments of any kind, it shall be the duty of the Honorary Secretary of the Division when notifying Members of the Division of the adoption of such Resolution, or when bringing such resolution to the notice of any member of the profession residing within the area of the Division who is not a Member of the Association, in pursuance of these Rules, to request those practitioners who then hold Appointments of the kind in question, upon terms or under conditions inconsistent with the Resolution, to take the necessary steps within a period of one calendar month to terminate such Appointments in accordance with the terms of their engagement, or to secure such modifications of the terms or conditions of such Appointments as shall be necessary for compliance with the Resolution, and no further action shall be taken upon the Resolution under these rules with respect to such practitioner until the expiration

of a period of one calendar month from the time when such request was made.

If any practitioner shall within such period satisfy the Honorary Secretary of the Division that he has given such notice as is required under the terms of his engagement to terminate such Appointment, no further action shall be taken under these Rules with respect to such practitioner until the expiration of such notice.]

RULE 5 (as revised).

If a resolution of the Division shall have reference to the terms or conditions upon which practitioners should accept or hold Appointments of any kind, it shall be the duty of the Honorary Secretary of the Division—

(a) When notifying Members of the Division of the adoption of such Resolution, in pursuance of these Rules, to request those Members who then hold Appointments of the kind in question, upon terms or under conditions inconsistent with the Resolution, to take the necessary steps within a period of one calendar month to terminate such Appointments in accordance with the terms of their engagement, or to secure such modifications of the terms or conditions of such Appointments as shall be necessary for compliance with the Resolution, and no further action shall be taken upon the Resolution under these Rules with respect to such Member until the expiration of a period of one calendar month.

(b) When bringing such Resolution to the notice of any member of the profession residing within the area of the Division who is not a Member of the Association in pursuance of these Rules, to suggest to those practitioners who then hold Appointments of the kind in question, upon terms or under conditions inconsistent with the Resolution, the propriety of taking the necessary steps within a period of one calendar month to terminate such Appointments in accordance with the terms of their engagement, or of securing such modifications of the terms or conditions of such Appointments as shall be necessary for compliance with the Resolution.

If any practitioner shall within such period satisfy the Honorary Secretary of the Division that he has given such notice as is required under the terms of his engagement to terminate such Appointment, no further action shall be taken under these Rules with respect to such practitioner until the expiration of such notice.

RULE 13.

In any case in which the Ethical Committee of the Division is of opinion that it would be undesirable, in the interests of the profession, that the complaint should be investigated locally, the Committee shall have power to refer the investigation to the Branch Council or the Central Ethical Committee, and all documents bearing on the case shall be sent to the Honorary Secretary of the Branch or the Head Office, as the case may be.

RULE 15.

In all other cases the Ethical Committee of the Division shall, after due investigation, present to a Special Meeting of the Division, or to the next Ordinary Meeting, at its discretion:—

(1) A Report of the facts as found by the Committee from the evidence placed before it, and
(2) a Recommendation to the Division in one of the following forms:—

- (i.) That the Division express the opinion that the complaint has not been established.
- (ii.) That the Division express the opinion that no offence has been committed against the Rules (or Resolutions) of the Division, [or (the decisions of the Association),] or (the generally accepted principles of professional conduct), and that no action be taken.
- (iii.) That the Division express the opinion that the complaint is frivolous, and that the case be dismissed.
- (iv.) That the Division express the opinion that has committed an indiscretion and error of judgement, but that his conduct does not call for censure.
- (v.) That the Division express no opinion upon the case, and refer the whole of the facts for the consideration of the Branch Council or the Central Ethical Committee.
- (vi.) That the Division express the opinion that has violated
(a) the Rules (or Resolutions) of the Division, [or (the decisions of the Association),] and
(b) the generally accepted principles of professional conduct,
but that, in consideration of faults on the part of others concerned, the case be dismissed.
- (vii.) That the Division express the opinion that has violated
(a) the Rules (or Resolutions) of the Division, [or (the decisions of the Association),] and
(b) the generally accepted principles of professional conduct,
and resolve that he be, and hereby is, censured.

(viii.) That the Division express the opinion that the conduct of has been (or is)

- (a) in contravention of the Rules (or Resolutions) of the Division, [or (the decisions of the Association),] and
- (b) detrimental to the honour and interests of the Association, and
- (c) detrimental to the honour and interests of the medical profession, and (if a Member)
- (d) resolve that he be informed of this finding of the Division and allowed until to reconsider his position; that the Ethical Committee of the Division be instructed to report in due course to the Division upon his reply, if any, and that, if upon such further report the Division shall consider his reply unsatisfactory, or if no reply be received within the time specified, the matter shall forthwith be reported to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

(ix.) That the Division express the opinion that the conduct of has been (or is)

- (a) in contravention of the Rules (or Resolutions) of the Division, [or (the decisions of the Association),] and
- (b) detrimental to the honour and interests of the Association, and
- (c) detrimental to the honour and interests of the medical profession, and (if a Member)
- (d) resolve that the Report of the Ethical Committee and the findings of the Division be reported forthwith to the Council of the Association, in order that the propriety of his remaining a Member may be considered.

RULE 28.

[Subject to the provisions herein contained, no] It is undesirable that a Member of the Division should [shall] meet in consultation or accord any professional recognition (other than such as may be necessary in the discharge of an official duty by a Public Medical Officer or in circumstances of great urgency affecting the life of a patient) to a medical practitioner who shall have been declared by Resolution of the Division to have acted in contravention of any Rule or Resolution of the Division as to professional conduct, of which such practitioner shall be proved to have had notice in accordance with these Rules, or who shall have been declared by Resolution of the Division [to have acted in contravention of any decision of the Association or] to be deemed guilty of conduct detrimental to the honour and interests of the medical profession, provided that,

[(a) this Rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such Officer;

(b) in circumstances of great urgency, affecting the life of a patient, a Member of the Division may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Division, who shall transmit them to the Ethical Committee of the Division, and it shall rest with the Ethical Committee to consider and report to the Division if in its opinion the circumstances were not such as to justify such action;

(c) any member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal, as provided in these Rules, to the Branch Council, and from the Branch Council to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Division or Branch Council, as the case may be, and pending the decision of such appeal (if any) the operation of this Rule in the case shall be suspended;

(d) If the Division shall, after the adoption of a Resolution [of the kind] as herein defined [in the first part of this Rule,] subsequently resolve that in the opinion of the Division the conduct of the practitioner referred to in such Resolution is no longer deserving of censure, [or that professional recognition should no longer be withheld from him,] this Rule shall cease to apply to such practitioner, and the decision of the Division shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original Resolution of censure.

RULE 29 (RULE "Z").

(a) In every case in which the Division shall, after due inquiry in accordance with these Rules, have passed a Resolution declaring that in the opinion of the Division the conduct of any medical practitioner, whether by contravention of the Rules or Resolutions of the Division, [or of the decisions of the Association,] or otherwise, has been (or is) detrimental to the honour and interests of the medical profession, it shall be the duty of the Honorary Secretary of the Division to submit the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Central Ethical Committee, to cause such Resolution to be

brought directly to the knowledge of every Member of the Division by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Division to authenticate by his signature.

(b) In any case in which the Division shall, at the time of, or subsequently to, the adoption of a Resolution of the nature contemplated by paragraph (a) of this Rule, have also resolved that, in the opinion of the Division, it is desirable that such Resolution shall be brought officially to the notice of any specified Divisions or Branches of the Association, it shall be the duty of the Executive Committee of the Division to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said Resolution to be transmitted by the Honorary Secretary of the Division to the Honorary Secretary of the Divisions or Branches so specified.

FORM OF NOTICE REFERRED TO IN PARAGRAPH (a):

BRITISH MEDICAL ASSOCIATION.

..... Division.

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule 29 of the Division, Notice is hereby given that at a General Meeting of the Division, held at on the day of a Resolution in the following terms was duly passed:—

"That in the opinion of this Division the conduct of of has been (or is) detrimental to the honour and interests of the medical profession."

Signed in pursuance of the Rules of the Division of the British Medical Association.

.....
Honorary Secretary.

(NOTE.—The Central Ethical Committee desires to draw the attention of the Division to the necessity of Notices such as the above being circulated in sealed envelopes, and marked "Private and Confidential," for the use of Members of the Division exclusively.")

The Council recommends:—

Recommendation: (a) That the Revised Rules governing procedure in ethical matters of (i) a Division not itself a Branch, (ii) a Branch composed of one Division, and (iii) a Branch composed of several Divisions (SUPPLEMENT, May 24th, 1919, pages 106-8) be approved.

(b) That all Divisions and Branches in the British Islands be urged to adopt the Revised Rules governing procedure in Ethical matters as approved by the Representative Body, 1919, without modification and in substitution for any Ethical Rules now in use by the Divisions and Branches respectively, which will not be recognized after December 31st, 1919.

THE ORGANIZATION OF THE PROFESSION.

CORRESPONDENCE.

The Insurance Income Limit.

SIR.—When Mr. Lloyd George fixed the income limit at £160 he said it was for convenience of administration only, being the exemption from income tax figure, and therefore nothing to do with money value or ability to pay private fees. As a matter of fact, to be consistent the limit should be decreased to £120—the present exemption figure. Numbers have already gone out of insurance because their incomes had been raised above the limit, and frequently proud of it and pleased were they. I submit, therefore, that our remuneration has nothing at all to do with this question, which is one of money value, and must not be allowed to confuse the argument. Our remuneration, even if fair in 1913, cannot be now, and must be raised in any case.—I am, etc.,

London, E.5, May 14th.

C. E. EVANS.

Insurance Conferences: Income Limit.

Sir,—I should like to express my earnest hope that the conferences and other meetings of the profession will come to a really definite decision on the various details on which the profession is now consulted by the Insurance Acts Committee.

The great defects of the conferences at which I have been present in the past are that scarcely any of the delegates have received definite instructions how to vote, and appear to be ignorant of the views of their constituents.

The result is that a non-committal resolution or postponement of the question is the general rule. It would be a far better plan for the Insurance Acts Committee to submit certain questions requiring a plain "No" or "Yes" as answer. Certainly at all the meetings the various points for decision ought to be put to the vote and the result recorded.

I hope all Divisions and Local Medical and Panel Committee meetings will record their resolve to resign from the panel rather than consent to the income limit being raised to £250 a year. People earning this income have no claim to be treated on contract terms; they can afford to pay a private practitioner. Our original limit was £104 and we were forced to take £160. I am quite certain that if we consent to this it is the first step to the ruin of private practice, and that, although it is asserted that the rise only applies to certain persons, yet it will lead to the general inclusion of everybody earning up to £250 a year.—I am, etc.,

Buckingham, May 19th.

ARTHUR E. LARKING.

MEETINGS OF THE PROFESSION.

BOLTON.

A GENERAL meeting of the practitioners of Bolton and district was held at Bolton on May 9th, 1919, for the purpose of hearing an address by Dr. Cox. The meeting was called by the Bolton and Wigan Divisions and the Local Medical and Panel Committees, and was well attended.

SIR THOMAS FLITCROFT, who took the chair, in introducing Dr. Cox to the meeting expressed his pleasure at seeing so many medical men from Wigan present, and was sure that every one at the meeting would appreciate the importance of the address that Dr. Cox was about to deliver, as it was anticipated that he would during its course give sound advice to insurance practitioners on the proposed alterations in the Agreement for 1920 and endeavour to dispel any doubts or fears which might be entertained as to the security or legality of the National Insurance Defence Trust.

Dr. Cox said that it was the first time he had had the opportunity of addressing the medical men of Bolton and Wigan, and he would at their invitation deal with the proposed revision of service under the Insurance Acts for 1920, and with the necessity for the formation of the National Insurance Defence Fund. Two documents would shortly be in the hands of every practitioner, and he hoped that these reports would be read and discussed, and the suggestions contained therein considered from every side. He gave a summary of the alterations proposed, and warned the meeting not to repeat the mistake of mentioning in negotiations a rate of remuneration of work until it was ascertained what amount and conditions of work were to be expected. If the terms were unsuitable they could refuse to sign the agreement, provided there was a backing of at least 80 per cent. of panel practitioners, and, what was more important, a substantial fighting fund. As every practitioner in the district had received the circular M.21, they would know the objects of the Defence Trust Fund, and the method of raising it. He impressed upon the meeting the urgent need for this Fund.

In the discussion which took place the following took part: Drs. REES, READMAN, GLEN-PARK, and FRANCE (Wigan), Drs. RACKER and MAWSON (Bolton). Doubt was expressed as to whether the fund could be used for what were practically trade union purposes without actually being in the hands of a trade union.

Dr. COX, replying generally to the questions, made it clear that the Trust Fund would not be in the hands of the British Medical Association, but of trustees (the Insurance Acts Committee), and therefore could be used for compensation purposes without fear of confiscation and with no more than the usual risks of litigation. He quoted as a precedent the unopposed uses to which the National Insurance Defence Fund of 1912 had been put. Eminent counsel's advice had been taken as to the legality of that fund, and advice equally eminent had been obtained as to the soundness of this fund, and they were assured that it was lawful in every respect. The National Union of Teachers, which was not a trade union, did all its protective and fighting work by means of trusts with excellent results, and had done so for many years. The Association, in his opinion, possessed all the advantages of a trade union without the disadvantages. There would be ample time for the individual practitioner to decide whether the terms of the new agreement were acceptable or not. The

British Medical Association was a constitutional body, and the Insurance Acts Committee (composed largely of direct representatives of insurance practitioners) was therefore able to obtain and convey to the Government department concerned the decision of the majority of the practitioners in the country. Dr. Cox concluded his address by asking those present who were not already members of the Association to join it, for their own advantage and for the promotion of professional unity.

Sir THOMAS FLITCROFT proposed a vote of thanks to Dr. Cox, which was unanimously carried.

BRADFORD.

A general meeting of the whole medical profession of the district was held on May 13th under the auspices of the Bradford Division of the British Medical Association and the Bradford Local Medical and Panel Committee. There were about 70 medical men present, and the meeting was addressed by Dr. A. Cox, O.B.E., Medical Secretary of the Association.

Dr. Cox first asked those present to consider carefully the report on the conferences of members of the profession convened by the Insurance Commissioners, and also the report of the Insurance Acts Committee on revision of conditions of service and possible extension of service, both of which would shortly be in their hands; he urged them to go into the propositions very closely, as they had been designed to give a better service and so prevent the people from having real cause to press for a "whole-time service." He also informed the meeting that the Minister of Health designate (Dr. Addison) had been seen by a deputation, and was strongly in favour of the profession thoroughly discussing the reports.

War bonuses for 1919 were next mentioned, and the reasons for the proposed raising of the limit from £160 to £250 were given—namely, to prevent probably over one million already insured people from having to fall out of benefit owing to the rise in wages; but a protest had been made against those who were not previously insured coming in in 1919. The speaker remarked that a suggestion had been made to the Government that if £160 now equalled £250, then the medical men should be similarly treated in respect to capitation fees. No actual figure for capitation fee for 1920 was possible yet, as the profession would be very unwise to mention such a figure till it knew the terms of service.

Dr. Cox then spoke about the organization of the profession, and how its case could best be put before the Government; he said, "We do not want to fight, but we must be prepared to do so if necessary." He then outlined the preparations which have been made, and discussed the scheme for collective bargaining. Money was required to carry on such efforts and for any compensation which might be called for. Dr. Cox then appealed for whole-hearted support for the National Insurance Defence Trust.

Dr. MANKNELL, chairman of the Local Medical and Panel Committee, put the following resolution to the meeting; Dr. SHACKLETON seconded, and it was carried unanimously:

That this meeting of the panel practitioners of the Bradford insurance area approves the scheme of the Insurance Acts Committee for the establishment of a National Insurance Defence Trust, and promises to support the same.

Many questions were put to Dr. Cox, who replied thereto clearly and effectively, and a hearty vote of thanks was given to him for coming to address the meeting.

SHEFFIELD.

A representative meeting of the medical profession of Sheffield and district, at which Dr. Cox was the principal speaker, was held at Sheffield on May 15th. The meeting was called jointly by the Sheffield and Barnsley Divisions and by the Local Medical and Panel Committees, all practitioners being invited to attend. Dr. MYLAN, chairman of the Sheffield Division, presided, and the attendance numbered about one hundred.

Dr. Cox, who had a very cordial reception, devoted the first part of his address to the discussion of the organization of the profession, with special reference to probable changes in the panel service in the immediate future. He then proceeded to explain very fully the National Insurance Defence Trust scheme, and dealt with the work which the Insurance Acts Committee had done, and proposed to do, in association with the Panel Committees of the country.

After Dr. Cox's address the following resolution was

moved by Dr. FORBES, chairman of the Sheffield Panel Committee:

That the Panel Committee be authorized to support the National Insurance Defence Trust as requested in Circular M.21 of the Insurance Acts Committee, and to increase the present voluntary deduction to enable that to be done.

Dr. Forbes, while stating quite frankly that in theory he was a trade unionist, said he was convinced, after giving the matter long consideration, that the medical profession was more likely to obtain what it wanted under the auspices of the British Medical Association, through the Insurance Acts Committee as now constituted, than it would ever be able to under a medical trade union, more particularly under the present trade union. As one instance of what the Insurance Acts Committee had done for the panel doctors, he pointed out that in the case of the treatment of discharged soldiers and sailors the method of payment adopted had meant in Sheffield a gain to the profession of more than £1,200 over the capitation rate, whereas had they been members of the Medico-Political Union, and carried out its orders, they would have been losers to the extent of more than £2,000.

Dr. SLACK, Secretary to the Rotherham Panel Committee, in seconding the resolution, said that since the new constitution of the Insurance Acts Committee, by which there was now an absolute majority of the panel profession, whether members of the British Medical Association or not, his committee, which had previously joined the Association of Panel Committees, had now resigned the membership of that body, and was working wholeheartedly with the British Medical Association.

An interesting discussion ensued, Dr. Cox dealing with a number of questions and points which were raised. Drs. BLYTHE and GORDON spoke in support of the resolution, which, on being put, was carried with two dissentients.

On the motion of Dr. A. E. BARNES, seconded by Dr. HUDSON, Dr. Cox was accorded a hearty vote of thanks for his interesting address.

CAMBRIDGE.

At a meeting of the medical profession residing in Cambridge and the adjoining district, on May 1st, with Dr. W. H. BOWEN in the chair, Dr. JAMES NEAL, Deputy Medical Secretary of the British Medical Association, explained the objects and constitution of the National Insurance Defence Trust.

Dr. Neal pointed out that the scheme was similar to the Central Insurance Defence Fund, which had been established by the Association in the days of the Insurance Acts trouble. Of that fund £17,000 had been expended on administrative purposes and over £5,000 in compensating individual practitioners who suffered loss through their loyalty to the policy of the Association. That fund had been vested in the Council of the Association and kept entirely distinct from the funds of the Association. In the same way the new trust fund would be vested in the Insurance Acts Committee. The whole scheme had been drawn up under legal advice, and he had no hesitation in commending it to the profession. It had never been more necessary than now for the profession to unite solidly in the protection of its interests, and there was a grave danger that the recent creation of rival medical organizations would weaken the profession and render it powerless to hold its own in the forthcoming struggle. Dr. Neal referred to the many benefits which the profession had secured as a result of the Association's activities, and urged the imperative necessity of the collective views of the profession being voiced by one organization rather than by a number of rival bodies, whose conflicting views could only result in disaster.

Dr. STANCOMB, who followed, agreed that the Association had done a good deal of work in 1912, and up to a point had been successful, but it failed because it had not the powers of a trade union. He hoped that some arrangement would be arrived at whereby a trade union would be recognized as a valuable adjunct of medical protection, and that the Association would adopt the Medico-Political Union as its agent. When other measures failed, and it came to a question of pressure, the Union should come in and be allowed to conduct the fight. There was no question of dividing the profession at all. The Association had a function and a position to fill which the Union did not desire to fill, but the Union possessed powers which the Association did not possess and never could possess.

An interesting discussion followed, in which various speakers questioned the advantage of a trade union method of organization as applied to the medical profession. Dr. NEAL and Dr. STANCOMB replied, and were accorded a hearty vote of thanks.

British Medical Association.**CURRENT NOTES.****Mileage "Units."**

PARAGRAPH 12 of document M.19 and the comment (in M.18) upon it of the Rural Practitioners Subcommittee has given rise to some difficulty owing to the word "unit" being often used in two senses in connexion with the distribution of a mileage fund. In paragraph 12 the word "unit" is used as a *unit of travelling*, and will be of varying kinds—for example, level miles, hilly road miles, foot-path miles (or quarter miles), and sea miles. The *unit of distribution* is a fraction of the travelling fund, and varying values can be given to the different units of travelling by giving to them a varying number of units of distribution. For instance, suppose the mileage fund of an area consisted of 1,000d., and that there were only two practitioners to participate therein. If practitioner A. travelled 100 miles on ordinary roads, while practitioner B. travelled 100 miles on "ordinary roads" and 20 miles on "other than ordinary roads," a higher value must be placed upon the 20 miles travelling on "other than ordinary roads." If the value placed upon "other than ordinary roads" was exactly double that placed upon "ordinary roads," the division of the 1,000d. would be arrived at thus:

A. having travelled on ordinary roads 100 miles would be entitled to	100 parts
B. having travelled on ordinary roads would be entitled to	100
And also in respect of having travelled 20 miles on other than ordinary roads, 20 multiplied by 2	40
	— 140 parts
	240

A. would therefore receive $\frac{100}{240}$ and B. $\frac{140}{240}$ of the mileage fund—that is, 41 $\frac{2}{3}$ d. and 58 $\frac{1}{3}$ d. respectively.

Meetings of Branches and Divisions.**EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.**

THE annual meeting of the Division was held at Newtown St. Boswells, on May 8th, when the following officers were elected:

Chairman: Dr. T. D. Luke. *Vice-Chairman:* Dr. A. D. Fleming. *Representative in Representative Body:* Dr. W. Blair (re-elected). *Representative on Branch Council:* Dr. McRobert. *Honorary Secretary and Treasurer:* Dr. M. J. Oliver.

A vote of thanks to the retiring chairman, Dr. A. J. Campbell, was accorded on the proposition of Dr. LUKE, who referred to Dr. Campbell's interesting address to the Division. The meeting resolved to adhere to a resolution, previously passed by the Division, to oppose the institution of a State Medical Service, and recorded its opinion that the size of a panel practice should not be unlimited; and that the Insurance Committee should endeavour to secure a more even distribution of medical service to panel patients. The representative and the honorary secretary were instructed to make efforts to raise the fees in private practice by not less than 33 $\frac{1}{3}$ per cent. on pre-war rates; and a motion was carried urging the Association to take action to secure a material increase in the capitation fee under the Insurance Acts. After further business it was resolved that members who have been on service should be invited to communicate their clinical and other experiences to the next ordinary meeting in September.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

A MEETING of the Branch was held on April 26th at Inverness, with Dr. T. C. MACKENZIE in the chair. Owing to the difficulty of railway communication between Fort William and Inverness, the meeting, while regretting the loss of members in the west, approved a suggestion that members in the Lochaber district should be affiliated with Glasgow. After discussion of the Scottish Board of Health Bill the meeting, while on the whole approving the scheme, resolved that the number of medical members should be increased to three, one at least of whom should be a general practitioner. It was also unanimously resolved that the fee for the notification of infectious diseases should be not less than 5s., and that the same fee should be given for notification of births and deaths.

NORTH OF ENGLAND BRANCH: CLEVELAND DIVISION.

A MEETING of the Division was held at Saltburn on May 14th. There was a large attendance of members, and a number of non-members and representatives of neighbouring Divisions were also present. Dr. J. F. FALCONER (chairman of the Division) presided, and the meeting was addressed by Dr. ALFRED COX, Medical Secretary of the Association, who took as his principal subjects the Insurance Act Agreement for

1920 and the Central Insurance Defence Trust. Subsequently the actions and policy of the Association during the last few years came in for some strong criticism by various members of the audience, and Dr. Cox replied in detail. The meeting terminated with a hearty vote of thanks to Dr. Cox for his address, proposed by the CHAIRMAN and seconded by Dr. R. E. HOWELL, President of the Branch.

SOUTH-WESTERN BRANCH: EXETER DIVISION.

THE annual meeting of the Division was held on May 8th, when Dr. G. G. GIDLEY was in the chair. The following officers for the ensuing year were elected:

Chairman: Dr. G. G. Gidley. *Vice-Chairman:* Dr. M. Cutcliffe. *Honorary Secretary:* Dr. R. Eager. *Representative in Representative Body:* Mr. Russell Coombe.

The question of calling a general meeting of the profession in this area to discuss the minimum fees to be charged was then considered. Mr. RUSSELL COOMBE explained that it was proposed to call a general meeting of the profession to set up some advisory body, on June 11th, at the annual meeting of the Branch, and he moved that the question of minimum fees be brought up at this meeting; this was seconded by Dr. EVANS and carried.

It was resolved to appoint a subcommittee to consider what administrative areas are likely to be used under the Ministry of Health, and what men in those areas would serve on the medical Advisory Board. It was agreed that a separate group of names for a medical advisory body should be chosen for the county and the Exeter portion of the Division. Dr. G. ATKINS (M.O.H. to the Devon County Council) and Dr. P. STIRK (M.O.H. to the Exeter City Council) described the arrangements so far made in connexion with the working of the Education and Maternity Child Welfare Acts in their respective areas. They were quite certain that if representation was made to their committees the claims of the local medical profession would be given due consideration, and that any additional information would be willingly supplied. Dr. Atkins and Dr. Stirk were cordially thanked for their attendance and suggestions, and it was resolved that an early meeting of the members of the profession in the Exeter area be called to consider the working of these Acts.

Association Notices.**NOMINATIONS OF COUNCIL FOR 1919-20
SESSION.**

THE following Nominations for Members of Council for the 1919-20 Session have been received:

**BRANCHES IN THE UNITED KINGDOM.
England.**

North of England, North Lancashire, and South Westmorland Branches: Professor R. A. Bolam, M.D., Newcastle-on-Tyne.

Yorkshire Branch: Arthur Manknell, M.B., Bradford.

Lancashire and Cheshire Branch: Sir James Barr, M.D., F.R.C.P., Liverpool.

East York and North Lincoln and Midland Branches: G. K. Smiley, M.B., Derby.

Cambridge and Huntingdon, East Anglian, and South Midland Branches: E. O. Turner, M.B., Great Missenden, Bucks. John Frederick Walker, M.B., Southend-on-Sea.

Birmingham and Staffordshire Branches: E. Noël Nason, M.D., Nuneaton.

North Wales, Shropshire and Mid Wales, and South Wales and Monmouthshire Branches: Edward Lloyd Owen, M.D., Criccieth, Carmarthen. W. B. Crawford Treasure, M.D., Cardiff.

Metropolitan Counties Branch: Harold S. Beadles, M.R.C.S., L.R.C.P., 234, Barking Road, E. H. B. Brackenbury, M.R.C.S., L.R.C.P., 21, Quernmore Road, Stroud Green, N. H. G. Cowie, M.D., 7, Champion Park, Denmark Hill, S.E. Sir Bertrand Dawson, G.C.V.O., C.B., 32, Wimpole Street, W. W. McAdam Eccles, M.S., F.R.C.S., 124, Harley Street, W.

Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches: No return.

Dorset and West Hants, South-Western, and Wiltshire Branches: Russell Coombe, F.R.C.S., Exeter.

Oxford and Reading and Southern Branches: D. A. Sheahan, M.D., Portsmouth.

Kent, Surrey, and Sussex Branches: S. Morton Mackenzie, M.B., Dorking.

Scotland.

Aberdeen, Northern Counties, Dundee and Perth Branches: C. S. Young, M.R.C.S., L.R.F.P.S., Glas., Dundee.

Edinburgh and Fife Branches: G. Cranston Anderson, M.D., Methil, Fife. John Stevens, M.D., F.R.C.P.E., Edinburgh.

Glasgow and West of Scotland Branch (Four City Divisions): James R. Drever, M.B., Glasgow.

Glasgow and West of Scotland (Five County Divisions), Border Counties and Stirling Branches: John Goff, M.D., Bothwell.

Ireland.

Connaught and South-Eastern of Ireland Branches: No return.

Leinster Branch: No return.

Munster Branch: Joseph Giusani, M.D., Cork.

Ulster Branch: No return.

May 24th, 1919.

RANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—The annual meeting of the Central Division will be held at 18, Bennett's Hill, on Thursday, June 19th, at 3.30 p.m. Election of Representatives; instruction of Representatives; election of officers for ensuing year, etc.

METROPOLITAN COUNTIES BRANCH.—Mr. N. Bishop Harman and Captain Wilfred Kingdon, R.A.M.C. (Honorary Secretaries), give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C.2, on Friday, June 27th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of Council and of representatives of the Branch on the Central Council. (3) Alteration of certain rules. (4) President's Address: Mr. W. McAdam Eccles, "Reconstruction in Medical Education."

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.—Mr. Arthur E. Larking (Honorary Secretary), Buckingham, gives notice that a meeting of the Division, to which all medical men are invited, will be held at the Crown Hotel, Aylesbury, on Friday, May 30th, at 2.15 p.m. Lunch at 1.30.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.—Dr. L. Freeman Marks, Honorary Secretary (Brynheulog, Mumbles, Swansea) gives notice that the annual meeting of the Branch will be held at the Town Hall, Llanelli, on Thursday, June 12th, at 3.30 p.m.

SCHOLARSHIPS AND GRANTS IN AID OF SCIENTIFIC RESEARCH.

SCHOLARSHIPS.

The Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows:

1. An *Ernest Hart Memorial Scholarship*, of the value of £200 per annum, for the study of some subject in the department of State Medicine.
2. *Three Research Scholarships*, each of the value of £150 per annum, for research into some subject relating to the causation, prevention, or treatment of disease.

Each Scholarship is tenable for one year, commencing on October 1st, 1919. A Scholar may be re-appointed for not more than two additional terms.

The Conditions of the award of Scholarships are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

GRANTS.

The Council of the British Medical Association is also prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

Applications.

Applications for Scholarships and Grants for the year 1919-20 must be made not later than Saturday, June 28th, 1919, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX,
Medical Secretary.

429, Strand, London, W.C.2,
May 24th, 1919.

MEDICAL FEES UNDER THE MIDWIVES ACT, 1918.

DR. A. BATHURST BROWN of Donhead, Salisbury, has sent to us, with a view to publication, letters that have passed between himself and Dr. J. Tubb-Thomas, county medical officer for Wilts, on the working of the Midwives Act, 1918. Section 14 of this Act requires a midwife in an emergency to call in a registered medical practitioner, and requires the supervising authority in such case to pay the practitioner's fee according to a scale of fees fixed by the Local Government Board and

given in the JOURNAL of January 11th, 1919, p. 54 (£2 2s. when operative assistance is needed, and £1 ls. when it is not; with fees for anaesthetics and visits after the tenth day, and mileage). Dr. Tubb-Thomas (who has consented to publication of the correspondence) wrote to express regret at Dr. Bathurst Brown's refusal to assist midwives in emergencies in accordance with the schedule of fees settled by the Local Government Board in consultation with the British Medical Association. He added that mileage is paid in the county of Wilts at the rate of 1s. a mile each way for all distances over two miles from the practitioner's house for every visit paid to the patient or child, if called in for an emergency. The letter ended by suggesting that taken altogether the fee might be considered reasonable. Dr. Bathurst Brown replied that since he regards the schedule of fees as inadequate he must still refuse to assist midwives in emergencies. His reasons are briefly as follows: The private case usually follows a normal course, whereas the case in which a midwife needs help is always abnormal or the doctor would not be called in. Such cases are usually serious and often need considerable after-attendance, while if the case is septic the nurse abandons it and the doctor has to see it through. Finally, Dr. Bathurst Brown disapproves of "helping a half-qualified midwife out of her difficulties and lending direct encouragement to the unthrifty poor to make use of the doctor only in emergencies." He therefore states his intention of going to this class of emergency case for specialist fees only—namely, 3 guineas a case by day and 5 guineas by night, with 2s. 6d. a mile for after-attendance.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:—Surgeon Commander R. H. J. Browne has been placed on the retired list with rank of Surgeon Captain. Surgeon Commanders: A. R. Thomas to the *London Belle*, E. R. L. Thomas to the *Pekin*, A. J. Hewitt to the *Ramilies*, J. C. Rowan to Rosyth Dockyard, W. N. Blatchford to the *Inflexible*, M. J. Laffan to Chatham Hospital (temporary), B. F. Parish to R.M. Division, Chatham; R. D. Jameson, C.M.G., to Devonport Dockyard; H. Clift to the *King George V*, as S.M.O.; P. L. Crosbie to the *Tamar*, additional, for R.N. Sick Quarters, Wei-hai-wei; E. J. Finch, C.M.G., to R.M. Division, Portsmouth; T. D. Halaban, to R.N. Hospital, Bermuda; A. X. Lavertine to the *Victorious* as S.M.O. for duty with Rear Admiral commanding Orkneys and Shetlands; L. Lindop to the *Ganges*, additional, for R.N. Sick Quarters, Shotley; S. S. H. Woods to Plymouth Hospital, F. E. Boston to H. S. *Agadir*, S. F. Dudley to Haslar Hospital. Surgeon Lieutenant Commanders J. J. H. Rooney, A. F. Fleming, D.S.O., E. S. Wilkinson, R. Kennedy, E. A. G. Wilkinson, J. R. L. Page, W. B. Ormsby, A. W. Iredell, F. C. Robinson, M. T. Male, C. H. Dawe, R. Thompson, W. K. D. Breton, promoted to rank of Surgeon Commander. Surgeon Lieutenant Commanders: L. Warren to the *Queen Empress*, E. L. Atkinson, D.S.O., to the *Lord Norton*; B. S. Robson to the *Edinburgh Castle*, C. G. Sprague to the *Marchioness of Bute*, W. J. Haydon to H.M. Dockyard, Devonport; G. D. Walsh to the *Walton Belle*. Surgeon Lieutenant J. G. Stevens to the *London Belle*. Surgeon Lieutenants (temporary): C. I. Barber to the *City of Perth*, for Brightlingsea Naval Base; E. F. S. Gordou to the *Victorious II*, for Stanger Head Battery; G. H. Fitzgerald to the *Gilla*, E. Pollok and B. L. Lloyd to the *Agadir*, additional; G. L. Attwater to Haslar Hospital, G. Aubrey to the *Garth Castle*, A. S. S. Bisset to Plymouth Hospital, C. E. Cobb to the *Berwick*.

ARMY MEDICAL SERVICE.

Temporary Colonel John Atkins, K.C.M.G., relinquishes his commission and retains the rank of Colonel.

Temporary Colonel J. Sherren relinquishes his commission and retains the rank of Colonel.

Captain A. D. Stirling, D.S.O., to be Deputy Assistant Director General (temporary) to complete establishment, and to be temporary Major whilst so employed.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonels relinquish the acting rank of Colonel on reposting: A. H. Safford, W. Riach, C.M.G., J. A. Hartigan, C.M.G., D.S.O., J. P. Silver, D.S.O.

Lieut.-Colonel H. R. Bateman, D.S.O., to be acting Colonel while employed as A.D.M.S. of a Division.

Lieut.-Colonel A. H. O. Young retires on retired pay.

Temporary Major (acting Lieut.-Colonel) J. Dalrymple, C.M.G., O.B.E., to be acting Colonel.

The following relinquish the acting rank of Lieutenant-Colonel on reposting: Majors E. T. Potts, C.M.G., D.S.O., R. Storrs, S. M. W. Meadows, D.S.O., R. E. Humfrey, C.M.G., S. E. Lewis. Captain and Brevet Major J. D. Kidd, M.C. Captains A. N. R. McNeill, D.S.O., R. W. Galloway. Temporary Captains H. Stokes, F. R. Thornton, M.C.

To be acting Lieutenant-Colonels: Major R. B. Hole whilst specially employed. Major A. J. Williamson, Captain (acting Major) R. H. Thompson, M.C., Captain E. Catford. Temporary Captains H. E. S. Stiven, J. Scott, D. Miller.

To be acting Majors: Captains A. G. P. Hardwick (from February 3rd to 28th, 1919), J. K. Gaunt, R. R. Thompson, M.C., C. V. Shackleton. Temporary Captains J. T. Morrison, A. M. Malcolmson, G. T. Foster-Smith, C. Averill, F. R. Kirkman, T. M. Crawford, C. M. Geddie, H. G. Joyce, F. G. Milne, W. A. Hosson, A. G. Troup, C. G. McAdam, N. McAdam, G. G. Gregg, M.C., D. S. Taylor, J. C. D. Allan, K. Black, H. N. Webber, H. H. Ellison, F. S. Machin, R. H. Stevens, R. Heaton.

The following relinquish the acting rank of Major:—Captains: D. W. Pailthorpe, M.C., C. A. Bernard, M.C., A. Hendry, T. C. R. Archer, A. D. Stirling, D.S.O., T. I. Dunn, D.S.O., M.C., R. L. Ritchie, J. Bignam, M.C., H. S. Milne, M.C. Temporary Captains: H. Young, W. Morris, J. A. Paterson, M.C., H. G. Pesel, M.C., J. D. Cooke, M. W. Littlewood, A. W. H. Donaldson, F. J. McLay, M.C., J. T. Morrison, A. E. Drynan, J. C. Robb, W. Russell, M.C., A. Massey, J. Crawford, M.C., C. O. Bodman, T. T. Higgins, J. D. McEwen, R. L. Scott, R. E. H. Leach, A. T. Mackenzie, F. S. Machin, J. M. Clements, H. Colner, C. Rutherford, G. P. Armstrong, M.C., J. Buchanan, J. V. Holmes, W. J. Pearson, D.S.O., M.C., R. B. Heygate, O. C. Link.

Temporary Captain T. P. Devlin to be temporary Major without increased emoluments.

The notification regarding temporary Captain A. Drouin in the *London Gazette* of February 25th, 1919, is cancelled.

Late temporary Captains granted the rank of Captain: A. M. Cowie, A. J. Smith, F. G. Crookshank, J. D. C. White.

Temporary Lieutenants to be temporary Captains: R. M. Moore, W. H. Croly, A. W. G. Clark.

The following officers relinquish their commissions: Temporary Lieut.-Colonels F. H. Maturin, R. Bruce, D.S.O., and F. R. Hill. Temporary Majors and retain the rank of Major: R. H. Trotter, on ceasing to serve with the Huddersfield War Hospital; D. W. Hume and J. S. Law, on ceasing to be employed with the Norfolk War Hospital; H. H. Serpell, J. A. Torrens, W. G. K. Barnes. Temporary Captains and Brevet Majors and retain the Brevet rank of Major: W. J. Tulloch, H. H. Raw. Temporary Captain (acting Major) W. L. Lyall, and is granted the rank of Major. Temporary Captains, and are granted the rank of Major: J. C. Levis, M.C., W. Brown, F. B. Manser, J. S. Arkle, O.B.E., G. M. Miller, M.C., S. B. B. Campbell, W. Housman (March 15th, substituted for notification in the *London Gazette*, April 10th, 1919), J. M. Donnan (on account of ill health contracted on active service), H. W. Powell, F. B. Winfield, B. Whitehead, J. Parkinson, F. P. Joscelyne, W. G. Bryan, M.C., T. Ferguson, H. S. Davidson, J. Cunningham, P. J. Chissell, G. B. Elliott. Temporary Captains and retain the rank of Captain: H. M. Agnew, P. M. Heath, W. A. Brown, V. B. Anderson, R. J. Croxford, F. R. Barwell, R. M. Erskine, D. F. Macdonald, J. A. Hendry, J. S. Mitchell, J. P. Douglas, J. Dagliesh, E. W. Diggett, E. P. Harding, J. Cullen, J. A. Mortimer, R. A. M. Macleod, N. Macphail, M. T. MacMahon, S. E. Cathcart, W. S. Badger, J. R. C. Gordon, J. N. Cruickshank, M.C., C. K. Carroll, M.C., J. L. Hendry, E. W. D. Hardy, M.C. (March 15th, substituted for notification in the *London Gazette*, April 14th, 1919), R. S. Drew, W. P. Pinder, E. I. Davies, A. G. M. Middleton, M.C. (January 30th, substituted for notification in the *London Gazette*, March 22nd, 1919), W. J. Deadman, W. E. Burrows, G. McNeil, G. H. Morris, R. J. Merson (on account of ill health contracted on active service), W. Thomas, S. H. Hall, J. Rickards, M.C., R. M. Johnston, A. E. Pinniger, N. C. Patrick, A. S. M. Palmer, B. W. Gonin, E. M. I. P. Power, H. E. Fenton, F. L. Rigby, C. D. Pile, T. Ruddock-West, A. K. Waller, R. A. W. Procter, W. F. Rhodes, H. R. Pollock, R. E. Roberts, H. C. Attwood, J. Whitehead, W. Warnock, F. A. Winder, J. Ramsbottom, O.B.E., W. H. Rayner, G. E. Porter, J. G. McColl (on ceasing to serve with Home Hospitals Reserve), W. F. V. Simpson, J. E. Moorhouse, J. P. Blockley, E. V. Dunkley, A. P. Thom, G. Thomson, D. C. Drutt, W. P. Thomson, H. D. Stewart, L. R. Thomson, L. L. Swallow, M.C., B. Sweeten, E. A. S. Shaw, J. A. Ross, A. J. Eagleton, R. J. Tait, C. Thompson, A. H. Towers, A. W. Soper, E. White, H. N. Everard, E. R. Dermer, T. Barbour, H. W. Fox, H. A. Fenton, G. M. Mayberry, C. Cairnie, G. J. Farie, A. A. Cooper, C. E. A. Goddard, S. G. J. Dowling, C. F. Brady, D. T. Evans, J. J. Bekenn, R. A. Campbell, J. Cathcart, A. G. Carment (on account of ill health contracted on active service), J. E. Forster, A. Barber, P. Drummond, E. W. Atkinson, W. H. W. O. Carden, R. L. Crabb, J. T. Armstrong, T. Coogan, E. L. Christoffels, J. R. Collins, A. H. Gray, J. Bradley-Hughes, R. D. Fitzgerald, A. W. Forrest, G. B. Courtney, A. Folbergill, D. H. Collingham, F. P. Evers, J. G. Boyd, A. Boothroyd, W. J. Edgar, A. Cochrane, A. H. Coleman, O.B.E., W. S. George, E. Gandy, S. Brown. Temporary honorary Captain: R. M. Bradley, and retains the honorary rank of Captain. Temporary Lieutenants and retain the rank of Lieutenant: S. W. Ingram, F. J. Fox, K. H. Dyke, A. J. de Spiganoviez, S. Osborn, C. H. Steinbach, E. Burnet. Temporary honorary Lieutenant A. B. Pastel, March 15th, 1919, and retains the honorary rank of Lieutenant (substituted for notification in the *London Gazette*, April 28th, 1919).

ROYAL AIR FORCE.

MEDICAL BRANCH.

Major A. Paling relinquishes his commission on account of ill health, and is permitted to retain his rank.

The following are transferred to the unemployed list: Major P. H. Hadfield, Captains J. J. O'Mullane and C. Dickson, M.C., Lieutenant J. W. Yorke-Davis.

The following relinquish their commissions on ceasing to be employed: Honorary Lieut.-Colonel G. Dreyer, and is permitted to retain the rank of Lieutenant-Colonel; Major (acting Lieut.-Colonel) R. H. McGiffen.

Notification of May 13th concerning Captain C. F. Graves is cancelled.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain W. M. Dickson to be acting Lieutenant-Colonel. Captains to be Majors: C. V. Nicol, M.R. Taylor, D.S.O. Captain G. Dalziel, M.C., to be acting Major whilst specially employed.

Captains relinquish the acting rank of Major on reposting: W. J. Adie, A. J. Gilchrist, M.C., G. S. Mather, W. H. Elliott, M.B.E., W. Broughton-Alcock, W. B. Postlethwaite, M.C., J. C. Spence, M.C.

To be acting Majors: Captains S. W. M. Jones, C. R. McIntosh, R. A. Wilson, H. D. Brown, R. Nixon, Lieut. E. J. Patchett.

The notifications in the *London Gazette* of March 22nd and 31st, 1919, regarding Captains W. M. Dickson and J. E. W. Meenan are cancelled. Captain H. Chadwick to take rank and precedence in the R.A.M.C. and in the army as if his appointment as Captain bore date January 29th, 1919.

Lieutenants to be Captains: J. D. A. Champney, A. G. McColl, A. Piney, J. G. Lawn, M. Chalmers, A. Kennedy, J. H. Tighe, A. E. Cochrane, W. S. L. McLeish, J. Nicolson, J. J. Treanor, W. A. Walker, N. E. Kemm, D. MacQueen, V. J. Perez, I. G. Innes, J. Gilmore, G. M. S. Smith, G. A. Mitchell, G. H. Gidlow-Jackson, W. A. Jackson, J. D. White.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel H. C. Lampart relinquishes his commission on account of ill health and retains the rank of Lieutenant-Colonel.

Major A. L. S. Tuke, M.C., vacates the appointment of D.A.D.M.S. Major M. G. Foster is seconded whilst holding a temporary commission in the A.M.S.

Captain (acting Major) J. H. Thomas, D.S.O., to be acting Lieutenant-Colonel whilst specially employed.

Captains (acting Majors) L. T. Whelan, M.C., and J. Dale relinquish their acting rank on vacating the appointments of D.A.D.M.S.

Captain (acting Major) C. P. Searle, M.C., relinquishes his commission on account of ill health contracted on active service and is granted the rank of Major.

To be acting Majors whilst specially employed: Captains R. Powell, J. W. Anderson, J. C. W. Methven.

Captain G. H. Hunt is restored to the establishment.

Officers relinquish their acting rank:—Lieut.-Colonels (acting Colonels): C. T. Green, E. V. Gooding, D.S.O., A. M. McIntosh, and C. H. Howkins, on vacating appointments as Assistant Directors Medical Services. On ceasing to be specially employed: Major (acting Lieut.-Colonel) J. G. Martin. Captains (acting Lieut.-Colonels): G. I. Dominy, G. E. G. Mackay, M.C., H. G. Magrath (February 15th, 1919).

substituted for notification in the *London Gazette*, March 28th, 1919. Captains (acting Majors): C. D. S. Agassiz, M.C., R. Eager, J. G. Hill, H. P. Ashe, E. V. Connellan, H. Connop, S. S. Greaves, D.S.O., M.C. A. C. Mollace, M.C., W. T. D. Mart, G. G. Middleton, J. Morahan, D. A. R. Haddon, J. C. Newman, O.B.E., A. J. Watson, O.B.E.

1st London General Hospital.—Captain Sir T. J. Horder is restored to the establishment on ceasing to hold a temporary commission in the R.A.M.C.

4th London General Hospital.—Major G. N. Biggs is restored to the establishment.

2nd London Sanitary Company.—Lieutenant L. Lloyd to be Captain 1st Northern General Hospital.—Major G. Hall, C.M.G., from T.F. Res. to be Major with precedence from March 25th, 1915.

2nd Northern General Hospital.—Captain J. B. Hall is restored to the establishment.

3rd Northern General Hospital.—Captain (acting Major) J. B. F. Wil on relinquishes his acting rank on ceasing to be specially employed.

4th Northern General Hospital.—Captain F. E. Withers is restored to the establishment.

1st Southern General Hospital.—Captain F. D. Marsh, M.C., to be acting Major whilst specially employed, and to remain seconded.

2nd Southern General Hospital.—Major C. H. Walker and Captain J. M. Portescue-Brickdale, H. E. Harris, H. G. Kyle, C. F. Coombs, and W. Cotton are restored to the establishment.

4th Southern General Hospital.—Captain (acting Major) G. C. Sandford relinquishes his acting rank on ceasing to be specially employed.

5th Southern General Hospital.—Captain H. L. Driver is restored to the establishment.

APPOINTMENTS.

HAYCRAFT, Guy Fleetwood, M.R.C.S., L.R.C.P., Assistant Surgeon to the Wolverhampton and Midland Counties Eye Infirmary.

PIRKIE, Ivan M., M.C., M.B., B.S. Dunelm., Resident Medical Officer to the Newcastle-upon-Tyne Dispensary.

RIVETT, Louis Carnac, M.A., M.C., F.R.C.S., Assistant Surgeon to the Chelsea Hospital for Women.

STIRRE, E. P., M.R.C.S., L.R.C.P., Professor of Anatomy South African School of Mines and Technology.

TORRENS, James, M.B., B.S., M.R.C.P., Physician to the Chelsea Hospital for Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGE.

HAIG FERGUSON—JENKINS.—At Egbuckland Parish Church, Crowhill, Plymouth, on May 14th, by the Rev. R. K. Bond, M.C., C.F., Crownhill Barracks, and the Rev. A. F. Baker, B.A., Vicar of the Parish, Wm. Haig Ferguson, M.C., B.A., M.B., Captain R.A.M.C., elder son of Dr. and Mrs. Haig Ferguson, 7, Coates Crescent, Edinburgh, and grandson of the late Sir Patrick Heron Watson, to Gwendoline Mary, second daughter of the late W. S. Jenkins, J.P., of Seledy, South Wales, and Mrs. Jenkins, The Cottage, Fishguard.

DEATHS.

DENNING.—On May 14th, at 174, Blackfriars Road, John Vere Charles Denning, eldest son of the late Frederick Benson Denning, of Tullamore, Ireland, aged 69.

RAWSON.—On May 14th, at a nursing home, Chester, Dorothy Wynifred, wife of Noel R. Rawson, M.B., B.S., of Wynford, Pentre Broughton, Wrexham, and younger daughter of the late Alfred Sharpe of Malvern Link and Mrs. Alfred Sharpe, 19, Charlton Road, Keynsham, Somerset, R.I.P.

WHITE.—On the 13th inst., at his residence, Hilderstone, St. Peter's, Thanet, Edward Arthur White, M.D., aged 67, formerly of 1, Highbury Place, N., and the Abbey House, Malmesbury, Wilts., third son of the late Richard White, L.D.S., of Heathfield House, Norwich.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Social Evening, 9.15 p.m., Dr. George Steele-Perkins: How to Start and how to Succeed in General Practice. Section of *Odontology*: Monday, 7.30 p.m., Annual Meeting, A. H. Drew, D.Sc., and Mr. J. G. Turner, F.R.C.S.: Germs in the Gum, Periodontal Membrane, Bone, and Teeth in "Pyorrhoea" and other Dental Diseases. Section of *Medicine*: Tuesday, 5.30 p.m., Annual Meeting. Section of *Bulnecology and Climatology*: Wednesday, 5.30 p.m., Annual Meeting. Dr. Ferreyrolles: Immunity and Mineral Water Treatment.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	MAY.
28 Wed.	London: Assistant Asylums Medical Officers' Subcomm. mttee, 3 p.m.
30 Fri.	Buckinghamshire Division, Aylesbury, 2.15 p.m.; Lunch, 1.30 p.m.
	JUNE.
12 Thur.	South Wales and Monmouthshire Branch, Annual Meeting, Llanelli, 3.30 p.m.
19 Thur.	Central Division, Birmingham Branch, 18, Bennett's Hill, 3.30 p.m.
27 Fri.	Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C.2, at 4 p.m.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, MAY 31ST, 1919.

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GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION.

SUMMER SESSION, 1919.

Tuesday, May 27th, 1919.

Sir DONALD MACALISTER, K.C.B., President,
in the Chair.

THE one hundred and ninth session of the General Council of Medical Education and Registration was opened at the offices of the Council, 44, Hallam Street, W., on Tuesday afternoon, May 27th, 1919.

PRESIDENT'S ADDRESS.

Sir DONALD MACALISTER said:

Gentlemen,—When we last met Peace had already dawned on the world. The dawn is now brightening into day. Though the sky is not free from clouds, the light is come, and we rejoice in it. "Whatever troubles are before this nation, we face the future as victors." Our professional brethren are returning in thousands from the fields of war, and we join with the nation they have served so well in giving them welcome. We shall ever cherish with pride the memory of those who will not return, resolved that, so far as in us lies, their sacrifice shall be our inspiration. It is the duty and privilege of the medical profession to ensure, through its various organization, the easy resumption of civil activity by all its war-worn members. The "dearth of doctors" through the lean years of warfare has left many arrears to be overtaken, many gaps to be filled. There is work for all good men who seek it. The immediate problem is its proper distribution. The several War Committees, which rendered signal service to the country both in the "mobilization" and, till the War Office otherwise ruled, in the "demobilization" of medical officers, are now rendering a complementary service by aiding their resettlement in normal practice.

In such and kindred service the members of this Council have borne a full share during the war. The honourable distinctions which His Majesty has graciously conferred on Sir Norman Moore, Bt, on Sir Charles Tomes, and on Sir Jenner Verrall are a gratifying recognition both of their personal eminence and of their fruitful co-operation in our professional labours. The Council to which they belong is honoured in their promotion; it congratulates them, and itself, on this public acknowledgement of their devotion to the common weal.

New Members.

No less than four new members have joined our fellowship, and enter now upon their part in our common responsibilities. Untimely death removed last year our friend Mr. Meredith Townsend: by appointment of the

Society of Apothecaries of London his place is taken by Colonel B. B. Connolly, C.B., distinguished both in war and in peace. Disablement by ill health, which we deplore, has led to the retirement of Sir Frederick Taylor, our late Treasurer, and of Professor Symington, the eminent anatomist of Queen's University, Belfast. In their stead the University of London has sent us Dr. S. Russell Wells, physician and Senator, and the Belfast University Professor T. Sinclair, C.B., surgeon and Senator, both of whom we receive with the high expectations which their record warrants. Dr. Barrs, appointed by the University of Leeds as its first representative in 1904, has during fifteen years contributed amenity and good sense to our discussions, and given important aid to the Pharmacopocia Committee. We part with him regretfully, while we offer a hearty welcome to his successor, Professor T. Wardrop Griffith, C.M.G., physician, anatomist, and Lieutenant-Colonel.

The Registrars.

We welcome also our Registrar back from the army. The brevet rank conferred on Colonel King marks the importance of the exacting military duties he has fulfilled. The Council will doubtless desire to make appropriate acknowledgement of the admirable manner in which Mr. A. J. Cockington has carried out the Registrar's functions during his absence.

Before we assemble for the autumn session preparation for a general election of direct representatives, postponed by successive Orders in Council from 1916, will fall to be made by the general and branch registrars. In this connexion I intimate to the Council with satisfaction the appointment of Mr. Thomas H. Graham as Registrar of the Scottish Branch, in the room of the late Mr. James Robertson. Mr. Graham's wide knowledge of professional conditions, gained as secretary to the Medical Emergency Committee for Scotland during the war, will be of great advantage to him in the office he has now undertaken.

Deaths of Mr. Muir Mackenzie and Dr. Bateman.

The older members of the Council will learn with regret of the death of our former legal assessor, Mr. M. Muir Mackenzie. In the early days of the Council his wise guidance and advice in reference to its statutory functions were invaluable. His personal charm of manner and his sterling character won for him the affectionate regard of all. It is right that I should also mention the loss of Dr. Bateman, secretary of the Medical Defence Union, who in cases which came up for inquiry before this tribunal did much to assist it in reaching a just decision, and who was always ready to apply his extensive legal and medical knowledge to professional causes.

Finance.

The last year of the war has affected the Council's work and resources in ways foreseen and unforeseen.

In respect of finance, our surplus of revenue over expenditure at the end of 1918 was lower than the year

before. But it amounted to some £341, and was thus better than we expected. Economy during the Council's sessions has appreciably diminished its expenditure. The current year is likely to be our worst in respect of income from registration fees, and we may find ourselves at the end of it with a balance on the wrong side; but thereafter we may look for better times.

The Registers.

The *Medical Register*, whose issue has been greatly delayed by difficulties as to paper, and by the preoccupation of the printers with Government work, shows that 1,077 new names were added, and 946 were removed on account of death, in 1918. Of the new names, 148 were entered in the *Colonial List* and 16 in the *Foreign List*. Taking account also of restorations on the one hand and erasures on the other, the net increase in the number of registered practitioners for the year is 107.

To the *Dentists' Register* 147 names have been added and 104 removed, giving a net increase for the year 1918 of only 43. This is an improvement on the preceding year, when only 12 names were added; but it is still far from meeting the need of the country for qualified dental practitioners.

Since November, the registrations on the *Colonial List* have greatly multiplied. Many Australian and Canadian graduates, while awaiting their return overseas, have thus sought legal qualification for practice in this country, chiefly (so we understand) with a view to improving their experience and giving helpful service in the hospitals.

The *Students' Registers* for 1918 show that, while 2,253 began medical study during the year, only 161 entered upon the dental curriculum. The causes of this shortage of dental students have, as you know, been the object of careful inquiry by a Departmental Committee, to which I will refer later.

War Census of Students.

At the instance of the Ministry of National Service, I again requested the authorities of the medical schools of the United Kingdom to furnish me with returns showing the number of students actually in attendance on courses of professional instruction in January, 1919. This final war census showed that the total number, which in October, 1917, was 7,048, and in May, 1918, was 7,630, had risen in January, 1919, to 9,490. Between May, 1918, and January, 1919, the first-year students had increased from 2,043 to 2,907, as compared with 1,480 registered in 1913. The junior students had thus practically doubled since the year preceding the war. But the students in the final year of their curriculum numbered only 936 men and 222 women, or barely enough to supply to the *Register* the normal increment of newly qualified practitioners during the current year.

First-year students who were on service have returned to the schools in almost overwhelming numbers for the summer session. The accumulated freshmen of a succession of years, whose first year's course was broken by the summons to military service, together with a number of educated men and officers entering for the first time on the medical curriculum with subsidies from the Government, have flooded the schools, and taxed severely their accommodation and their teaching staff. With the object of giving all practicable facilities to men who have fought for their country, equipment has been improvised and temporary instructors provided; and I am informed that at some centres it has even been necessary to refuse admission to normal students proceeding in the ordinary course from secondary schools to schools of medicine. Some of the difficulties felt this summer in dealing with numbers so far above the average will no doubt be lightened in the following years, as the professional schools are able to readjust their arrangements; but they cannot all be surmounted without heavy expenditure, and it may be that the State will have to lend substantial assistance to enable these institutions to meet the needs of ex-service students. In any case it seems certain that within five years' time the depletion in the ranks of the profession caused by the war will be much more than made good. No useful purpose can therefore be served by continuing to permit immature boys and girls to leave the secondary schools for medical study before their general education has been fully completed; and the Council will accordingly do well to press for the requirement from all entrants on

the curriculum of a preliminary test not inferior in standard to that required for entrance on a course in arts or science. If the overloaded curriculum is to be lightened to make room for new branches, as reformers are constantly urging, the instruction in the present essential subjects must be condensed and abbreviated. This requires that the student shall bring to them a mind already trained and furnished, so that from the outset he can be trusted to observe, to reflect, and to read intelligently for himself. The Entrance Board of the Scottish Universities has already decided to assimilate the conditions for admission to the Faculty of Medicine to those for admission to the Faculties of Arts or Science. We all desire that, as there is no lack in the number of aspirants to a professional qualification, so there shall be no question of their intellectual fitness to embark on professional study. If we could safely assume that medical students were all well grounded and well trained at school, and had all in some adequate measure learned how to learn, it would be easier for medical teachers to make their scientific instruction "intensive," and to broaden the professional courses so as to cover the special aspects and developments of medicine that press for inclusion in the curriculum. We cannot say that the assumption is yet justified; but the policy of the Council is, and ought to be, to hasten the attainment of the educational standard it implies, and the time is ripe for further advance in this direction.

Preventive Medicine.

The inquiry set on foot by the Education Committee, at your request, relating to the instruction of students in the preventive side of their professional work, has made some progress during the recess, and an interim communication on the subject will doubtless be furnished to you. The information derived from a comprehensive inspection and visitation of the qualifying examinations would, in my opinion, supplement usefully the data supplied by the inquiry. It will be for the Education and Examination Committees jointly to advise the Council on this matter. The Standing Orders prescribe the method and the scope of the action to be taken whenever the Council decides that action is opportune. The general stock-taking which the war made impracticable might properly be undertaken forthwith, if only as a needful preparation for the "reconstruction" of peace.

The Pharmacopoeia.

The modifications in the *Pharmacopoeia*, made in 1917 and 1918 to meet war conditions, were early in the year announced by the Government authorities concerned to be no longer necessary, the supplies of sugar, glycerin, and fats applicable to pharmaceutical uses being once more sufficient. By direction of the Executive Committee, after consultation with the *Pharmacopoeia* Committee, the proper legal steps were accordingly taken to withdraw and cancel the temporary schedules of alterations; and the text of the *British Pharmacopoeia* 1914 was thus, after due notice, reinstated on April 30th, 1919. It will probably be necessary to print a new issue of the volume, for which there is a continuous demand, both in this country and abroad.

Ministries of Health Bill.

Several measures of importance to the profession of medicine have been before Parliament, and some of them have made unusually rapid progress.

The Ministries of Health Bill, which occupied your attention last session, has undergone a transformation. The clauses relating to Scotland have been embodied in a separate bill, providing for the constitution of a Scottish Board of Health under the presidency of the Secretary for Scotland, with a new Parliamentary Under-Secretary as vice president. The omission of Ireland from the scope of the original bill, on which you commented at an earlier stage, has been supplied by the insertion of clauses establishing a corresponding Board of Health for that country. These and other points, to which at your request I called the Lord President's attention, have received careful consideration from the Government; and the amendments introduced at its instance show that an endeavour has been made to give effect to your suggestions. The bills, as you are aware, provide little more than the machinery for concentrating in a single department, for each division of the kingdom, the administrative activities concerned with public health that are now distributed over numerous

departments. The conditions of transfer are in many instances undefined; they have yet to be determined by Orders in Council, the drafts of which will be submitted for public discussion. Much will depend on their terms, and it may be expedient that the Council should empower the Executive Committee to consider such draft Orders as they are issued, and, if necessary, to make representations thereon in the light of any general instructions given by the Council. But much more will depend on the motive power actuating the departmental machinery, and the spirit in which it is worked by our administrators. The provision of consultative or advisory councils, free to offer their counsel to the responsible Minister on matters of which they have special knowledge, will, it is hoped, afford to the medical profession full scope for exercising a helpful influence in the solution of the manifold problems in State medicine that confront the new departments. The Executive Committee, which had to take certain steps on your behalf at its February meeting, will report to you on its action in this connexion.

Bills for the Registration of Nurses.

Two bills, providing in different ways for the registration of nurses, are before Parliament. Though they are at different stages in their progress, I understand that an attempt will be made to consolidate or otherwise to reconcile them. Their proposals fulfil some of the conditions formulated in previous resolutions of the Council on the subject. Both bills, however, omit a provision which you deemed essential—namely, that the rules framed by the registration authority for regulating and restricting the professional practice of nurses, should be forwarded for consideration by this Council before they are finally approved by the Privy Council. This provision was, by your desire, incorporated in the several Midwives Acts. I have accordingly reminded the Lord President of your resolution upon it, and am assured that it will not be overlooked.

The Dogs' Bill.

Another bill, which, if it passed into law, would have the effect of arresting the progress of exact knowledge bearing on the health of animals and man, has made some progress in Parliament. In the interest of preventive and curative medicine strong protests have been made against the measure by the leading medical authorities, whose members are well aware of the benefits humanity has derived from the scientific investigation of animal function. By these protests, with which we as professional men must needs sympathize, and which have been ably enforced by medical members of the House of Commons, Parliament has been made cognisant of the harmful nature of the proposed legislation; and Government has been moved to propose effective safeguards. I am not without hope that reasonable counsels will in the end prevail over uninformed prejudice.

Report of the Committee on Dental Practice by Unqualified Persons.

The report of the Committee appointed by the Lord President, at the request of this Council, to inquire into the extent and gravity of the evils of dental practice by persons not qualified under the Dentists Act, was issued in February, and has been circulated to members. The Dental Education and Examination Committee have had the report under consideration, and will have a communication upon it to make to you.

The Departmental Committee agrees with the Council in several significant conclusions. It is not needful that I should mention to-day more than the following:

- (1) That very grave evils are associated with the unqualified practice of dentistry;
- (2) That the supply of qualified dentists is at present insufficient to meet all public requirements;
- (3) That the main causes of this shortage are the unsatisfactory state of the law in regard to unqualified practice, and the duration and cost of training for a dental qualification;
- (4) That to meet the evils disclosed, the legal prohibition of dental practice by unregistered persons is essential;
- (5) That, under proscribed conditions, unregistered persons who have reputably practised dentistry for five years should, in the event of prohibition being

enforced, be admitted to registration as "dentists" or "dental practitioners" by a Special (*ad hoc*) Committee including members of this Council.

The Committee proposes that a statutory Dental Board shall be constituted under this Council, for the government of the dental profession thus enlarged. The Board would have the charge of the new *Register*, and exercise disciplinary control over all registered persons, subject in certain cases to appeal to the whole Council. The dental members of the Board would be made members of the Council. The Board would, moreover, administer a new fund, derived from the annual licence fees which it is proposed that registered dental practitioners should pay, devoting the surplus, after meeting expenses, to such purposes as dental scholarships, aid to dental schools, and dental research. Weighty suggestions are made by the Committee with regard to the minimum curriculum for dental students, and the provision of public dental services. These will doubtless receive, as they deserve, the fullest consideration by the Council and by the Government. The essential recommendations, on which for the moment attention will naturally be concentrated, are those dealing with (1) the prohibition of unlicensed practice in the future, and (2) the registration for the purpose of regulation and control of unregistered practitioners who have, without hindrance of the law as it stands, acquired a reasonable measure of experience by actual practice in the past.

The Departmental Committee is justified in its conclusion that in any fresh legislation these two proposals must be held to stand or fall together. I judge from the discussions that have taken place here that this is also the conviction of the Council, based not only on its experience in administering the Dentists Act for over forty years, but also on its study of the development of dental legislation in the overseas dominions and in foreign countries.

The final conclusion of the Departmental Committee urges, in terms even stronger than those used by the Council, the imperative necessity for legislative reform. "The State cannot afford to allow the health of the workers of the nation to be continuously undermined by dental neglect." "The present anomalous position . . . casting undeserved odium and dishonour on a scientific profession, is intolerable, and should be dealt with immediately."

The Council could not desire a fuller vindication of the representations it made to the Lord President. The responsibility for the next step rests with the Government and with Parliament.

Disciplinary Cases.

Some of the inquiries to be held this session into charges made against medical practitioners present novel features, on which you will probably desire to take counsel with your legal advisers. At the instance of the Penal Cases Committee I have placed the facts before them for preliminary consideration. In one painful case of trial for murder we are authoritatively advised that the special verdict of the jury, "guilty but insane," does not in law imply that the practitioner charged has been "convicted in England . . . of any felony." The Council is therefore not free to take up a charge against this practitioner, or to direct the Registrar to erase his name from the *Register*, as if it were a case of conviction in terms of Section 29 of the Medical Act, 1858.

Duration of Session.

An attempt has been made, in pursuance of suggestions made by members, to improve the acoustics of this chamber by rearranging the seats. The experience of the session, which will probably not be a long one, will guide us in deciding whether further changes are necessary.

VOTE OF THANKS.

At the conclusion of the President's address, Sir CHARLES TOMES moved and Dr. NORMAN WALKER seconded a vote of thanks, which was carried.

MINISTRY OF HEALTH.

THE PRESIDENT, in presenting a report of the Executive Committee on the Ministry of Health Bill, recalled that at the November session two resolutions were passed, one cordially supporting the proposal to establish a Ministry of Health, and the other urging the extension of the bill to the whole of the United Kingdom. These resolutions had

been laid before the Lord President. The Irish Branch Council had communicated with the Executive Committee, and the latter had passed a resolution observing with regret that the bill did not extend to the whole of the United Kingdom, and pressing upon the Government the importance of introducing legislation for Ireland corresponding to that proposed for England and Wales and for Scotland. The Committee had also, at the instance of the Scottish Branch Council, informed the Lord President that in its opinion, in view of the very varied medical functions devolving on the Board of Health in Scotland, including measures for the prevention and cure of diseases, the treatment of physical and mental defects, the collection and preparation of statistics and information, and the training of persons engaged in health services, not less than one-third of the members of the Scottish Board should be persons registered under the Medical Acts. In the third place, the Committee welcomed the introduction into the bill of a general clause enabling all the functions relating to public health now exercised by various Government departments to be transferred one by one, as the case might be, by Order in Council, to the Ministry of Health. It considered, however, that the General Medical Council should have an opportunity of seeing the various draft Orders before they were issued, with a view to making suggestions as to the contemplated transfer. All these resolutions were communicated to the Lord President and formally acknowledged by him, and the subsequent progress of the bill to its present final stage at least showed that considerable attention had been devoted to the suggestions made, even if they had not been accepted in their entirety.

Sir JOHN MOORE, in seconding, said that the Irish Branch Council, of which he was chairman, had given very earnest consideration to this matter, although its *locus standi* had been called in question in some quarters. He was of opinion that the representations had met with considerable success.

The PRESIDENT said that there could be no question as to *locus standi*. The General Council was definitely requested to make any observations to the Lord President upon impending legislation, and this included, of course, observations made by Branch Councils submitted through the Executive Committee of the general body.

The report was approved.

FINANCE.

Sir CHARLES TOMES, in moving the report of the Finance Committee, stated that the income of the General and Branch Councils for the year ending December 31st, 1918, was £7,473 and the expenditure £7,132, leaving a surplus of £341. Under war conditions a large surplus could not be expected, and it was likely to be smaller this year, even if there were any, owing to the probability of a bad year for registrations and to the expensive business of a general election of direct representatives. He mentioned that the whole of the General Council's mortgage to the English Branch had now been paid off.

The report was adopted, together with a recommendation that Sir William Church, Sir Donald MacAlister, and Sir Charles Tomes be appointed trustees for the unexpended moneys which the Council had been able to invest.

ELECTION OF COMMITTEES.

The following committees were elected:

Executive Committee: Sir Norman Moore, Dr. Elliot Smith, Sir Charles Tomes, Dr. Langley Browne, Mr. Hodsdon, Dr. Norman Walker, Sir John Moore, Sir Arthur Chance.

Penal Cases Committee: Sir Charles Tomes, Sir Francis Champneys, Dr. Norman Walker, Sir Bertram Windle.

Business Committee: Dr. Norman Walker (Chairman), the President, Dr. Macdonald, Dr. Magennis, Sir Francis Champneys.

Pharmacopoeia Committee: The President (Chairman), Sir Norman Moore, Dr. Hopkins, Dr. Caton, Dr. Cash, Dr. Norman Walker, Sir John Moore, Dr. Kidd, Dr. Russell Wells.

Finance Committee: Sir Charles Tomes (Chairman), the President, Sir Norman Moore, Mr. Hodsdon, Sir Arthur Chance.

Dental Committee: The President (Chairman), Mr. Waring, Sir Charles Tomes, Mr. Hodsdon, Sir Arthur Chance.

Dental Education and Examination Committee: Sir Charles Tomes (Chairman), the President, Mr. Waring, Mr. Hodsdon, Dr. Knox, Sir Arthur Chance, Sir Arthur Newsholme (for special business), Dr. Coey Bigger.

Students' Registration Committee: Sir Norman Moore (Chairman), the President, Dr. Langley Browne, Dr. Mackay, Dr. Littlejohn, Sir Bertram Windle, Dr. Kidd.

British Medical Association.

CURRENT NOTES.

Medical Department of the Royal Navy.

THE Naval and Military Committee of the Association has appointed a subcommittee to consider the question of the improvement of the conditions of service of officers in the Medical Department of the Royal Navy, and to bring up to date the Memorandum which was published by the Association in 1914 on the shortage of officers in that service. Naval medical officers who have views on the reform of the service are requested to communicate with the Medical Secretary.

It is known that the Admiralty have under consideration at the present time some improvement in the rate of remuneration paid to officers in the Medical Department, and the Association has asked to be informed of any decisions that have been made in that respect.

Income Limit for Insured Persons.

Following the letter sent by the Council of the British Medical Association (SUPPLEMENT, April 26th, p. 61), Major Astor, Chairman of the Joint Committee, National Insurance Commission, has intimated his willingness to receive a deputation from the Council on Monday, June 2nd, on the subject of the proposed raising of the income limit for insured persons.

Meetings of Branches and Divisions.

FIFE BRANCH.

THE seventeenth annual meeting of the Fife Branch was held at Kirkcaldy on May 15th. The following officers were elected for the ensuing year:

President: Dr. Dickson (Lochgelly). **Vice-President:** Dr. Macnicol (Leven). **Honorary Secretary:** Dr. Anderson (Methil). **Representative in Representative Body:** Dr. Sneddon (Cupar).

The annual report of the Central Council was considered, and the Representative instructed with reference to matters to be discussed at the Annual Representative Meeting. The scale of fees under the Midwives Act as adopted by the Scottish Committee was considered, the Branch being of the opinion that the Scottish scale was preferable to the English one.

A discussion on the scope of the Scottish Board of Health was opened by Dr. NORMAN WALKER (Edinburgh), who pointed out the advantages to be gained by having a Ministry of Health Committee for Scotland constituted upon the lines of the present Committee, who would be able to confer with the Scottish Board of Health administration. The discussion was continued by members of the Branch; and the PRESIDENT (Dr. Dickson) took the opportunity of extending to Dr. Walker the thanks of the medical profession in Fife for the work which had been carried on by the Scottish Medical Service Emergency Committee during the past four years.

GLASGOW AND WEST OF SCOTLAND BRANCH: GLASGOW EASTERN DIVISION.

A MEETING of the Glasgow Eastern Division was held on May 22nd. Dr. JOHN GLAISTER, who took the chair, introduced as the subject for discussion Document M. 21, dealing with the National Insurance Defence Trust, and expressed the hope that its consideration might lead to some decision.

Dr. J. R. DREVER, in opening the discussion, prophesied that before the year was out the hall would not hold all who wished to attend a meeting of the Division. He dealt first with the opposition to M. 21, and the arguments in favour of a medical trade union. The analogy of the miners' federation could not be maintained; the miners had a voting power and a strike weapon which the medical profession could never possess. Moreover, the Trades Disputes Act gave no power to interfere with individual freedom. He asked whether it was worth while running risks and breaking up organizations at the present time. The first thing to do was to clear up all the dubieties of the Insurance Act. The Government had two weapons against the doctors: one was to suspend medical benefit altogether, which meant handing the doctors over again to the societies, while the insured people would have to look out for themselves; the other was the setting up of a whole time medical service, for which the community was not yet prepared, nor was the medical profession as a whole in favour of it. Nevertheless the Government was prepared to use this weapon, and there were many demobilized medical men willing to adopt it. Dr. Drever urged the formulation of reasonable demands through the democratic organization of the British Medical Association, and the advisability of supporting the Defence Trust.

Dr. J. DUNLOP, who spoke next, concurred in Dr. Drever's desire to avoid personalities. He argued that the times were changed and new methods were needed. Whenever a great public service became a national need it passed into the hands of the Government, either local or central. One by one private enterprises were passing into public hands; the other side having changed, the medical profession should change too. It

must be a great shock to the British Medical Association to have to change its ideas, but change them it must. Dangers of two kinds had to be faced—finance and control—and to face these the medical profession must organize. Dr. Dunlop argued from this that a medical trade union would meet the needs of the profession, mainly because of its two special powers—it could penalize the individual without being itself penalized and it could carry on collective bargaining. Criticizing the National Insurance Defence Trust, he asserted that if anyone was awarded damages against this Fund and the Fund could not meet the liability, the Association funds would be taken. What, he asked, if the Government impounded all these funds? It could not do that if they were invested in a trade union. He urged those present to consider well before accepting M.21.

The CHAIRMAN then declared the meeting open for general discussion. Drs. BENNETT, GRANT-MORRIS, COLVIN, and RUSSELL took part, and Drs. DREYER and DUNLOP replied. After deliberation in private it was decided to postpone further discussion for fourteen days.

Association Notices.

SUGGESTED FORMATION OF A WILLESDEN DIVISION.

NOTICE is hereby given to all concerned that at a meeting of members and non-members of the Association held on May 20th, 1919, to which all practitioners resident in Willesden Urban District had been invited, a resolution was unanimously passed asking that a Willesden Division be constituted of area co-terminous with that urban district.

The matter will be determined in due course by or on behalf of the Council. Any member affected by the proposed change and objecting thereto is requested to notify the fact, and his or her reason therefor, to the Medical Secretary, 429, Strand, W.C.2, not later than June 30th, 1919.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST YORK AND NORTH LINCOLN BRANCH: EAST YORKSHIRE DIVISION.—Dr. H. L. Evans, Honorary Secretary (101, Prince's Avenue, Hull), gives notice that the annual meeting of the Division will be held in the Board Room of the Hull Royal Infirmary, on Friday, June 20th, at 8.15 p.m. Business: Annual report, financial statement, election of officers, etc.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary (Chillingworth House, Tunbridge Wells), gives notice that the sixth annual meeting of the Branch will be held on Wednesday, June 18th, in the Rochester, Chatham, and Gillingham Division. The President-elect, Mr. Godfrey Taunton (Chatham), kindly invites members to luncheon at the Mayor's Parlour, Town Hall, Chatham, at 1 p.m. (There will be standing room for many cars at the side of the Town Hall.) At 2 o'clock the members will be conducted over the Dockyard, by invitation of Rear-Admiral Sir W. Goodenough, K.C.B. Tea will be provided at the Town Hall by the inviting Division, at 4 p.m. At 4.30 the annual business meeting will be held in the Council Chamber, Town Hall, Chatham: Report of the election of officers, annual report and financial statement, appointment of auditors, other business. The President, Mr. Godfrey Taunton, will read a paper on "Chronic Intestinal Stasis in Children." The annual dinner will be held at the Bull Hotel, Rochester, at 6.30 p.m. (Cost, 7s. 6d. each.) Wine will be provided by the local members.

LEINSTER BRANCH.—Mr. W. Doolin, F.R.C.S.I. (50, Fitzwilliam Square, Dublin), gives notice that the annual meeting of the Leinster Branch will be held in the Irish Offices of the Association, 16, South Frederick Street, Dublin, on Friday, June 20th, at 5 p.m., to be followed by meetings of the Dublin and East Leinster Divisions.

METROPOLITAN COUNTIES BRANCH.—Mr. N. Bishop Harman and Captain Wilfred Kingdon, R.A.M.C. (Honorary Secretaries), give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C.2, on Friday, June 27th, at 4 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of Council and of representatives of the Branch on the Central Council. (3) Alteration of certain rule. (4) President's Address: Mr. W. McAdam Eccles, "Reconstruction in Medical Education."

METROPOLITAN COUNTIES BRANCH: CAMBERWELL DIVISION.—Dr. F. M. W. South, Honorary Secretary (62, Queen's Road, Peckham, S.E.15), gives notice that the annual general meeting of the Camberwell Division will be held at the Camberwell Dispensary, Camberwell Green, on Thursday, June 5th, at 3.30 p.m.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.—Dr. L. Freeman Marks, Honorary Secretary (Brynheulog, Mumbles, Swansea) gives notice that the annual meeting of the Branch will be held at the Town Hall, Llanelly, on Thursday, June 12th, at 5.30 p.m.

SOUTH-WESTERN BRANCH.—The eightieth annual meeting of the Branch will be held on Wednesday, June 11th, at the Royal Devon and Exeter Hospital, at 3 p.m., when the chair will be taken by the President, Mr. J. M. Ackland. The report of the

Branch Council and the annual financial statement will be presented and the officers of the Branch will be elected for 1919-20. An address, to which non-members of the Association are invited, will be given by Dr. Alfred Cox, O.B.E. (Medical Secretary of the Association), on the Ministry of Health Bill and the future of the medical profession. Luncheon, by kind invitation of the President, will take place from 1 p.m. to 2.30 p.m. at No. 1, Barnfield Crescent, and tea at the same address after the meeting. The annual dinner of the Branch will be held at the Rougemont Hotel at 7.30 o'clock. Tickets 10s. 6d. each, exclusive of wine. At 11.30 a.m. on the same date a meeting of all members of the medical profession practising within the administrative county of Devon will be held at the Devon and Exeter Hospital, to consider the formation of a body which could be put forward as representative of the profession in the administrative county of Devon, and be available for consultation by any administrative body set up under the Ministry of Health Bill; and to discuss the question of raising fees to meet the altered conditions created by the war.

SURREY BRANCH.—Dr. A. E. Evans, Honorary Secretary (Eastcroft, Gloucester Road, Kingston Hill), gives notice that the sixth annual meeting of the Surrey Branch will be held, by invitation of the Croydon Division, on Wednesday, June 18th, at the Croydon Town Hall. The members will meet at luncheon at the Greyhound Hotel, at 1.15. There will be an excursion in the afternoon to Waringham Mental Hospital, when the members will be the guests of Dr. E. S. Pasmore. The annual dinner will be held at the Greyhound Hotel at 6.30 p.m. Charge, 7s. 6d. Wines will be provided by the Croydon Division. In order to facilitate arrangements, members are asked to inform Dr. Evans before June 11th of their intention to be present, stating whether at the lunch, excursion, or dinner, or all three.

LONDON INSURANCE COMMITTEE.

AT the meeting of the London Insurance Committee on May 22nd the Chairman (Mr. P. ROCKLIFF) announced that conversations had been taking place between the Sanatorium Benefit Subcommittee and the Public Health Committee of the London County Council with a view to setting up a comprehensive scheme for the institutional treatment of tuberculosis. Hitherto there have been various differences between the two bodies, the differences ranging over the standard of accommodation to be adopted, the minimum of beds necessary for insured persons, and the provision of expert medical advice. The Chairman said he felt justified in believing that they were now on the threshold of a satisfactory scheme which should secure adequate treatment for both insured and uninsured persons in London. On that understanding the full Committee postponed the consideration of certain motions on the subject which were on the agenda.

The number of prescriptions given on behalf of insured persons in the County of London last year was 4,377,688, and the total cost of drugs and appliances was £127,060 16s., or an average cost per prescription of 6.97d.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:—Surgeon Commander J. D. Hughes, C.B., has been placed on the retired list with rank of Surgeon Captain. Surgeon Commanders: W. P. Dyer to the *Wallington*, for Inmingham Naval Base; J. McDonald to the *Superb*; W. K. Hopkins to the *Valiant*; M. J. Laifan to the *Pembroke*, for Milton Mount Sick Quarters; G. E. Duncan to R.N. Hospital, Bermuda; P. T. Nicholls to War College, Devonport; Surgeon Lieutenant Commander W. M. Horsfall is granted rank of Surgeon Commander on Emergency List; Surgeon Lieutenant Commanders A. C. Ruskack to the *Carysfort*; T. Cock to the *Ambrose*; S. W. Grimwade to Chatham Hospital; D. H. C. Given to the *Apollo*; F. G. H. R. Black to the *Caroline*; H. F. Briggs to R.N. Hospital, Invergordon; W. H. Hastings to the *Dublin*. Surgeon Lieutenants promoted to rank of Surgeon Lieutenant Commander: E. A. Rankine, O. H. Richardson, H. White, L. A. Moncrieff, A. C. Paterson, H. E. Scargill, T. Cook. Surgeon Lieutenants: F. E. Fitzmaurice to the *Southampton*, T. Gwynne-Jones to the *Walton Belle*, H. L. P. Peregrine to the *Crescent*, A. J. Tozer to the *Endeavour*, G. H. Haynes to the *Britomart*. Surgeon Lieutenants (temporary) O. Parkes to the *President*, additional, for duty with Naval War Trophies Committee; H. O. Martin to the *Boudicca*; N. A. H. Barlow to the *Ambitions*, for Lerwick Naval Bases; E. C. Morrison to the *Pembroke*, additional, for Osea Naval Base; E. K. Macdonald, W. M. Anthony, G. K. Hull to Haslar Hospital; J. C. Blake to the *For*; C. L. Wilson to the *Tonbridge*; T. N. D'Arcy to the *Theseus II*; A. O. Ross to R.N. Hospital and Dépôt, Portland; D. J. R. Bell to the *Warspite*; A. I. Spencer Payne to the *Apollo*. To be Surgeon Lieutenant: S. H. Waddy.

ROYAL NAVAL VOLUNTEER RESERVE.

To be Surgeon Lieutenant (temporary) A. S. Bissett.

ARMY MEDICAL SERVICE.

Colonel R. H. Penton, D.S.O., retires on retired pay. Temporary Colonel W. Pasteur, C.M.G., (Lieutenant-Colonel R.A.M.C., T.F.) relinquishes his temporary commission on reposting.

ROYAL ARMY MEDICAL CORPS.

Temporary Majors C. A. Lanneth (Captain R.A.M.C., T.F.) and T. G. Parsons (Captain R.A.M.C., T.F.) relinquish their temporary commissions on reposting.

The notifications regarding Lieut.-Colonel F. E. Carroll, D.S.O., and temporary Lieutenant L. L. McInnes in the *London Gazette* of April 26th, 1917, and January 14th, 1919, respectively, are cancelled.

Temporary Captains relinquish the acting rank of Major on reposting: S. S. Dunn, E. A. C. Beard, W. B. Davy, P. W. Hampton, S. W. Williams.

Captain (acting Major) G. G. Collet to draw the pay and allowances of his acting rank from November 20th, 1918, to March 25th, 1919, when he relinquishes the acting rank of Major.

To be acting Majors: Captains S. S. Dykes (whilst commanding troops on a hospital ship from September 11th, 1918, to April 24th, 1919); A. E. Richmond. Temporary Captain P. W. Dove. Whilst specially employed: Captain H. F. Joynt. Temporary Captains H. H. O'Heffernan, W. F. Dunlop, W. G. Waugh, C. Clyne, M.C., R. Nichol, C. G. Skinner, A. G. Macdonald.

Temporary Lieutenant A. V. McMaster to be temporary Captain.

To be Captains, but not to reckon for pay and allowances prior to May 1st, 1919, with precedence as stated:—Captains from Special Reserve: S. J. A. H. Walshe, D.S.O., February 6th, 1918, next below R. J. Chansley; W. Walker, M.C., February 6th, 1918, next below R. J. Chansley; (acting Major) G. A. Bridge, March 19th, 1919, next below W. E. Tyndall, and to retain his acting rank; F. S. Gillespie, March 23rd, 1918, next below H. G. Trayer; (acting Major) J. A. L. Wilson, March 30th, 1918, next below W. W. McNaught, and to retain his acting rank; B. C. O. Sheridan, M.C., May 11th, 1918, next below K. A. M. Tomory. Temporary Captains: D. McKelvey, M.C., May 1st, 1918, next below T. F. Kennedy; A. W. P. Todd, M.C., February 25th, 1919, next below J. E. Rusby.

Temporary Captains to be Lieutenants and to be temporary Captains, but not to reckon for pay or allowances prior to May 1st, 1919, with precedence as stated: (acting Major) H. C. Watson, M.C., December 28th, 1915, next below G. T. Baker, and to retain his acting rank; A. H. Clarke, M.C., September 1st, 1916, next below B. J. Daint; T. B. H. Tabuteau, November 1st, 1916, next below A. R. Barlas.

The following officers relinquish their commissions: Lieut.-Colonel D. R. O'Sullivan-Beare, and retains the rank of Lieut.-Colonel. Temporary honorary Lieut.-Colonel M. H. Gordon, C.M.G., and retains the honorary rank of Lieut.-Colonel. Temporary Major H. W. Bruce (April 2nd), and is granted the rank of Lieut.-Colonel (substituted for notification in the *London Gazette*, May 6th, 1919). Temporary Major J. J. Abraham, D.S.O., and is granted the honorary rank of Lieut.-Colonel. Temporary Majors a d retain the rank of Major: R. A. Beaver, on ceasing to serve with the Beaufort War Hospital, W. L. Braddon, H. Dickie, W. A. Chapple, R. J. D. A. Irvine. Temporary Captain K. W. Mackenzie, D.S.O., M.C., and is granted the rank of Lieut.-Colonel. Temporary Captains and are granted the rank of Major: M. W. B. Oliver, H. T. Newling, I. Anderson, D.S.O., W. T. Hedley, J. D. Hart, M.C., T. Russell, P. H. MacDonald, H. A. Lake, J. Maxwell, R. E. F. Pearce, G. S. Hett, J. A. C. Roy, J. M. Pinkerton, M.C., J. W. Bennett (March 21st, 1919—substituted for notification in the *London Gazette*, April 28th, 1919), A. Massey, A. G. Cook, M.C., J. P. Musson. Temporary Captains and retain the rank of Captain: W. S. Nason, S. A. Riddett, M.C., F. S. Poole, C. H. Nash, I. Pollard, H. A. Beaver (on account of ill health contracted on active service), A. Riley, R. T. A. Patchett, A. A. Rutherford, C. N. Binney, G. C. M. Davies, M.C., W. E. Gublin, M.C., R. Hannab, M.C., J. C. Glen, J. M. Gillespie, H. W. Fisher, A. Goodwin, C. L. Driscoll, B. W. H. Fergus, E. W. Adcock, W. N. Gilmour, M.C., J. I. Grieg, M. K. Acheson, M.C., G. F. Holt, S. R. Lane, H. J. Hickin, E. H. Altonnyan, E. R. G. Greville, T. A. Hindmarsh, M. G. Hannay, R. M. Hill, D.S.O., W. P. Bonner, A. Galletly, M.C., A. J. Ballantyne, W. H. Hooton, E. M. Fanning, D. L. Morrison, J. G. Macqueen, A. D. Low, C. C. Kennedy, R. S. Miller, B. H. Moore, J. D. Macfie, W. H. McKinstry, T. H. Martin, G. A. Maling, V.C., H. N. M. Puckle, J. N. Meade, F. J. Rawlinson, J. F. W. Leech, W. S. Langworthy, W. D. Newcomb, G. T. Mowat, A. W. Mather, J. F. Penzon, J. C. A. Ridgway, T. E. Lawson, D. Matthew, M.C., P. Henderson, W. MacEwen, G. A. Hoffmann, G. R. Harcourt, E. W. Martin, G. Rainford, I. H. Lipetz, W. C. MacFetridge, A. C. Jenson, E. Kennington, D. Macdonald, J. Hunter, W. Halliwell, R. W. Macpherson, P. Howe, W. G. Parker, H. H. Prentiss, J. P. McGowan, G. W. Davies, H. B. Moyle, K. Playfair, H. Matthews, W. L. Paterson, J. E. Ratcliffe, J. C. Ogilvie, M.C., G. J. Langley, T. M. O'Donnell, D. McNeill, C. J. R. Aubrey, R. T. Dobson, F. W. Joyes, H. G. Pesel, M.C., J. D. Jones, L. C. Rorke, G. W. Doran, J. Keyns, J. Monroe, R. W. D. Hewson, P. R. Eskell, J. G. Priestly, L. Pern, H. F. Warwick, M.C., A. Roemmelte, W. W. Galbraith, G. A. Jelly, J. B. Matthews, A. Robin, D. E. Morley, B. H. Wedd, W. R. Etches, J. M. Morgan, M.C., A. C. Campbell, E. L. Clay, K. B. Dickson, A. S. Campbell, E. G. Evans, T. R. Coudrey, E. C. MacWilliam, J. B. Dalton, H. G. Rice (on account of ill health contracted on active service). Temporary honorary Captain R. M. Richardson, and retains the honorary rank of Major. Temporary Lieutenants and retain the rank of Lieutenant: J. G. Londen, F. L. N. Fridmore, G. H. Dunn, A. H. Davidson.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to the unemployed list: Captains J. E. Cable, C. K. Attlee, D. A. Macpherson, Lieutenant W. C. A. Ovey.

H. A. Treadgold is granted a temporary commission as Captain, and to be temporary Major without pay and allowances of that rank, September 2nd, 1918, seniority April 1st, 1918 (substituted for notification in the *London Gazette*, September 24th, 1918).

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel S. G. Darling is restored to the establishment on ceasing to hold a temporary commission in the A.M.S.

Major (Brevet Lieut.-Colonel acting Lieut.-Colonel) R. M. H. Rogers relinquishes his acting rank on ceasing to be specially employed, March 4th, 1919 (substituted for notification in the *London Gazette*, April 28th, 1919).

Major A. J. Hogarth is restored to the establishment.

Captain H. M. Fort to be acting Major whilst specially employed.

Officers relinquish their acting rank on ceasing to be specially employed: Major (acting Lieut.-Colonel) W. E. Miles. Captains (acting Majors) A. C. Hepburn, B. Hughes, D.S.O., C. P. Brentnall, M.C., J. W. Anderson, J. G. Cooke, C. G. K. Sharp, E. N. Buller.

1st Eastern General Hospital.—Captains D. Mallan, W. B. Marshall, and H. S. C. Starkey are restored to the establishment.

2nd Eastern General Hospital.—Captain P. A. S. Hutchinson is restored to the establishment.

1st London Sanitary Company.—Captain E. W. Gregory is restored to the establishment.

3rd London General Hospital.—Major Sir John R. Bradford, K.C.M.G., (C.B., F.R.S., and Captain C. A. Pannett are restored to the establishment on ceasing to hold temporary commissions in the A.M.S. and R.A.M.C. respectively.

Sanitary Service.—Captain (acting Major) J. M. Hamill, O.B.E., relinquishes his acting rank on vacating the appointment D.A.D.M.S. Captain (acting Major) A. G. R. Foulerton relinquishes his acting rank on ceasing to be specially employed.

1st Southern General Hospital.—Captain L. G. Parsons is restored to the establishment on ceasing to hold a temporary commission in the R.A.M.C.

2nd Southern General Hospital.—Major C. A. Morton and Captains A. L. Flemming and J. Freeman are restored to the establishment.

5th Southern General Hospital.—Captain (acting Major) C. H. Saunders relinquishes his acting rank on ceasing to be specially employed.

2nd Welsh Field Ambulance.—Captain J. P. H. Davies relinquishes his commission on account of ill health, October 14th, 1917, and retains the rank of Captain (substituted for notification in the *London Gazette*, December 10th, 1917).

APPOINTMENTS.

BRIDE, T. Milnes, M.D.Vict., Honorary Ophthalmic Surgeon to the Manchester Children's Hospital.

CROSBY, T. Villiers, Major R.A.M.C.(T.), M.D.Lond., Honorary Physician to the Leicester Royal Infirmary.

DONALDSON, Malcolm, M.B.Camb., F.R.C.S., Assistant Gynaecologist to the Royal Waterloo Hospital for Children and Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

HANCOCK.—May 25th, at The Grove, Bracondale, Norwich, the wife of Major T. W. Hancock, O.B.E., R.A.M.C.(T.F.), of a daughter.

KEMP.—On May 27th, at Brook House, Carbrook, Sheffield, Dr. and Mrs. Kemp—a son.

DEATHS.

GABE.—On May 18th, at Buxton, Edward Rees, aged 17 years, younger son of John Rees Gabe, M.D., of 3, Mecklenburgh Square, London, W.C.1.

HEFFERNAN.—On May 18th, 1919, at Soskin, Clonmel, co. Tipperary, Ireland, Lieut.-Colonel W. Heffernan, late R.A.M.C., aged 62 years.

DIARY FOR THE WEEK.

ROYAL SOCIETY, Royal Society of Arts, 18, John Street, Adelphi, W.C.2.—Tuesday, 8.15 p.m., Annual General Meeting.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday and Thursday, 5 p.m., Oliver-Sharpey Lectures by Professor E. H. Starling, C.M.G., F.R.S.: The Feeding of Nations—a Study in Applied Physiology.

ROYAL SOCIETY OF MEDICINE.—Wednesday, 8.30 p.m., Last Social Evening of the Season, 9 p.m., Mr. Cairns Forsyth: Hospital Work Behind the Argonne and Verdun. Section of Ophthalmology: Wednesday, 8 p.m., Cases, 8.30 p.m., Annual Meeting, Mr. E. M. Eaton: Visual Perception of Solid Forms. Dr. Rayner Batten: The Need of Ophthalmic Physicians for the Advancement of Ophthalmology. Section of Obstetrics and Gynaecology: Thursday, 8 p.m., Dr. Russell Andrews: Retroperitoneal Haemorrhage after Dilatation of the Cervix treated by Blood Infusion. Epididymus Demonstration: Dr. Eardley Holland on Syphilitic Placentae. Specimens. Section of Laryngology: Friday, 4 p.m., Cases and Specimens. The library and offices of the Society will be closed for the Whitsun holidays from Saturday, June 7th, to Monday, June 9th (both days inclusive).

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, W.—Friday, 8.30 p.m., Dr. Rickard Lloyd: Neuro-vascular Storms: Some Associated Circulatory and Nervous Symptoms.

DIARY OF THE ASSOCIATION.

Date. Meetings to be Held.

JUNE.

- 3 Tues. London: Public Health Committee and Poor Law and Public Health Subcommittees, 3 p.m.
- 4 Wed. London: Journal Committee, 2.30 p.m.
London: Medico-Political Committee, 2 p.m.
- 5 Thur. London: Organization Committee, 2 p.m.
Camberwell Division, Camberwell Dispensary, 3.30 p.m.
- 6 Fri. London: Central Ethical Committee, 2.30 p.m.
- 11 Wed. South-Western Branch, Annual Meeting, Royal Devon and Exeter Hospital; Luncheon, 1 p.m. to 2.30 p.m.; Meeting, 3 p.m.; Dinner, 7.30 p.m.; Meeting of the Profession, 11.30 a.m.
- 12 Thur. London: Propaganda Subcommittee.
South Wales and Monmouthshire Branch, Annual Meeting, Llanelly, 3.30 p.m.
- 18 Wed. London: Finance Committee, 2.30 p.m.
Kent Branch, Annual Meeting, Chatham; Luncheon, 1 p.m.; Dockyard, 2 p.m.; Tea, 4 p.m.; Meeting, 4.30 p.m.; Dinner, 6.30 p.m.
- 19 Thur. Surrey Branch, Annual Meeting, Croydon Town Hall; Luncheon, 1.15 p.m.; Dinner, 6.30 p.m.
- 20 Fri. Central Division, Birmingham Branch, 18, Bennett's Hill, 3.30 p.m.
- 20 Fri. East Yorkshire Division, Annual Meeting, Hull Royal Infirmary, 8.15 p.m.
- 21 Fri. Leinster Branch, Annual Meeting, Dublin, 5 p.m.; followed by Meetings of Dublin and East Leinster Divisions.
- 25 Wed. London: Council Meeting.
- 27 Fri. Metropolitan Counties Branch, Annual Meeting, 42, Strand, W.C.2, at 4 p.m.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 7TH, 1919.

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British Medical Association.

CURRENT NOTES.

Indian Medical Service.

THE meeting of the Naval and Military Committee of the British Medical Association, on June 2nd, had before it the resolution of the Council expressing its appreciation of the action of the Government in increasing the pay of officers of the Indian Medical Service, and its approval of the general undertaking given by the deputation to the Secretary of State for India to the effect that the Association would use its influence in securing officers for the service. The Committee had before it also the communiqué on new rates of pay on the military side, issued by the Secretary of State, and published in the *BRITISH MEDICAL JOURNAL* of May 3rd, 1919, p. 563. As the Committee has not yet received a communication from the Secretary of State with regard to the adjustment of the increased pay on the civil side of the Indian Medical Service it was felt that it could not take any further steps at the present time, particularly as there was reason to expect that the report of the Medical Services Committee, which had been sitting in India, would shortly be published. The Committee took note of various communications it had received from individual officers in military employment, pointing out that the increased rate of pay they would individually receive did not amount to 33½ per cent.

Income Limit for Insured Persons.

The attention of members is drawn to the report of a deputation from the Council of the Association to Major Astor, M.P., chairman of the Joint Committee of the Insurance Commissioners, on the subject of the proposed increase of income limit under the Insurance Acts, which appears in the body of the *JOURNAL*.

Purchase and Repair of Motor Cars.

The British Medical Association has been informed by the Ministry of Munitions that the Priority Department has been closed down, and that no assistance can now be given by the Ministry to medical practitioners requiring permits for the purchase of new motor cars or the execution of any repairs.

Meetings of Branches and Divisions.

BORDER COUNTIES BRANCH: ENGLISH DIVISION.

THE annual meeting of the Division, to which all practitioners (members and non-members) were invited, was held at Carlisle on May 30th.

Dr. ALFRED COX, Medical Secretary of the Association, gave an address on the experience of the medical profession as regards the National Insurance Acts and its effects upon the coming Ministry of Health, and was heard with much appreciation by a large audience. An animated discussion followed, in

which the following took part: Drs. N. MACLAREN, BOWSER, ABLETT, DOUGHTY, GRAHAM, BELL, IRVING, DOLAN, CERRAR, and COMRIE. Dr. COX having replied, he was accorded a hearty vote of thanks, on the motion of Dr. BOWSER, seconded by Dr. ABLETT.

The following officers were elected for the ensuing year:

Chairman: Mr. N. MacLaren. *Vice-Chairman:* Dr. G. Cullen. *Representative in Representative Body:* Dr. Muriel. *Deputy Representative:* Dr. Anderson. *Honorary Secretary:* Dr. J. R. S. Anderson.

At the conclusion of the meeting a banquet was held, the guests of the evening being Dr. Cox and Mr. W. Theodore Carr, M.P.

EDINBURGH BRANCH: EDINBURGH AND LEITH DIVISION.

AT a largely attended meeting of the medical profession in Edinburgh and Leith district, called by the Edinburgh and Leith Division to consider the extension and revision of the National Insurance Acts, the following resolution was passed unanimously:

That the proposal to raise the income limit for insured persons from £160 to £250 be uncompromisingly opposed.

GLOUCESTERSHIRE BRANCH.

THE annual meeting of the Branch was held at Gloucester on May 22nd, when the following officers were elected:

Chairman: Dr. D. E. Finlay. *Representative in Representative Body:* Dr. D. E. Finlay. *Honorary Secretary:* Dr. H. Cairns Terry.

The formal business having been concluded, a general meeting of the practitioners of the County of Gloucester was held. There were about fifty medical men present, and the meeting was addressed by Dr. ALFRED COX, O.B.E., Medical Secretary of the Association.

Dr. COX spoke of the proposed revision of service under the Insurance Acts for 1920, and urged medical men to study the Report of the Insurance Acts Committee (M.25), which every practitioner in the area had received. He hoped this important report would be read and discussed in detail. He asked that any meeting held to consider it would realize that these proposals were an honest attempt of the Commissioners and the Insurance Acts Committee to come to an understanding; and the main object of his address was to urge medical men to consider these proposals in the same atmosphere as they had been discussed between the Commissioners and the representatives of the Insurance Acts Committee. He warned the meeting not to repeat the mistake of mentioning in negotiations a rate of remuneration for work until the expected amount and conditions of work had been ascertained. He impressed upon the meeting the urgent need for the Defence Trust Fund.

Dr. COX replied to questions put to him, and a hearty vote of thanks was given to him for coming to address the meeting.

KENT BRANCH: CANTERBURY AND FAVERSHAM DIVISION.

AT the annual meeting of the Canterbury and Faversham Division, held at Canterbury on May 14th (notice of the meeting having been sent to the Secretary Isle of Thanet Division), the officers for the coming year were elected as follows:

Chairman: Dr. C. J. Evers (Faversham). *Vice-Chairman:* Dr. N. Robson (Sittingbourne). *Honorary Secretary and Treasurer:* Dr. T. B. Heggis (Sittingbourne). *Representative in Representative Body:* Dr. T. B. Heggis (Sittingbourne). *Representative on Branch Council:* Dr. H. O. Preston (Canterbury).

METROPOLITAN COUNTIES BRANCH: STRATFORD DIVISION.

THE annual general meeting of the Division, called for May 21st, was adjourned with a view to hearing the views of the Medico-Political Union at a meeting arranged in the district by that body. After Dr. STANCOMB had advocated the formation

of a branch of the union, it was decided that no local branch should be formed.

The adjourned annual meeting, to which the whole local profession was invited, was held on May 28th. The officers for the ensuing year were elected, Dr. Challans being appointed chairman. A report was submitted of the work of the Local Medical War Committee during its existence. It was decided not to reappoint the committee, but to leave any ethical matters which might arise to the executive of the Division.

A number of matters were discussed, including the Ministry of Health Bill, the future service under the National Insurance Acts, and the organization of the medical profession. The ethical position of medical men visiting the patients of others, whilst acting in official capacities, was brought forward, especially in connexion with the action of medical referees to the Pension Committees, and it was decided to bring the matter to the notice of the Ethical Committee of the Association.

SOUTH-EASTERN OF IRELAND BRANCH.

At the annual meeting of the Branch at Kilkenny, on May 7th, with Dr. J. H. JELLETT in the chair, the following officers were elected for 1919-20:

President: Dr. C. E. James. *Vice-President:* Dr. P. O'Brien. *Honorary Secretary:* Dr. P. Grace. *Honorary Treasurer:* Dr. J. H. Jellet. *Representative in Representative Body:* Dr. J. Power. *Deputy Representative in Representative Body:* Dr. J. Mitchell (Kilkenny). *Representative on Irish Committee:* Dr. J. V. Ryan (Carlow).

A cordial vote of thanks was passed to Dr. Jellet for the capable manner in which he conducted the meetings as President during the year.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A MEETING of the Division was held at Portsmouth on May 22nd, when Dr. F. C. H. MUGGLETON was in the chair. Major C. A. SCOTT-RIDOUT, M.S., F.R.C.S., R.A.M.C.(T.), gave an interesting account of the experiences of the medical unit which left Portsmouth in 1916 for the East. His remarks on the surgical work done in Salonica and Italy were much appreciated. Lieut.-Colonel T. A. M. FORDE, Dr. R. J. LYTLE, Dr. JOHN CASHIN, O.B.E., Surgeon Commander BANKART, C.V.O., R.N., Dr. HAMAR HODGES, Dr. GARTON, and Mr. BOSWORTH WRIGHT took part in the discussion which followed.

SURREY BRANCH: KINGSTON-ON-THAMES DIVISION.

At the annual general meeting, held at the Surbiton Hospital on May 15th, the following officers were elected for the coming year:

Chairman: Dr. N. C. Carver. *Vice-Chairman:* Dr. A. M. Sully. *Honorary Secretary and Treasurer:* Dr. T. W. Letchworth. *Representative in Representative Body:* Dr. R. N. Goodman. *Representative on Branch Council:* Dr. A. E. Evans.

YORKSHIRE BRANCH: SHEFFIELD DIVISION.

THE annual meeting of the Sheffield Division was held on May 30th, when Dr. MYLAN, and later Dr. A. E. BARNES, was in the chair.

The annual report of the Executive Committee stated that during the year much of the ordinary work of the Division had been in abeyance owing to the war. The Local Medical War Committee had, however, done a large amount of work, of which an interesting account was given by the Honorary Secretary, Dr. FORREST.

The following officers for the year 1919-20 were elected:

Chairman: Dr. A. E. Barnes. *Vice-Chairman:* Lieut.-Colonel J. Mackinnon, D.S.O. *Honorary Secretary:* Dr. H. Brown. *Representatives in Representative Body:* Drs. Forbes and Lodge.

Votes of thanks were passed to the retiring chairman and officers, and also to Dr. Forrest.

BOMBAY BRANCH.

The following officers have been elected:

President: The Hon. Major-General W. E. Jennings, I.M.S. *Vice-Presidents:* Lieut.-Colonel A. Street, I.M.S., and Dr. R. Row, D.S.C. *Honorary Secretary and Treasurer:* Dr. R. Bardi. *Representative in Representative Body:* Lieut.-Colonel Ashton Street, I.M.S., F.R.C.S. *Members of Council:* Lieut.-Colonel S. C. Evans, I.M.S., Dr. Soraba K. Nariman, M.D., Lieut.-Colonel E. F. Gordon Tucker, I.M.S., Major Soraba K. Engineer, I.M.S.(T.F.), Assistant Surgeon E. S. Bharucha, Miss A. M. Benson, M.D.

QUEENSLAND BRANCH.

The following officers have been elected for 1919:

President: Colonel A. Sutton, C.B., C.M.G., V.D. *Vice-Presidents:* Dr. J. Espie Dods, D.S.O., M.C.; Dr. A. Stewart. *Honorary Secretary:* Dr. J. Cameron Hensley. *Honorary Treasurer:* Dr. E. J. Spark. *Curator of Library:* Dr. T. H. R. Mathewson. *Curator of Museum:* Dr. F. Howson. *Council:* Dr. L. P. Winterbotham, Dr. Eustace Russell, Dr. L. M. McKillop, Dr. C. A. Thelander. *Honorary Vice-Presidents:* Dr. T. P. Ross, D.S.O. (Townsville), Dr. E. A. Falkner (Toowoomba).

WESTERN AUSTRALIAN BRANCH.

At the annual general meeting of the Branch on November 23rd the following office-bearers were elected:

President: Dr. Hadley. *Vice-President:* Dr. White. *Ex-President:* Dr. Atkinson. *Honorary Treasurer:* Dr. Trethowan. *Honorary Secretary:* Dr. Shearman. *Members of Council:* Drs. Clement, Merryweather, and Officers. *Auditors:* Drs. Moss and Randell.

Association Notices.

ANNUAL REPRESENTATIVE MEETING, 1919.

THE Annual Representative Meeting of the Association will be held in London, commencing on Thursday, July 24th.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy-Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

CONSTITUENCIES.

The list of provisional Home Constituencies in the Representative Body, 1919-20, was sent by the Council to all the Home Divisions and Branches in November. As intimated to all the Oversea bodies, the Council has made each Oversea Division and Division-Branch possessing an Honorary Secretary and the necessary organization an independent Constituency for election of a Representative.

ELECTION OF REPRESENTATIVES.

The Representatives, and, where so desired, the Deputy-Representatives, for 1919-20 must be elected not later than June 26th, and their names notified to the Medical Secretary not later than July 3rd.

ANNUAL CONFERENCE OF SECRETARIES.

The Council has decided to hold an Annual Conference of Honorary Secretaries of Divisions and Branches in the afternoon of Wednesday, July 23rd, in connexion with the Representative Meeting. Particulars as to the Conference will be announced later. Honorary Secretaries are hereby invited to give notice of matters they desire should receive consideration. They are also reminded that, as in the case of Representatives, the first-class travelling expenses within the United Kingdom of the Honorary Secretary of a Division or Branch attending the Conference are payable from the central funds of the Association.

SCHOLARSHIPS AND GRANTS IN AID OF SCIENTIFIC RESEARCH.

SCHOLARSHIPS.

THE Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows:

1. An *Ernest Hart Memorial Scholarship*, of the value of £200 per annum, for the study of some subject in the department of State Medicine.

2. *Three Research Scholarships*, each of the value of £150 per annum, for research into some subject relating to the causation, prevention, or treatment of disease.

Each Scholarship is tenable for one year, commencing on October 1st, 1919. A Scholar may be reappointed for not more than two additional terms.

The Conditions of the award of Scholarships are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

GRANTS.

The Council of the British Medical Association is also prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

Applications.

Applications for Scholarships and Grants for the year 1919-20 must be made not later than Saturday, June 28th, 1919, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct

such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX,
Medical Secretary.

429, Strand, London, W.C.2.
May 24th, 1919.

MEETING OF COUNCIL.

The next Meeting of Council will be held on Wednesday, June 25th, in the Council Room, 429, Strand, London, W.C.2.—By order,

W. E. WARNE,
Acting Financial Secretary and Business Manager.
June 5th, 1919.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

LENDING FACILITIES FOR MEMBERS.

The Council has made arrangements whereby books relating to all branches of medical literature and general science can now be obtained on loan by members of the Association free of charge (other than any postage) from the Lending Department of the Library of the Association, 429, Strand, London, W.C.2. The new facilities include, besides works on medicine, surgery, anatomy, physiology, bacteriology, dentistry, hygiene, obstetrics, and the other branches of medical and surgical science, the subjects of astronomy, biology, botany, chemistry, electricity, engineering, geology, microscopy, mining, physics, philosophy, sociology, technology, voyages and travels, zoology, etc. All such books issued will be latest editions, new books and new editions becoming available immediately upon publication.

The new facilities are additional to those which were already available for loan to members, of medical journals and periodicals, scientific reports of hospitals and laboratories, transactions of societies and congresses, and reports issued by States and municipalities, including those of commissions and committees appointed by States, municipalities, and legislative bodies.

The rules in respect of the new facilities will be similar to the previous rules. Copies of the rules, and all other information, may be obtained on application to the Librarian, British Medical Association, 429, Strand, London, W.C.2.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DUNDEE BRANCH.—Dr. R. C. Baist, Honorary Secretary (166, Nethergate, Dundee), gives notice that the annual meeting of the Branch will be held in University College, Dundee, on Wednesday, June 18th, at 5 p.m. Business: Election of office-bearers; agenda of the Annual Representative Meeting. The Branch will meet for dinner in the Royal Hotel, Dundee, at 7 p.m., after the Branch meeting, when Dr. H. C. Colman will preside. The co-operation of the neighbouring Branches is hoped for, and members may invite private guests, including ladies. The dinner fee is 5s.—morning dress.

EAST YORK AND NORTH LINCOLN BRANCH: EAST YORKSHIRE DIVISION.—Dr. H. L. Evans, Honorary Secretary (101, Prince's Avenue, Hull), gives notice that the annual meeting of the Division will be held in the Board Room of the Hull Royal Infirmary, on Friday, June 20th, at 8.15 p.m. Business: Annual report, financial statement, election of officers, etc.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary (Chillingworth House, Tunbridge Wells), gives notice that the sixth annual meeting of the Branch will be held on Wednesday, June 18th, in the Rochester, Chatham, and Gillingham Division. The President-elect, Mr. Godfrey Taunton (Chatham), kindly invites members to luncheon at the Mayor's Parlour, Town Hall, Chatham, at 1 p.m. (There will be standing room for many cars at the side of the Town Hall.) At 2 o'clock the members will be conducted over the Dockyard, by invitation of Rear-Admiral Sir W. Goodenough, K.C.B. Tea will be provided at the Town Hall, by the inviting Division, at 4 p.m. At 4.30 the annual business meeting will be held in the Council Chamber, Town Hall, Chatham. Business: Report of the election of officers, annual report and financial statement, appointment of auditors, other business. Mr. Godfrey Taunton, will read a paper on "Chronic Intestinal Stasis in Children." The annual dinner will be held at the Bull Hotel, Rochester, at 6.30 p.m. (Tickets, 7s. 6d. each.) Wine will be provided by the local members.

LEINSTER BRANCH.—Mr. W. Doolin, F.R.C.S.I. (50, Fitzwilliam Square, Dublin), gives notice that the annual meeting of the Leinster Branch will be held in the Irish Offices of the

Association, 16, South Frederick Street, Dublin, on Friday, June 20th, at 5 p.m., to be followed by meetings of the Dublin and East Leinster Divisions.

METROPOLITAN COUNTIES BRANCH.—Mr. N. Bishop Harman and Captain Wilfred Kingdon, R.A.M.C. (Honorary Secretaries), give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C.2, on Thursday, June 26th, at 4.30 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of Council and of representatives of the Branch on the Central Council. (3) Alteration of a certain rule. (4) President's Address: Mr. W. McAdam Eccles, "Reconstruction in Medical Education."

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—Dr. James Hudson, Honorary Secretary *pro tem.* (23, Ridley Place, Newcastle-upon-Tyne), gives notice that the sixteenth annual meeting of the Newcastle-upon-Tyne Division will be held at 23, Ridley Place, Newcastle-upon-Tyne, on June 12th, at 8 p.m., when matters of importance will be discussed; non-members of the Association are also invited. Agenda: Election of officials; annual report and financial statement; matters for discussion at Representative Meeting; report of Council of British Medical Association; amendment of Rule 11; any other competent business.

SOUTH MIDLAND BRANCH: BEDFORD DIVISION.—Dr. E. R. Fasnacht, Honorary Secretary (116, Hurst Grove, Bedford), gives notice that the annual meeting of the Bedford Division of the South Midland Branch will be held on Thursday, June 12th, at the Embankment Hotel, Bedford, at 3 p.m., for the election of officers and Representatives; also to elect the President for the South Midland Branch, and to revise the Organization Rules. The Chairman (Dr. Waugh) has kindly invited the members to luncheon, at 1.30 p.m., at the Embankment Hotel.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.—Dr. L. Freeman Marks, Honorary Secretary (Brynheulog, Mumbles, Swansea) gives notice that the annual meeting of the Branch will be held at the Town Hall, Llanelly, on Thursday, June 12th, at 3.30 p.m.

SOUTH-WESTERN BRANCH.—The eightieth annual meeting of the Branch will be held on Wednesday, June 11th, at the Royal Devon and Exeter Hospital, at 3 p.m., when the chair will be taken by the President, Mr. J. M. Ackland. The report of the Branch Council and the annual financial statement will be presented and the officers of the Branch will be elected for 1919-20. An address, to which non-members of the Association are invited, will be given by Dr. Alfred Cox, O.B.E. (Medical Secretary of the Association), on the Ministry of Health Bill and the future of the medical profession. Luncheon, by kind invitation of the President, will take place from 1 p.m. to 2.30 p.m. at No. 1, Barnfield Crescent, and tea at the same address after the meeting. The annual dinner of the Branch will be held at the Rougemont Hotel at 7.30 o'clock. Tickets 10s. 6d. each, exclusive of wine. At 11.39 a.m. on the same date a meeting of all members of the medical profession practising within the administrative county of Devon will be held at the Devon and Exeter Hospital, to consider the formation of a body which could be put forward as representative of the profession in the administrative county of Devon, and be available for consultation by any administrative body set up under the Ministry of Health Bill; and to discuss the question of raising fees to meet the altered conditions created by the war.

INSURANCE.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON PANEL COMMITTEE.

ON May 20th the London Panel Committee met at the offices of the Metropolitan Asylums Board, Dr. H. J. CARDALE, the Chairman of the Committee, being in the chair.

Joint Committee of Panel Committees.

The Committee approved a scheme for the establishment of a "standing joint committee of local medical and panel committees for London and the Northern Home Counties" (i) to act as a means of consultation among constituent Panel Committees, and to assist in co-ordinating their work; and (ii) to consider anything which it might appear desirable to suggest to the Panel Committees in the group as likely to advance the common interests of insurance practitioners in the area. The standing joint committee will consist of two representatives of the Panel Committees for London, Middlesex, Hertfordshire, Essex, West Ham, and Southend, together with the three representatives of the whole area (Group K) upon the Insurance Acts Committee of the British Medical Association.

The Income Limit.

Consideration was given to the proposal emanating from the approved societies to increase the insurance income limit from £160 to £250, and the Committee approved the alteration of the income limit for persons already insured so as to conform to the changed trade value of money as reasonable and necessary; and expressed the opinion that those persons not already insured, whose incomes have

not been increased to meet the changed trade value of money, should not be excluded from the privileges of insurance.

Remuneration of Practitioners.

The Finance and General Purposes Subcommittee reported that they had approached the Insurance Acts Committee urging them to represent to the Government the necessity for immediately adjusting the remuneration of the practitioners serving under the National Insurance Acts during 1919, so that it might conform to the altered value of money. The Committee approved the action so taken, and are asking all Panel Committees to take similar action.

Revision of Terms of Service.

The dissatisfaction expressed by practitioners with the present conditions of service under the Insurance Acts, and their unwillingness to continue under these conditions for any length of time, led the Committee to approve the action of their Subcommittee in informing the President of the Local Government Board and the Insurance Commissioners that the long promised revision of the terms of service should be completed without further delay, so that the new conditions may become operative by January 1st, 1920. All Panel Committees are being asked to send resolutions to this effect to the Insurance Commissioners and the President of the Local Government Board.

Medical Benefit Regulations.

The Panel Service Subcommittee submitted reports of negotiations with a view to securing amendments to the Medical Benefit Regulations (1) to limit the expenses recoverable by insured persons from practitioners; (2) to provide a time limit of three months within which complaints should be preferred against practitioners; (3) to prevent either the complainant or the respondent being permitted to agree to the withdrawal of a complaint upon payment by the other party of the expense incurred; and (4) to secure that all cases involving range of service should be referred to the Local Medical Committee.

Medical Service Subcommittee.

The Committee determined to call the attention of the Commissioners and the Insurance Committee to the necessity that a practitioner should not be asked to appear before the Medical Service Subcommittee until he has been informed specifically of the complaint preferred against him; and that where, in the course of an inquiry, other complaints emerge, such complaints should form the subject of a fresh inquiry.

The Supply of Drugs.

A Joint Committee, representing the Insurance, Panel, and Pharmaceutical Committees, has been appointed to deal with the early closing of chemists' shops, and to provide facilities for dispensing urgent prescriptions after 8 o'clock p.m. A review of the complaint cases dealt with by the Pharmaceutical Service Subcommittee has forced the Committee to the conclusion that the decisions of that Committee do not help towards a mitigation of the difficulties experienced by insured persons in obtaining drugs and appliances. The number of complaints of delay in dispensing medicines, short measure, inferior quality of drugs, and in some cases rudeness on the part of chemists and their assistants, has led the Committee to press on the Commissioners and the Insurance Committee the view that "some revision of the method of supplying drugs and appliances is urgently necessary."

DURHAM.

Income Limit for Insurance Act.

At a special meeting of the Durham County Medical and Panel Committee on May 15th the following resolution was passed in connexion with the proposal by the Government to increase the income limit under the Insurance Acts:

That the Durham County Panel Committee approves of the proposal to increase the present income limit which applies to insured persons from £160 to £250, provided that the Government arrange for a suitable increase in the capitation fee for the treatment of insured persons.

SURREY.

At a meeting of the Local Medical and Panel Committees on March 21st it was resolved that the scheme suggested for the payment of the grant to rural and semi-rural practitioners, to meet extra travelling expenses owing to the war, be accepted on the basis of the number of insured persons panel practitioners dispensed for, with the following proviso:

That practitioners residing in rural and semi-rural areas and not dispensing for insured persons should be entitled to participate in this grant, and that a circular be sent to every practitioner asking if they wish to make a claim, in which case it should be decided on the average common for dispensing practitioners in the county.

It was decided to issue the British Medical Association circular M.21, 1918-19, with an explanatory letter from the Chairman.

WEST RIDING OF YORKSHIRE.

At a meeting of the Local Medical and Panel Committees on April 4th it was agreed that as a man who enlisted was removed from the panel from the date of his enlistment, a man reinstated on the panel should be reinstated from the date of his discharge from the army.

It was announced that the Commissioners had approved payment for emergency dressings at the rate of 6d. per dressing as from January 1st, 1918, and that accounts already submitted by practitioners calculated at the rate of 3d. per dressing would be amended accordingly by the Committee and without further reference to practitioners, whose accounts would be credited at the new rate as from the beginning of 1918.

GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION.

SUMMER SESSION, 1919.

Sir DONALD MACALISTER, K.C.B., President,
in the Chair.

DISCIPLINARY CASES.

FELONY.

THE Council considered on May 28th the case of Nathaniel Osborne McConnell, M.B., B.S., R.U.I., of 113, North Street, Belfast, who was summoned to appear on the charge that, being a registered medical practitioner, he was convicted at Belfast Assizes on March 24th, 1919, of feloniously, wilfully, and of malice aforethought, killing and murdering Mary Jane Reid, and was sentenced to be hanged, which sentence was afterwards commuted to penal servitude for life.

Dr. McConnell appeared in person, and was informed by the President and the Legal Assessor that, the case being one of conviction for felony, the Council could not go into the question as to whether the conviction was justified or not, but had merely to decide whether the felony, which it had to assume was committed, was of such a character as to call for the removal of the defendant's name. The defendant made some observations to the effect that he was innocent of the charge, and that the court which had convicted him was a lay and not a medical court; but the President said that the Council had no power to retry the case. The defendant thereupon said that if he was not allowed to enter into details as to the crime of which he was accused he was hopelessly prejudiced.

After the Council had deliberated in private, the PRESIDENT said:

I have to announce the decision of the Council: that Nathaniel Osborne McConnell having been proved to have been convicted of the felony alleged against him in the Notice of Inquiry, the Registrar has been directed to erase his name from the *Medical Register*.

ALLEGED WRONGFUL ATTEMPT TO PROCURE DIPLOMAS.

THE Council considered on May 28th the case of Robinson Ruddock Coyle, M.B., C.M.Glasg., of 36, Berkeley Terrace, Glasgow, who was summoned on the charge:

That, being a registered medical practitioner, you, with the object of procuring for your nephew James Allan (not being a registered medical practitioner) the diplomas of a deceased practitioner of the same name and thereby enabling the said James Allan to pass himself off as a registered medical practitioner, in or about the month of October, 1902, wrote and/or signed and addressed a letter to the parents or relatives of such deceased practitioner offering to purchase his diplomas. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Dr. Coyle was present, together with his counsel, Mr. Travers Humphreys, and as there was no complainant the case was opened by the Council's Solicitor, Mr. HARPER, who said it involved the relation of facts regarding another person who was not present. In 1918 it was found that a man named James Allan, who was in medical practice at Chislehurst, and had received for his services in connexion with the Red Cross the O.B.E., was not on the *Medical Register*, although his name appeared in the *Medical Directory*, where he was described as M.B., C.M.Edin. It had been in the Directory continuously from 1903 to 1918, by which time the insertion had lengthened to ten lines, giving diplomas, appointments, membership of medical societies, and contributions to medical literature. The Director of Prosecutions took up the case, and in the course of investigation certain documents were received by the inspector in charge, Inspector A. Helden, one of which came from the sister of James Allan of Linlithgow, who

had qualified in 1893 and had died five years later. This was a typewritten letter, apparently on Dr. Coyle's printed paper, addressed to the parents or relatives of the late Dr. James Allan. The letter was undated, but the postmark was "Glasgow, October, 1902," and it read, "For diploma with certificate in fair condition I am prepared to give £5." It also went on to make an offer of purchase of surgical instruments. The letter was signed "R. R. Coyle, M.B., C.M.," and the envelope was also in Dr. Coyle's writing. Inspector Helden thereupon went to Glasgow and saw Dr. Coyle, from whom he learned that the living James Allan was his nephew. Dr. Coyle said that the letter was the work of his nephew, who had got into trouble with a woman in Glasgow, and wished to get rid of her by the fantastic method of getting some diplomas, opening a surgery, having a friend occupy the surgery, and when in due course the lady (seeing the name outside) would call at the surgery arranging for her to be told by the friend that James Allan was dead, and to have her attention called to the diplomas on the wall. James Allan, as he was not on the *Register*, did not come within the jurisdiction of the Council, but Dr. Coyle's statement was notified to the Council, and he was asked for an explanation of the letter. At first he denied the signature, but now he admitted that it was his, though he could remember nothing of the circumstances, nor did he accept Inspector Helden's account of the interview.

Inspector HELDEN, in evidence, gave an account of his interview with Dr. Coyle on November 15th, 1918. Dr. Coyle refused to make a signed statement or to permit the witness to take notes. But in the course of a long conversation the inspector elicited various facts with regard to James Allan: that he was born in Ireland in 1870, came to Glasgow at 18, was five years shop assistant in that city, also studying medicine there at a medical school which could not be identified, and that about 1893 he came to London, and some years later returned on a visit to Glasgow, giving his uncle the impression that he was a fully qualified medical man. Answering Mr. TRAVERS HUMPHREYS, the witness said that James Allan was assistant to a doctor at Barnes for some years, and before that was an assistant in Mile End. By 1902 he was regarded as an established medical man in Chislehurst. The description in the *Medical Directory* was correct, with the exception of his medical degree. Mr. HUMPHREYS suggested certain respects in which the inspector had misapprehended Dr. Coyle's statement at the interview.

Mr. HUMPHREYS, for the defence, said that undoubtedly James Allan was a very clever person, and Dr. Coyle, his professional qualifications apart, was not his equal in that respect. Dr. Coyle had been in disagreement with his nephew for many years, and had, indeed, been the means of his leaving Glasgow in 1892 or 1893. He accepted on Dr. Coyle's part the signature of the letter, which had been compared by experts with signatures on cheques and other documents, and could not be a forgery. Of the letter itself Dr. Coyle could offer no explanation, but there was no reason why Dr. Coyle in 1902 should lend himself to a nefarious practice for the benefit of his nephew with whom he was even then at variance, and the whole history of the case contradicted that suggestion. As to Mr. Allan, it was evident that he must have taken a course of medical study before 1902 in order to acquit himself as he did in his constant intercourse with his fellow practitioners.

Dr. COYLE, in evidence, said that he had been in practice for twenty-seven years. He could give no explanation of his signature. He did not believe he had ever signed a typewritten document, and he had never had a typewriter in his house. Possibly the signature was on a blank sheet and the typewritten words afterwards put in. After seventeen years he could not recall any of the circumstances. Asked by the LEGAL ASSESSOR whether he had ever looked in the *Medical Register* to see if his nephew was qualified, he said he had not done so. He had taken it for granted, and after seeing his nephew engaged in his work in London he had never had a thought on the subject of his registration. Asked by Mr. TRAVERS HUMPHREYS what possible use these diplomas could be to his nephew in 1902, then in practice in Chislehurst, he said he could not see that they would be of the smallest value. He added that at the interview with Inspector Helden he was very much disturbed and upset, but he denied parts of the inspector's version.

Inspector HELDEN, recalled, said that the interview with Dr. Coyle lasted two or three hours, with interruptions, consequent upon the doctor having to attend to patients. He made no notes at the interview, the doctor refusing to let him, nor did he make such notes in the waiting-room during the intervals, as he was then engaged in asking

questions of the patients as to the kind of medical man Dr. Coyle was! He did not write out the particulars of the interview until he came back to London.

After the Council had deliberated in private, the PRESIDENT said:

Dr. Coyle, I have to announce to you that the Council does not see fit to direct the Registrar to erase your name from the *Medical Register*.

MISDEMEANOURS.

The Council considered, on May 28th, the case of Hugh Mowat, M.B., C.M.Aberd., of 116, Salisbury Road, Everton, Liverpool, who was summoned to appear on the charge that, being a registered medical practitioner, he had been convicted, in April, 1913, at Liverpool, of being drunk and disorderly, and in March, 1918, at the same place, of being drunk and incapable, and that in November, 1918, while temporary lieutenant in the R.A.M.C., he had been found guilty by a general court-martial of drunkenness while on active service and sentenced to be dismissed the army.

The Council's Solicitor, Mr. HARPER, said that the court-martial had recommended the accused to mercy on the ground of his age and his inexperience of military discipline. On October 31st, 1918, when on duty as orderly medical officer at the military hospital, Oswestry, he was evidently under the influence of drink, and went about his duties in pyjamas. There was no evidence that while the misdemeanours at Liverpool were committed he was attending patients.

Dr. Mowat, giving evidence on his own behalf, maintained that the Liverpool incidents were due to an excess of zeal on the part of the police; in one instance he had merely been overcome, after a very slight indulgence, by going out into the night air. As to the charge of drunkenness while on military service, he had been suffering from influenza, and in order to keep himself fit for his work he took salicylate of soda, followed by four or five glasses of rum during twenty-four hours. He added that he joined the forces when over the age for compulsory service, and had more than once sent in his resignation, of which no notice had been taken. He put in a testimonial to his good conduct while acting as surgeon on a ship since his dismissal from the army.

After the Council had deliberated in private, the PRESIDENT said:

Mr. Mowat, I have to tell you that the convictions alleged against you in the Notice have been proved to the satisfaction of the Council. These convictions indicate a habit which may be not only dangerous to your patients but discredit to your profession. In order to give you an opportunity of reconsidering your attitude in this matter, the Council has postponed judgement on the convictions proved against you till the November session. Before that date you will be required to send to the Registrar of the Council the names of some of your professional brethren who may be willing upon written application from the Registrar to testify by letter addressed to him for the use of the Council as to your character and conduct in the interval. You will receive in due course a formal written intimation of what I have just announced to you, and the intimation will specify the date to which I have referred, when you should be present, and should understand that in the event of any further conviction for a similar offence the Council may instruct the Registrar to erase your name from the *Medical Register*.

"UNDUE INFLUENCE."

The Council, on May 28th, 29th, and 30th, considered the case of Dr. William Herbert Fawcett, registered as of "Old Studley," Wimborne Road, Bournemouth, who was summoned on the charge:

That, being a registered medical practitioner, you, in the months of February, March, and April, 1917, whilst attending professionally your patient, Mrs. Clara Jane Barlow (who died on September 8th, 1917), at Bournemouth, and in conjunction with one Katie Wearham, nurse companion to the said Clara Jane Barlow, improperly used undue influence upon the said Clara Jane Barlow to make and execute a transfer to yourself of £1,000 National War Loan Stock, and to make and execute a will, dated April 30th, 1917, of which one Clement John Haydon and you were appointed executors, under which you and the said Katie Wearham benefited to the extent of a pecuniary legacy of £1,500 to each of you and by which you and the said Katie Wearham were made equal devisees and legatees of the residuary estate of the said Clara Jane Barlow.

And in respect whereof you have been under the censure of a judicial authority—namely the Honourable Mr. Justice Horridge, in the trial of an action of your co-executor and yourself against the Rev. Richard Henry Pring in the Probate Division of the High Court of Justice on November 15th, 1918 (in which it was sought to have the said will established), and also of the Court of Appeal on March 17th, 1919, on appeal from the judgement of the said Mr. Justice Horridge.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Dr. Fawcett attended, accompanied by his counsel, Mr. Cotes-Freedy, and his solicitor, Mr. Havilland.

Mr. COTES-FREEDY objected at the outset that the transfer of the War Stock was not the subject of the judge's censure. The objection was overruled on the ground that the transfer was relevant to the main issue.

Mr. HARPER, the Council's solicitor, said that this was the first case in his ten years' experience of the Council, if not the first in the Council's history, in which the question of undue influence had arisen. The late Mrs. Barlow's husband died in 1904, and in the following year

she was in bad health. She was then just over 60. She was found to be suffering from melancholia, and at the request of the trustees of her husband's marriage settlement, and on the advice of Dr. Hyslop who had been consulted, the Rev. R. H. Pring, her grand-nephew, acted for her under a power of attorney for about a year. She recovered her health and the power of attorney came to an end. In 1908 she went to Bournemouth, where Dr. Fawcett became her medical man. In 1914 she made a will whereby the residuary estate was left to Mr. and Mrs. Pring and their children. In February, 1917, Mrs. Barlow, desiring a new nurse companion, she consulted Dr. Fawcett, and after one or two suggestions, which did not materialize, Miss Katie Wearham was engaged. Mr. Harper then read at great length (his opening address occupying five hours) the evidence laid before the Probate and Appeal Courts, in which it was stated that friends and relatives and old servants were prevented from seeing Mrs. Barlow, and that she became coolly disposed towards Mr. Pring, whom hitherto she had regarded with affection.

The address was interrupted to admit of the evidence of Dr. Henry Grabham Lys, of Bournemouth, who was called in consultation with Dr. Fawcett in 1917 with regard to Mrs. Barlow's condition. He said that there was a certain amount of cerebral failure associated with arteriosclerosis. He gave the general advice that she should live very quietly: his recollection was not so clear as to having advised that she should see few friends; he would not have gone so far as to say that she should see none.

Mr. HARPER then concluded the history of the case by saying that Mrs. Barlow, being again in a very nervous condition, and stating that she did not feel able to manage her affairs, the question of power of attorney was revived, and Dr. Fawcett consented to act, but only conjointly with the lady's solicitor and bank manager. On April 30th, 1917, she made a will the effect of which was that, with the exception of a few small legacies, the whole of her property was divided between the nurse and the doctor. The suggestion of the charge was that, as one of the Appeal Court judges stated, the testatrix was under the domination of the nurse, that although she understood what she was doing, she had to do it, and that the nurse in having her under control was supported by the doctor. He read the judgements of Mr. Justice Horridge, and of the Master of the Rolls, Lord Justice Scrutton, and Mr. Justice Eve, in the Court of Appeal, whereby the will was pronounced invalid.

Dr. L. A. WEATHERLY of Bournemouth gave evidence. He said that he first heard of the case from Mr. Haydon, the lady's solicitor, on April 21st, 1917. His instructions were, being a mental specialist, to examine Mrs. Barlow in order to determine her competency to make a will. He examined her the following day, and reported that she understood the character of her property, the extent of her power of disposition, and the nature and effects of the act she desired to do. He found her of sound mind and memory, and perfectly capable of making a will. On April 30th he went again, when he witnessed the will. He was present also on May 4th, when Mr. Pring, who had come to see his grand-aunt as the result of certain rumours about her friends being excluded, was received with marked coldness by the old lady. There was absolutely nothing in Mrs. Barlow's condition which made it necessary to prevent her friends from seeing her, and knowing as he did that Dr. Fawcett was benefiting under the will, he thought it his duty to see him and talk matters over. He pointed out to Dr. Fawcett that although the will would never be upset on the ground of insanity, it might be upset on that of undue influence. Dr. Fawcett did not take it as a friendly action at all, but as an interference which he resented. In cross-examination Dr. Weatherly said that in his written record of the interview with Dr. Fawcett the will was not mentioned, but the notes he had made were quite brief, and for the sake of Dr. Fawcett he mitigated the case as much as possible in view of the fact that the document might be brought into a public court; moreover, Mr. Haydon suggested to him that it would be well to let the matter of the interview drop, and it was only under pressure while giving evidence in the court that he had referred to it.

After the Rev. R. H. PRING had given certain corroborative evidence,

Mr. COTES-FREEDY made his speech for the defence. He said that the issue was not whether the nurse-companion exercised undue influence, although the bulk of Mr. Harper's opening speech would apply to her. He regretted that this case was not tried by a jury; there had been a grave miscarriage of justice. What direct evidence was there that Dr. Fawcett had exercised coercion? Mr. Justice Horridge had said that

he was not satisfied that until April 14th, 1917, Mrs. Barlow intended to benefit the Prings. The will was made on April 30th. Could Dr. Fawcett in sixteen days have brought about such a transformation in the mind of the old lady as to induce her to disinherit her relatives and make a will in his favour? Dr. Weatherly had said that at the time she executed the will she was of sound understanding. He suggested that during the interview between Dr. Fawcett and Dr. Weatherly there was no mention of the will, and that that was an afterthought on Dr. Weatherly's part. He reminded the Council that Dr. Fawcett had refused to act under power of attorney unless the lady's solicitor and her banker acted with him. Wherever there was any direct evidence as to the doctor, it showed his conduct as absolutely correct.

Mr. C. J. HAYDON, the solicitor and co-executor of the will, gave evidence as to the transfer of the £1,000 War Stock. He said that at the time the power of attorney was being prepared Miss Wearham called and said that Mrs. Barlow wanted to see him with regard to this transfer. He advised Mrs. Barlow to carry out the operation through her bank manager, but she told him that at the time she purchased the stock she intended giving it to Dr. Fawcett, and she denied, on his interrogation, that the matter had been suggested to her by any one. Under those circumstances he arranged for the transfer. With regard to the will, he took the precaution, knowing that she was giving power of attorney, of getting expert advice as to her competency, and accordingly it was arranged that Dr. Weatherly should examine her. She told the witness that no one had prompted her; it was absolutely her wish to dispose of her property in this fashion. She said that she had known Dr. Fawcett for some years, and he had been kind and attentive. She declared also that she had not told Dr. Fawcett of her dispositions.

Dr. FAWCETT, in evidence, said that the accusation of excluding visitors was based on exaggeration. The only individual whom he had suggested should be excluded was a former nurse-companion who came frequently and acted on Mrs. Barlow as an irritant. So far from excluding relatives, he had actually brought about a reconciliation between one of the Barlow family and Mrs. Barlow; that was after the will was made. He never knew that he was benefiting under the will until after Mrs. Barlow's death. He was sure that she acted, both in that matter and in the matter of the transfer, of her own free will. He added that he had returned the £1,000 War Stock since the Court of Appeal judgement. He resented Dr. Weatherly's suggestion at the interview that he was acting in any private manner with regard to his patient.

After the Council had deliberated in private for over half an hour, the PRESIDENT announced the Council's decision as follows:

Dr. Fawcett, I have to inform you that the Council has given careful consideration to your case; it has judged you to have been guilty of infamous conduct in a professional respect, and has directed the Registrar to erase your name from the *Medical Register*.

Saturday, May 31st.

Sir NORMAN MOORE presiding.

EDUCATION COMMITTEE.

Dr. MACKAY presented a brief oral report from the Education Committee. The Council had addressed to the various teaching institutions certain questions on the subject of the teaching of preventive medicine, but as yet not all the institutions had replied. It was of very great importance that the Council should begin to deal fully with this subject. Speaking with regard to the preliminary examination system, he said that the Council had taken various steps forward in the past, but much remained to be done. He hoped that those bodies which were responsible for examinations below the intermediate standard (the first schools examination of the Board of Education *plus* two passes with credit) would seek to have them tested by a responsible authority. In that way the task of differentiation, which at present was very difficult for the Council to undertake, would be simplified. He would advise that this should be done at once, as it might come about that the Council would find itself in a position to cut off all examinations below a certain standard.

Dr. McVAIL emphasized the importance of the teaching of preventive medicine, a question which was taking the schools' authorities of the country some time to deal with.

EXAMINATION COMMITTEE.

Dr. NORMAN WALKER presented a report from the Examination Committee on matters relating to the

Apothecaries' Hall of Ireland. It included a report from Dr. John Magee Finny on the primary, intermediate, and final examinations of that body for the period March to December, 1918. Though there were some criticisms which required and would doubtless receive consideration from the authorities of the Apothecaries' Hall, the report was in the main favourable. Dr. Finny had been reappointed deputy.

Dr. MAGENNIS said that the report was to his mind very satisfactory and very fair, as might have been expected from Dr. Finny. He took the opportunity of thanking the Council for their forbearance with his frequent interventions on behalf of the Apothecaries' Hall.

Dr. NORMAN WALKER also moved a report of the Committee giving an analysis of the annual tables for 1918, showing the results of the examinations of the licensing bodies in medicine, surgery, and midwifery. The report included a communication from the Council of British Ophthalmologists which recommended that no student should be admitted to the final examination qualifying to practise medicine unless he had attended an ophthalmic clinic for not less than six hours a week, during a period of three months, and had attended a course of systematic instruction in ophthalmology; and, further, that no student should be considered to have passed the qualifying examination unless he had shown a sound knowledge of practical ophthalmology in an examination conducted by ophthalmic surgeons. His committee, however (Dr. Norman Walker continued), was not in favour of requiring a special examination in ophthalmology, but recommended

That every student should be required to attend a course of practical instruction in ophthalmology of not less than ten weeks' duration, and that no student should be admitted to the final examination unless he presents a certificate to the effect that he has attended such a course regularly, and that his work in connexion therewith has reached a satisfactory standard.

Sir JOHN MOORE, in seconding, said that the Conjoint Board in Ireland with which he was associated was one of the five examining bodies which did examine in ophthalmology, and the examination was an excellent thing, but he was nevertheless in favour of the proposition that it should not be made a compulsory subject.

Dr. LITTLEJOHN said that if a special examination in ophthalmology were accepted it would be necessary to follow the same course with other special subjects.

The Committee's recommendation was adopted.

PUBLIC HEALTH COMMITTEE.

Sir JOHN MOORE, in bringing forward the report of the Public Health Committee, said that the Metropolitan Asylums Board had suggested that the number of attendances at hospitals for infectious diseases required in the regulations and rules for diplomas in public health should be reduced, but his committee after careful consideration found itself unable to recommend any reduction. He also moved, in accordance with an opinion expressed by the Council in 1914, which had not been put into effect owing to the war:

That it is advisable that all examinations conducted for the purpose of conferring the several registrable degrees, diplomas, or certificates in sanitary science, public health, or state medicine, specified in Table G, at page lxxv of the *Medical Register*, should be inspected, and that it be remitted to the Executive Committee to consider and report upon the necessary arrangements for the inspection.

The recommendation was agreed to.

PHARMACOPOEIA COMMITTEE.

Sir NORMAN MOORE presented the report of the Pharmacopoeia Committee, in which it was stated that the necessary legal steps had been taken for the withdrawal of the temporary alterations in the *Pharmacopoeia* in connexion with the supplies of sugar, glycerin, fats, and oils, which, the Government authorities announced, were now sufficient for the uses of pharmacy.

STUDENTS' REGISTRATION COMMITTEE.

Sir NORMAN MOORE moved the report of the Students' Registration Committee on cases of exceptional registration as students and the antedating of the commencement of professional study. St. Leonards School, St. Andrews, was added to the list of recognized teaching institutions approved by the Council.

DENTAL EDUCATION AND EXAMINATION COMMITTEE.

Sir CHARLES TOMES moved the report of the Dental Education and Examination Committee on various applications for exceptional registration. The recommendations of the Committee in each individual case were put and agreed to. Sir Charles said that a number of applications had been received from Canadians and others in which the data presented were insufficient to enable the Committee to decide whether to recommend them or not. They would doubtless renew their applications with fuller evidence at a later date.

MEMBERSHIP OF COMMITTEES.

All the reports having been received and entered on the minutes, the nominations of Branch Councils for three Committees were adopted:

Examination Committee.—Dr. Elliot Smith, Dr. Caton, Mr. Barling (by English Branch Council); Dr. Cash, Dr. Russell, Dr. Norman Walker (by Scottish Branch Council); Sir John Moore, Sir Arthur Chance, Dr. Kidd (by Irish Branch Council).

Education Committee.—Sir Norman Moore, Sir F. Champneys, Dr. Howden (by English Branch Council); Dr. Mackay, Mr. Hodsdon, Dr. Knox (by Scottish Branch Council); Sir A. Chance, Sir B. Windle, Dr. Dixon (by Irish Branch Council).

Public Health Committee.—Sir A. Newsholme, Dr. Latimer, Sir J. Verrall (by English Branch Council); Dr. McVail, Dr. Littlejohn, Sir D. MacAlister (by Scottish Branch Council); Sir J. Moore, Dr. Magennis, Dr. C. Bigger (by Irish Branch Council).

Colonel King was reappointed Registrar, and the Council closed its session after passing votes of thanks to the President and to Sir Norman Moore for presiding.

[We are compelled to postpone publication of the account of the discussion on the report of the Departmental Committee on dental practice by unqualified persons.]

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following announcements are notified by the Admiralty: Surgeon Commander A. E. Weightman (ret.), O.B.E., has been promoted to the rank of Surgeon Captain in recognition of services rendered during the war. Surgeon Commander P. T. Nicholls to the *Valiant*. Surgeon Lieutenant Commander J. H. B. Martin to the *Mercey*. A. H. B. Richardson to the *Constance*. M. O. Masson to the *Revenge*. W. H. Edgar to the *Sandhurst*. Surgeon Lieutenant C. H. Symons to the *Erebus*. Surgeon Lieutenants (temporary) G. B. Lowe to the *Prince George*, H. W. Archer-Hall to the *Pembroke*, for R.N. Barracks, Chatham; A. L. Punch to the R.N. Hospital, Portland; H. Wilks to R.M. Division, Forton; N. K. Henderson to the *Vernon*, H. Morrison to R.M. Camp, Whitechurch, Tavistock; E. P. Brockman to the *Lion*, S. L. Higgs to Plymouth Hospital.

ARMY MEDICAL SERVICE.

Colonels R. L. R. Macleod, C.B., and N. C. Ferguson, C.M.G., retire on retired pay.

Temporary Colonels G. E. Gask, C.M.G., D.S.O. (Major R.A.M.C.T.F.), and W. H. Willcox, C.B., C.M.G. (Captain R.A.M.C.T.F.), relinquish their temporary commissions on reposting.

ROYAL ARMY MEDICAL CORPS.

Temporary Lieut.-Colonels J. E. H. Davies, D.S.O., and R. H. Mills-Roberts, C.M.G., relinquish their commissions on ceasing to serve with the Welsh Division Field Ambulance and retain the rank of Lieutenant-Colonel.

Major and Brevet Lieut.-Colonel W. Benson, D.S.O., to be acting Lieutenant-Colonel whilst specially employed.

The following relinquish the acting rank of Colonel on reposting: Major R. N. Woodley, D.S.O., Lieut.-Colonel and Brevet Colonel R. S. Hannay, C.M.G., D.S.O., Lieut.-Colonel H. G. Martin, C.M.G., Lieut.-Colonel H. M. Morton, D.S.O.

The following relinquish the acting rank of Lieutenant-Colonel on reposting: Majors P. C. T. Davy, C.M.G., J. M. M. Crawford, R. O. Wilson, Captain and Brevet Major F. T. Dowling, Captains H. G. Monteith, D.S.O., F. C. Davidson, M.C., J. D. Bowie, D.S.O., G. F. Allison.

The following relinquish the acting rank of Major on reposting: Captains R. A. Mansell, M.B.E., J. K. Gaunt, W. V. Corbett, J. la F. Lauder, D.S.O., M.C., temporary Captains V. D. C. Wakeford, B. Pickering, D. C. Taylor, M.C., T. H. Just, A. S. Wakely, J. R. Anderson, G. Clarke, R. S. Dewar, J. MacInnes, A. Feiling, E. Kidd, A. Topping, A. R. Elliott.

Major R. N. Hunt, D.S.O., to be acting Lieutenant-Colonel whilst commanding a medical unit.

Captain (acting Major) A. G. Wells, D.S.O., relinquishes the acting rank of Lieutenant-Colonel, and retains the acting rank of Major.

To be acting Majors: Captains W. T. Graham, T. K. Boney, Temporary Captains C. H. B. Booth, H. North, J. S. Williamson.

Temporary Captains relinquish the acting rank of Major: A. G. Caldwell, J. McF. Grier, A. H. Thomas, J. L. Rankine, W. S. McGowan. The notification regarding Captain E. Catford in the *London Gazette*, January 31st, 1919, is cancelled.

R. B. Rutherford, late temporary Captain (acting Major), is granted the rank of Major.

Lieutenants (temporary Captains) to be Captains: W. H. A. D. Sutton, W. D. Newland, M.C., L. S. C. Roche, M.C., C. L. Emmerson, F. A. R. Hacker.

L. B. Cane (Captain R.A.M.C.T.F.) to be temporary Lieutenant September 3rd, 1914 (substituted for notification in the *London Gazette*, September 9th, 1919).

Temporary Lieutenants to be temporary Captains: W. L. Stuart, W. J. G. Johnson, J. T. Reardon, D. B. Leitch, C. H. Ayles, E. R.

Wheeler, T. J. Richardson, S. E. Murray, S. F. Boyle, J. J. Hughes, J. Anastasi, C. W. Somerville, J. Russell, A. Bremner.

The following relinquish their commissions:—Temporary Lieut.-Colonel T. E. Sandall, C.M.G., Lieut.-Colonel James W. Alexander, D.S.O., T.F. Res. (on reposting). Temporary Majors, and retain the rank of Major: B. H. Slater, A. Stodart-Walker, C. Noon (on ceasing to serve with the Norfolk War Hospital). Temporary Captains, and are granted the rank of Lieut.-Colonel: J. R. C. Greenless, H. K. Wallace. Temporary Captains, and are granted the rank of Major: C. J. H. Sharp, M.C., R. J. Vernon, J. M. Clements, A. W. H. Donaldson, W. S. Stevenson, E. B. Sunderland, C. E. Murphy, H. V. Leigh, J. I. P. Wilson, R. E. H. Leach, W. Ward-Smith, R. J. T. Thornhill. Temporary Captains, and retain the rank of Captain: M. G. Dobbys, G. A. F. Heyworth, I. H. S. Hawes, P. Wood, H. G. Westropp, C. F. White, W. H. Sutcliffe, M.C., H. B. Scargill, C. W. Jenner, W. H. Brown, G. W. Thwaites, A. H. Smith, W. Sanderson, W. W. Wells, E. H. White, J. H. Drew, J. Wells, S. Upton, V. C. Montgomery, E. W. Sheaf, G. D. Shann, G. Young, J. Walker, A. J. Pirie, C. P. A. Stranaghan, G. W. Sudlow, R. D. Clayton, A. C. Strain, S. Nix, W. Trengaza, R. A. S. Sunderland, G. D. Watkins, D.S.O., M.C., S. L. O. Young, J. R. Anderson, P. C. E. d'E. Wheeler, D. C. Suttie, M.C., H. K. Waller, D. M. Stone, R. L. Worsley, H. L. W. Wemyss, H. H. Whaithe, J. A. West, D. Thomson, A. Sandison, W. J. B. Selkirk, J. J. Walshe, F. H. W. Brewer, C. H. Bannerman, J. H. Bogan, G. T. Birks, H. Brayshaw, H. B. Billups, C. Gibson, W. Bainbridge, E. Bromley, H. J. Hoile, H. R. Ford, W. T. Collier, M.C., M. H. Cane, A. T. Cunningham, M.C., R. H. Hadfield, R. W. H. Meredith, A. C. Price, J. Pender, G. F. P. Heathcote, M.C., C. B. Gervis, C. H. Gunson, W. Eardley, W. Cunningham (on account of ill health contracted on active service), J. D. Ryan, W. H. Steele, A. M. M. Roberts, G. R. Rew, E. H. Rainey, R. B. Radcliffe, A. H. Renboul, E. H. Roberts, M. S. Wood, J. K. Reid, T. R. Robertson, R. A. Shekleton, A. MacMillan, A. White, H. L. Messenger, M.C., H. D. McCall, W. R. Main, E. C. Rayner, A. S. Wakeley, W. Scott, M.C., J. B. Walker, G. S. Robertson, O. A. J. N. Muriset, H. H. Weekes, A. E. Stevens, G. M. Simpson, G. W. Twigg, M. Stewart, J. A. H. Vandervert, J. W. H. Boyd, E. D. McCrea, C. H. Hopwood, J. G. T. Thomas, M.C., C. G. Teall, W. C. Lodwidge, P. C. Litchfield, M.C., W. A. Shann, T. Warner, D. J. McRae, H. E. White, J. F. H. Stallman, M. Macleod, H. Pierce, H. Mackenzie, H. J. More, A. C. West, J. W. Thomas, P. Talbot, E. M. Mahon, R. M. Marshall, R. N. Salaman, W. B. Tannahill, W. E. Wallis, W. Wallace, A. Wilkin, J. H. Thompson, A. B. Sykes, E. R. Thompson. Temporary Lieutenants and retain the rank of Lieutenant: T. Wallace, L. N. H. Biggs, J. D. E. Williams, G. Ap Thomas, W. H. M. Smith, T. T. Smith.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to the unemployed list: Captains W. B. Dove, C. C. Fitzgerald, M.C. (R.A.M.C.).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain F. Oppenheimer to be acting Major from June 2nd, 1918, to March 11th, 1919.

Captain R. T. C. Robertson, D.S.O., relinquishes the acting rank of Lieutenant-Colonel on reposting.

Captains relinquish the acting rank of Major:—J. A. L. Wilson. On reposting: J. H. Beverland, M.C., A. B. Mitchell, M.C.

Lieutenants to be Captains: J. S. Mann, G. E. Tilsley, T. A. Butcher, J. C. Morris, W. A. Jackman, R. W. C. Ball, C. W. Hayward, E. F. Rabey, R. Hilliard, E. S. Rose, E. B. Verney.

Lieutenant T. Colley relinquishes his commission on account of ill health contracted on active service, and retains the rank of Lieutenant.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL SERVICE.

Temporary Lieut.-Colonel R. H. Macdonald, M.C., C.A.M.C., to be A.D.M.S. and to be acting Colonel whilst so employed.

Temporary Captain J. K. Mossman, M.C., C.A.M.C., to be A.D.A.M.S.

CANADIAN ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel P. Burnett, D.S.O., to command a Canadian General Hospital and to be acting Colonel whilst so employed.

Temporary Lieut.-Colonel E. L. Stone to be acting Colonel while commanding Canadian Stationary Hospital, Witely.

Temporary Majors C. F. L. Haszard and W. T. Lockhart to be acting Lieutenant-Colonels, and temporary Captains J. W. Hunt, J. S. Fitzsimmons, and J. D. Jones, to be acting Majors whilst employed at Canadian Stationary Hospital, Witely.

Temporary Major A. H. Taylor, M.C., to be acting Lieutenant-Colonel whilst O.C. Troops, H.M.A.T. Essauquo.

Temporary Major S. L. Walker to be acting Lieutenant-Colonel.

Temporary Captain G. H. Jardine to be temporary Major.

Temporary Captain (acting Major) A. J. Lomas retains the acting rank of Major while employed on Board of Survey—Inspection of Troopships.

Temporary Major (acting Lieut.-Colonel) R. St. J. MacDonald to be acting Colonel.

Temporary Captains to be acting Majors: D. S. Lewis (while employed with No. 3 Canadian General Hospital), H. G. Murray, A. Sterling, S. Sprague, R. F. Slater, J. H. McKee, G. S. Gordon, W. E. Gallo (while employed at Granville Canadian Special Hospital, Buxton), C. M. Spong (while employed as surgeon, No. 9 Canadian General Hospital), B. R. Almquist (while employed at Canadian Stationary Hospital, Etchinghill), D. A. MacLeod (while employed with No. 7 Canadian Stationary Hospital).

Temporary Captain (acting Major) F. J. Tees, M.C., to be acting Lieutenant-Colonel while employed at Granville Canadian Special Hospital, Buxton.

Temporary Captains H. D. L. Spence and W. J. Grant retire in the British Isles.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

Colonel A. M. Connell relinquishes his commission on account of ill health and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel (acting Colonel) W. R. Matthews, D.S.O., relinquishes his acting rank on vacating the appointment of A.D.M.S.

Major W. K. Pauli relinquishes his commission on account of ill health contracted on active service, and retains the rank of Major.

Captain A. E. Mackenzie relinquishes his commission on account of ill health caused by wounds and retains the rank of Captain.

Officers relinquish their acting rank on ceasing to be specially employed: Captain (Brevet Major—acting Lieut.-Colonel) D. W. Boswell, Captain (Brevet Major—acting Major) A. A. Jubb, Captains (acting Majors) F. P. Gibson, A. Ricketts, C.M.G.

1st London General Hospital.—Major G. E. Gask, C.M.G., D.S.O., is restored to the establishment on ceasing to hold a temporary commission in the A.M.S.

3rd Southern General Hospital.—Major E. Mallam and Captain J. F. Robinson are seconded for service with a special military surgical hospital.

4th Southern General Hospital.—Captain (Brevet Major) E. G. Smith is seconded for service at the Military Hospital, Devonport. Captain E. R. Clarke is restored to the establishment.

Sanitary Service.—Captain (acting Major) L. R. Tosswill relinquishes his acting rank on vacating the appointment of D.A.D.M.S.

APPOINTMENTS.

DAVIS, O. C. M., M.B. Brist., D.Sc. Lond., F.I.C., Honorary Out-patient Physician to Bristol Royal Hospital for Sick Children and Women.

GIBSON, Robert, M.D., Honorary Assistant Physician to Manchester and Salford Hospital for Skin Diseases.

SIMPSON, E. S., M.C., M.D. Edin., Medical Superintendent of the East Riding (Yorks) Asylum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—The following appointments have been made:—Senior Resident Medical Officer: Miss E. C. Lewis, F.R.C.S. House-Surgeons: Major Fitzpatrick, M.B., B.S.; Miss McKeown, M.B., B.S. Curator of the Museum: Miss Paterson, M.D.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

BROWN.—On May 27th, at Highcroft, Minchinhampton, Glos, the wife of Alfred Brown, M.D.—a daughter.

MARRIAGES.

COX—HOWARTH.—At Stand Church, Whitefield, Lancashire, on June 4th, 1919, by the Rev. J. H. Hopkinson, M.A. Camb., of Holy Trinity, Colne, George Lissant Cox, M.A., M.D. Camb., of Liverpool and 45, West Cliff, Preston, elder son of Mr. and Mrs. George H. Cox of Liverpool and Underfell, Bowness-on-Windermere, to Marguerita (Rita) Howarth, M.A. Manch., elder daughter of Mr. and Mrs. James Howarth, Stand Lodge, Radcliffe, Lancashire.

Silver Wedding.

PEARSON—HUGHES.—On June 5th, 1894, at Douglas Church, Parbold, Southport, by the Rev. Fred. R. Pearson, Rector of St. Alban's, Manchester, brother of the bridegroom, and the Rev. H. P. Owen-Smith, Vicar of the parish, Reginald Spencer Pearson, M.R.C.S. Eng., and L.R.C.P. Lond., younger son of the late Rev. James Pearson, M.A., F.R.A.S., Vicar of Fleetwood, to Minnie Savile, youngest daughter of Mr. W. Hughes of Wakefield, Yorks.

DEATHS.

FRANKLIN.—On June 2nd, at 18, High Street, Fareham, Hants, George Cooper Franklin, F.R.C.S., LL.D., M.B.E., formerly of Leicester, in his 74th year.

PARSONS-SMITH.—On May 28th, at Khartoum, suddenly, Eustace Macarthey Parsons-Smith, M.B., B.S. Lond., Captain R.A.M.C. (attached Egyptian Army), youngest son of the late Samuel Parsons-Smith of Addiscombe, Croydon, aged 34.

PROCTER.—On the 20th May, Thomas Procter, M.R.C.S., L.R.C.P., of Marshfield, Chippenham, aged 70 years.

DIARY FOR THE WEEK.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Thursday, 5 p.m., Croonian Lecture by Professor G. Elliot Smith, F.R.S.: The Significance of the Cerebral Cortex.

DIARY OF THE ASSOCIATION.

Date. Meetings to be Held.

JUNE.

- 11 Wed. South-Western Branch, Annual Meeting, Royal Devon and Exeter Hospital; Luncheon, 1 p.m. to 2.30 p.m.; Meeting, 3 p.m.; Dinner, 7.30 p.m.; Meeting of the Profession, 11.30 a.m.
- South Wales and Monmouthshire Branch, Annual Meeting, Llanelli, 3.30 p.m.
- 12 Thur. London: Propaganda Subcommittee, 11.30 a.m.
- Bedford Division, Annual Meeting, Bedford, 3 p.m.; Luncheon, 1.30 p.m.
- Newcastle-on-Tyne Division, Annual Meeting, Newcastle-on-Tyne, 8 p.m.
- 18 Wed. London: Finance Committee, 2.30 p.m.
- Dundee Branch, Annual Meeting, Dundee, 5 p.m.; Dinner, 7 p.m.
- Kent Branch, Annual Meeting, Chatham; Luncheon, 1 p.m.; Dockyard, 2 p.m.; Tea, 4 p.m.; Meeting, 4.30 p.m.; Dinner, 6.30 p.m.
- Surrey Branch, Annual Meeting, Croydon Town Hall; Luncheon, 1.15 p.m.; Dinner, 6.30 p.m.
- 19 Thur. Central Division, Birmingham Branch, 18, Bennett's Hill, 3.30 p.m.
- 20 Fri. East Yorkshire Division, Annual Meeting, Hull Royal Infirmary, 8.15 p.m.
- Leinster Branch, Annual Meeting, Dublin, 5 p.m.; followed by Meetings of Dublin and East Leinster Divisions.
- 25 Wed. London: Council Meeting.
- 26 Thur. Metropolitan Counties Branch, Annual Meeting, 429, Strand, W.C.2, at 4.30 p.m.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 14th, 1919.

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British Medical Association.

CURRENT NOTES.

Certificates under the Workmen's Compensation Act.

IN connexion with requests which are being made to members of honorary or paid medical staffs of voluntary hospitals to furnish certificates, etc., under the Workmen's Compensation Act, the Hospitals Committee of the Association wishes to call the attention of those concerned to the following decisions of the Representative Body:

- (i) That the furnishing of certificates in cases of injury to workmen is no part of the duty of members of the honorary or paid medical staffs of voluntary hospitals.
- (ii) That a certificate of attendance of a workman at hospital, containing no information as to the nature of the case, should not be regarded as a medical certificate.
- (iii) That any medical certificate expressing an opinion as to the fitness or unfitness of a patient to follow his employment, or any report on such cases, under the Workmen's Compensation Act, given by any member of the staff of a voluntary hospital, whether honorary or paid, should be paid for, and the fee should be received by the medical practitioner who signs the certificate. The minimum fee for a certificate should be 2s. 6d.
- (iv) That in the case of all medical reports under the Workmen's Compensation Act, given by the members of the staffs of voluntary hospitals, whether honorary or paid, the fee should not be less than £1 1s.
- (v) That in the case of all initial examinations with report under the Workmen's Compensation Act, given by a practitioner not as a member of the staff of any voluntary hospital, the fee should be not less than 10s. 6d.

The Solicitor's opinion in this matter, briefly stated, is, that if the employer sends an employee to a doctor with a definite request for a certificate in connexion with a claim for compensation he, the employer, is liable for the fee for such certificate; that it is better to insist on a written request from the employer; and that in the absence of such written request, the doctor should explain to the workman that he, the workman, is personally responsible for the fee.

Association Notices.

REPRESENTATIVE BODY, 1919-20.

NOTICE is hereby given to all concerned that pursuant to authority delegated by the Council in that behalf, the Organization Committee, on consideration of the membership figures contained in the Annual List of Members, 1919, has decided that the **Constituencies** for election of the Representative Body, 1919-20, under By-law 33 of the Association, shall be the same as for 1918-19, with the exception that the Caithness and Sutherland, Islands and Ross and Cromarty Divisions shall together form an independent Constituency, and the Inverness Division an independent Constituency.

Under By-law 35, the **Representatives and Deputy-Representatives** for 1919-20 must be elected not later than June 26th, and their names notified to the Medical Secretary not later than July 3rd, 1919.

The Council draws the special attention of all concerned to the fact that it is entirely within the discretion of the Constituency to decide whether the election of its Representative(s), Deputy-Representative(s), or both, shall be carried out by general meeting of the Constituency or by postal vote.

Honorary Secretaries who have not yet forwarded to the Head Office the names and addresses, and dates of election, of the Representatives and Deputy-Representatives appointed by their Constituencies, are requested to forward these particulars to the Medical Secretary as soon as possible.

ANNUAL REPRESENTATIVE MEETING, 1919.

The Annual Representative Meeting of the Association will be held in the Connaught Rooms, Great Queen Street, London, W.C.2, commencing on Thursday, July 24th, at 10 a.m.

The Provisional Agenda was published in the SUPPLEMENT of May 3rd, 10th and 24th, 1919.

ANNUAL CONFERENCE OF SECRETARIES.

The Annual Conference of Honorary Secretaries of Divisions and Branches of the Association will be held at 429, Strand, W.C.2, on the afternoon of Wednesday, July 23rd, 1919. Particulars will be announced later.

Honorary Secretaries are hereby invited to give notice of matters they desire should receive the attention of the Conference.

The Council reminds all concerned that, as in the case of members of the Representative Body, Council, and Committees attending meetings of those bodies, the first-class travelling expenses within the United Kingdom of Honorary Secretaries attending the Annual Conference of Secretaries are payable from the central funds of the Association.

ELECTION OF COUNCIL, SESSION 1919-20.

NOTICE is hereby given that the following have been duly elected members of the Council for the 1919-20 Session:

BRANCHES IN THE UNITED KINGDOM.

England.

North of England, North Lancashire, and South Westmorland Branches: Professor R. A. Bolam, M.D., Newcastle-on-Tyne.

Yorkshire Branch: Arthur Manknell, M.B., Bradford.

Lancashire and Cheshire Branch: Sir James Barr, M.D., F.R.C.P., Liverpool.

East York and North Lincoln and Midland Branches: G. K. Smiley, M.B., Derby.

Cambridge and Huntingdon, East Anglian, and South Midland Branches: E. O. Turner, M.B., Great Missenden, Bucks.

Birmingham and Staffordshire Branches: E. Noel Nason, M.D., Nuneaton.

North Wales, Shropshire and Mid Wales, and South Wales and Monmouthshire Branches: W. B. Crawford Treasuro, M.D., Cardiff.

Metropolitan Counties Branch: Harold S. Bendles, M.R.C.S., L.R.C.P., 234, Barking Road, E. H. B. Brackenbury, M.R.C.S.,

L.R.C.P., 21, Quernmore Road, Stroud Green, N. Sir Bertrand Dawson, G.C.V.O., C.B., 32, Wimpole Street, W. W. McAdam Eccles, M.S., F.R.C.S., 124, Harley Street, W.
Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches: No return.
Dorset and West Hants, South-Western, and Wiltshire Branches: Russell Coombe, F.R.C.S., Exeter.
Oxford and Reading and Southern Branches: D. A. Sheahan, M.D., Portsmouth.
Kent, Surrey, and Sussex Branches: S. Morton Mackenzie, M.B., Dorking.

Scotland.

Aberdeen, Northern Counties, Dundee and Perth Branches: C. S. Young, M.R.C.S., L.R.F.P.S. Glas., Dundee.
Edinburgh and Fife Branches: John Stevens, M.D., F.R.C.P.E., Edinburgh.
Glasgow and West of Scotland Branch (Four City Divisions): James R. Drever, M.B., Glasgow.
Glasgow and West of Scotland (Five County Divisions), Border Counties, and Stirling Branches: John Goff, M.D., Bothwell.

Ireland.

Connaught and South-Eastern of Ireland Branches: John Mills, M.B., Ballinasloe.
Leinster Branch: Wm. Doolin, F.R.C.S.I., Dublin.
Munster Branch: Joseph Giusani, M.D., Cork.
Ulster Branch: R. J. Johnstone, F.R.C.S., Belfast.

By Order of the Council,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

June 14th, 1919.

MEETING OF COUNCIL.

THE next Meeting of Council will be held on Wednesday, June 25th, in the Council Room, 429, Strand, London, W.C. 2.—By order,

W. E. WARNE,

Acting Financial Secretary and Business Manager.

June 5th, 1919.

BRANCH AND DIVISION MEETINGS TO BE HELD

DUNDEE BRANCH.—Dr. R. C. Buist, Honorary Secretary (166, Nethergate, Dundee), gives notice that the annual meeting of the Branch will be held in University College, Dundee, on Wednesday, June 18th, at 5 p.m. Business: Election of office-bearers; agenda of the Annual Representative Meeting. The Branch will meet for dinner in the Royal Hotel, Dundee, at 7 p.m., after the Branch meeting, when Dr. H. C. Colman will preside. The co-operation of the neighbouring Branches is hoped for, and members may invite private guests, including ladies. The dinner fee is 5s.—morning dress.

EAST YORK AND NORTH LINCOLN BRANCH: EAST YORKSHIRE DIVISION.—Dr. H. L. Evans, Honorary Secretary (101, Prince's Avenue, Hull), gives notice that the annual meeting of the Division will be held in the Board Room of the Hull Royal Infirmary, on Friday, June 20th, at 8.15 p.m. Business: Annual report, financial statement, election of officers, etc.

EDINBURGH BRANCH.—The annual meeting of the Edinburgh Branch will be held in the hall of the Royal College of Physicians, 9, Queen Street, Edinburgh, on Tuesday, June 24th, at 4 p.m. Business: Report of Branch Council; treasurer's financial statement; election of office-bearers for 1919-20; election to annual vacancy on the board of management of the Queen Mary Nursing Home; questions arising from the termination of the war emergency; proceedings of Scottish Committee, including consideration of scale of fees to medical practitioners under the Midwives (Scotland) Act. Scottish Board of Health Bill: (1) Report of action initiated by Branch Council; (2) formation of Scottish Ministry of Health Committee. National Insurance: (1) Report of Insurance Acts Committee and Memorandum of Insurance Commissioners; (2) expected early introduction by Government of a bill to raise the income limit for non-manual workers from £160 to £250. Annual report of Council and Annual Representative Meeting. Any other competent business. Tea will be served at 3.45.

KENT BRANCH.—Dr. E. A. Starling, Honorary Secretary (Chillingworth House, Tunbridge Wells), gives notice that the sixth annual meeting of the Branch will be held on Wednesday, June 18th, in the Rochester, Chatham, and Gillingham Division. The President-elect, Mr. Godfrey Taunton (Chatham), kindly invites members to luncheon at the Mayor's Parlour, Town Hall, Chatham, at 1 p.m. (There will be standing room for many cars at the side of the Town Hall.) At 2 o'clock the members will be conducted over the Dockyard, by invitation of Rear-Admiral Sir W. Goodenough, K.C.B. Tea will be provided at the Town Hall, by the inviting Division, at 4 p.m. At 4.30 the annual business meeting will be held in the Council Chamber, Town Hall, Chatham. Business: Report of the election of officers, annual report and financial statement, appointment of auditors, other business. Mr. Godfrey Taunton, will read a paper on "Chronic Intestinal Stasis in Children." The annual dinner will be held at the Bull Hotel, Rochester, at 6.30 p.m. (Tickets, 7s. 6d. each.) Wine will be provided by the local members.

LEINSTER BRANCH.—Mr. W. Doolin, F.R.C.S.I. (50, Fitzwilliam Square, Dublin), gives notice that the annual meeting of the Leinster Branch will be held in the Irish Offices of the Association, 16, South Frederick Street, Dublin, on Friday, June 20th, at 5 p.m., to be followed by meetings of the Dublin and East Leinster Divisions.

METROPOLITAN COUNTIES BRANCH.—A meeting of the Branch will be held at the Marylebone Presbyterian Church House, Upper George Street, Edgware Road, W.1, on Tuesday, June 17th, at 4 o'clock, to consider the documents circulated to the profession by the Insurance Commissioners and the Insurance Acts Committee (M. 25). Discussion will be directed to the answering of the following questions, which will be put to the vote by the president of the Branch, Dr. M. G. Biggs:

1. Do you approve of the proposed alteration of the income limit for non-manual workers?
2. Do you approve of the provision of additional services (consultant, specialist, laboratory, nursing) for insured persons?
3. Do you approve of these additional services being made available for other than insured persons?
4. Do you approve that such additional services should be contingent upon an extension of the provision of domiciliary treatment by general practitioners to these non-insured persons.

Non-members are invited to attend, and will be admitted on presentation of visiting cards. Mr. N. Bishop Harman and Captain Wilfred Kingdon, R.A.M.C. (Honorary Secretaries), give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C.2, on Thursday, June 26th, at 4.30 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of Council and of representatives of the Branch on the Central Council. (3) Alteration of a certain rule. (4) President's Address: Mr. W. McAdam Eccles, "Reconstruction in Medical Education."

OXFORD AND READING BRANCH.—The annual meeting of the Branch will be held at Oxford on Tuesday, July 1st. It has been arranged that the meeting should be entirely of a clinical character, and members wishing to show cases or read papers should communicate with Sir William Osler, 13, Norham Gardens, Oxford.

SURREY BRANCH.—Dr. A. E. Evans, Honorary Secretary (Eastcroft, Gloucester Road, Kingston Hill), gives notice that the sixth annual meeting of the Surrey Branch will be held, by invitation of the Croydon Division, on Wednesday, June 18th, at the Croydon Town Hall. The members will meet at luncheon at the Greyhound Hotel, at 1.15. There will be an excursion in the afternoon to Warlingham Mental Hospital, when the members will be the guests of Dr. E. S. Pasmore. The annual dinner will be held at the Greyhound Hotel at 6.30 p.m. Charge, 7s. 6d. Wines will be provided by the Croydon Division.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.—Dr. J. H. Frederick Way (151, Victoria Road North, Southsea) gives notice that the annual meeting of the Division will be held at the Medical Library, Southsea, on Thursday, June 19th, at 4 p.m. Business: Annual report, financial statement, election of officers, Annual Representative Meeting, general business.

Meetings of Branches and Divisions.

DORSET AND WEST HANTS BRANCH.
 The annual meeting of the Branch was held at Bournemouth on May 21st. The report of the Branch Council for 1918 was presented, showing an increase of membership of thirteen, and on the financial side a balance in hand of £25 3s. 1d. Rule 14 of the Branch, requiring candidates for election to the Association to furnish a certificate signed by two members of the Association, was repealed.

Election of Officers.—The election was announced of—

President: Dr. E. Kaye Le Fleming. *Vice-Presidents:* Dr. A. D. Edwards (Bournemouth), and Dr. J. E. Robinson (Dorchester). *Honorary Secretaries:* Dr. F. Fowler and Dr. P. A. Ross.

Presidential Address.—The President-Elect then took the chair, and, after proposing a vote of thanks to Dr. H. Simmons, the retiring president, delivered an address entitled "The organization of the profession." The following resolutions were carried unanimously:

1. That in pursuance of the line of action indicated in the address all local members of the profession be in future invited to attend meetings of the Branch.
2. That the address be printed and circulated to all local members of the profession.

Summer Meeting.—It was decided to hold the summer meeting at Wimborne.

SUSSEX BRANCH: HORSHAM DIVISION.

The annual meeting of the Division was held on June 5th. The Chairman (Mr. VERNON) formally announced the death of the late Secretary, Captain A. C. Sturdy, M.C., and a letter conveying the universal sorrow of the Division at the great loss sustained by his death was sent to Captain Sturdy's family.

The following officers were elected for the ensuing year:

Chairman: Mr. M. H. H. Vernon. *Vice-Chairman:* Mr. S. P. Matthews. *Secretary* (until other arrangements can be made): Mr. M. H. H. Vernon. *Representative on Branch Council:* Mr. J. Boxall. *Representative in Representative Body:* Dr. H. J. Milbank-Smith (Worthing).

OXFORD AND READING BRANCH.

A MEETING of the Oxford and Reading Branch Council was held on June 2nd at the Great Western Hotel, Reading. It was agreed that matters affecting the policy and organization of the Association were best dealt with by the constituent Divisions, and that the annual Branch meeting, to be held at Oxford on July 1st, should be entirely of a clinical character.

Members of the Oxford and Reading Divisions who wish to show cases or read papers should communicate at once with Sir William Osler, 13, Norham Gardens, Oxford.

INSURANCE.

MEETINGS OF THE PROFESSION.

OXFORD.

A GENERAL meeting of the medical profession in the Oxford Division was held at the Radcliffe Infirmary, on May 29th, with Dr. H. E. COUNSELL in the chair. Colonel W. COLLIER asked permission to bring forward a petition urging the Government to maintain the restrictions placed upon the sale of intoxicating liquor, for the reasons given in his letter published in the JOURNAL of June 7th. The petition was signed by all present.

Dr. E. W. M. HIGGS put forward the following as the two chief matters for discussion: The application for a grant for 1918 in respect of the increased cost of living for all insurance practitioners irrespective of the amount of their incomes; and the proposal to raise the income limit for insured persons from £160 to £250 per annum. After full discussion, in which Drs. JONES, SUSMAN, LARKING, GILFORD, YELF, HODGES, and Colonel BROOKS took part, it was decided by 17 votes to 4 to adopt the following resolution, which had been unanimously passed by the Reading Local and Medical Panel Committee:

That owing to the depreciation in the value of money, the income limit be raised to £250, provided that the capitation fee, which is now for the same reason inadequate, be increased at least in proportion.

The CHAIRMAN then read the proposals on p. 16 of Document M.25, issued by the Insurance Acts Committee. It was resolved not to agree to payments for special services being made a first charge on the pool. While in favour of the enlargement of panel work, the meeting objected to payment for this out of the pool; such charges, in its opinion, should be borne by the State. The meeting recorded its disagreement with paragraph 9, but unanimously agreed to the remainder of the summary and recommendations on p. 16.

WANDSWORTH.

A meeting, arranged by the Executive Committee of the Wandsworth Division, to which the whole of the medical profession resident in the boroughs of Wandsworth and Battersea were invited, was held on June 4th at Clapham Junction; Dr. STEEDMAN, Chairman of the Wandsworth Division, presided. In order to focus discussion it was agreed that the following questions should be put:

1. Do you approve of the proposed alteration of the income limit for non-manual workers?
2. Do you approve of the provision of additional services (consultant, specialist, laboratory and nursing) for insured persons under the suggested conditions as set out in the memorandum accompanying M. 25?
3. Do you approve of these additional services being made available for other than insured persons?

Question 1 was answered in the negative; it was thought that the £160 income limit now represented the £100 limit suggested by the British Medical Association during discussions of the Insurance Act in 1912. It was also considered a great injustice that manual workers earning two, three, or four hundred a year were entitled to medical service under the Act.

Question 2 was answered in the negative. The proposed intervention of a referee between practitioner and consultant was resented, as was also the suggested penalizing of the practitioner if a committee thought he called in a consultant too frequently. One speaker related that when he was studying at a post-graduate clinic in Berlin in 1905, his German fellow-students asked him in what special branch of medicine or surgery he intended to practise when he returned home. On his replying that he intended to practise as a general practitioner, they—thinking the panel service existed in England as in Berlin—said: "We cannot imagine why you have come here, because in Berlin the general practitioner (that is, panel practitioner) requires only the minimum of knowledge; any cases in which there is the slightest doubt we send to the district consultant, who diagnoses the case and prescribes the treatment." The narrator of the story thought that a system like this could only result in the lowering of the efficiency and status of the medical profession.

Question 3 was answered in the negative. It was thought that this could only lead to a national medical service for all, and the non-panel practitioners considered that most of these services were at present available through the voluntary hospitals and district nursing associations.

HORSHAM.

At the annual meeting of the Horsham Division held on June 5th, when Mr. VERNON was in the chair, it was resolved that the charges for contract attendance should in future be at the rate of 12s. yearly for adults and 8s. for children, and that practitioners in the area be recommended to adopt this scale in

future; that the fee for giving anaesthetics to soldiers recommended for dental treatment should be not less than 10s. 6d.

After careful discussion of the Memorandum and the Report M.25 issued by the Association, the meeting approved of the report (M.25) on revision of conditions of service, but regretted that no mention was made of the provision of dental treatment. It was decided to instruct the representative of the Division accordingly.

SHEFFIELD.

A meeting of the medical profession in Sheffield, convened by the Sheffield Division, was held on June 5th, to consider the proposed revision of the terms of service under the National Insurance Acts. Dr. FORBES, chairman of the Sheffield Panel Committee, presided.

Document M. 25 was discussed in detail, and the recommendations contained therein were approved, the one exception being in regard to the suggested limit to practitioners' lists. On this point an amendment was adopted on the motion of Dr. MYLAN, seconded by Alderman HARGREAVES, advising that the limit be 2,500. The opinion was strongly expressed, however, that whatever figure be determined on, this should be subject to revision in the event of an increase of the insured population.

GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION.

SUMMER SESSION, 1919.

DENTAL PRACTICE BY UNQUALIFIED PERSONS.

Discussion on the Report of the Departmental Committee.

On May 31st the Council considered certain recommendations from its Dental Education and Examination Committee on the recently issued report of the Committee appointed by the Lord President to inquire into the extent and gravity of the evils of dental practice by persons not qualified under the Dentists Act. In the absence of the President, Sir NORMAN MOORE presided.

Sir CHARLES TOMES said that the findings of the Departmental Committee would affect the constitution and procedure of the General Medical Council, and possibly also its finances. The formation of the Committee was a direct outcome of the representations made by the Council to the Lord President. The Council had advocated the total prohibition of unqualified dental practice, and it was a very important point that the Committee, half of whose membership was lay, should have adopted that principle. The bill which preceded the Act of 1858, when first introduced, simply prohibited practice by unregistered persons, but in the course of its delayed passage through Parliament the prohibition was modified into a prohibition of title. Now for the first time it was recognized that prohibition of practice was the essential thing. It was no secret that when the Departmental Committee began its labours those composing it were by no means all in favour of prohibition of practice, but they were brought round to that view by the evidence which they heard, and eventually adopted it unanimously. Prohibition of practice instead of mere prohibition of title had been adopted by a large number of our colonies and possessions, and by some foreign countries, and the measure had proved effective and capable of enforcement. It was felt, however, that Parliament could not be asked to prohibit practice unless, somehow or other, a sufficient number of recognized persons to meet the needs of the population were to be found.

That number did not exist in the dental profession. The number of qualified dentists was insufficient, and was not growing rapidly, the entry of freshly qualified men little more than replacing the deaths. Moreover, it was felt that the numbers could not be expected to increase rapidly unless the conditions of practice were made more attractive. In the meantime the Departmental Committee considered that there was no way by which an adequate number of dental practitioners could be speedily found other than by recognition of the more experienced of those practising without registration. It was suggested that five years' bona fide practice prior to the issue of the report should be *prima facie* title for admission to the Register. Sir Charles Tomes concluded by moving a recommendation on this point.

A long discussion on the form of words to be adopted then took place, several speakers desiring that the Council should not seem to lend itself by any verbal ambiguity to the recognition of unqualified practice. Ultimately, after

one or two amendments had been lost, the following form of words, slightly different from what was originally proposed by the Council's Dental Committee, was adopted:

That the Council should express its approval of the main general principle of the report—namely, that the practice of dentistry by unregistered persons be totally prohibited. Conditional on such prohibition being adopted, certain unregistered persons engaged in practice prior to the publication of the report (February, 1919), who fulfil certain conditions laid down in the report, should be admitted to registration.

Sir CHARLES TOMES then went on to refer to the omission from the report of an age limit below which the five years' bona fide practice should not be permitted to count. The rectification of that omission seemed very important to his committee, and therefore he proposed, and Mr. HOBSDON seconded, a recommendation embodying the view that the five years' bona fide practice should be subsequent to the attainment of twenty-one years of age, and that a corresponding limit as to age be applicable to those who had been in practice less than five years, and who were to be subject to a test examination; also that a corresponding age limit be required in the case of dental mechanics, for whom special provision was made in the report. This was agreed to.

Sir CHARLES TOMES moved another recommendation, expressing the view that a panel of examiners should be nominated by the Dental Licensing Bodies, as they alone had experience of the conduct of examinations in dentistry. From this panel examiners should be selected by a constituted authority to conduct the special examinations in question. The Departmental Committee had considered whether there should be an examination of all persons applying for registration (that is, those who had been in bona fide practice for five years), but the suggestion was not adopted, chiefly because of the extreme difficulty of dealing with such a large number of persons as would come forward at once for examination. The Council's committee thought that something should be said on the constitution of the examining panel. The words "constituted authority to conduct the special examinations" were purposely put in in view of the possibility that other constituted bodies than the Dental Licensing Bodies might be brought in.

Sir ARTHUR CHANCE, in seconding, said that the selection of examiners from one large panel to cover the United Kingdom would make for the uniformity of standard it was desirable to secure.

This recommendation was agreed to, as was a further recommendation to approve the formation and proposed constitution of an *ad hoc* committee to conduct the inquiry into claims for initial registration. Sir CHARLES TOMES said that to this *ad hoc* committee, according to the Departmental Committee's recommendations, the General Medical Council was to nominate three members and the Privy Council four, one of these four to be the chairman, who was to be a layman. This proposal of a lay chairman was due to the feeling that if a profession was to be given anything like a monopoly the public had the right to some representation on its governing bodies or working committees; that point of view was strongly urged by some of the witnesses who appeared before the Departmental Committee. Possibly not all the members of the General Medical Council were aware that under the terms of the Act laymen could be members of their body, though no layman had as yet been appointed.

Dr. LANGLEY BROWNE said that a mixed committee was not desirable, and moved an amendment which would have had the effect of making it a purely professional body, but he withdrew the amendment after Mr. HOBSDON had pointed out that this was purely a temporary committee to examine claims, and would cease to exist when the period allowed for applications for registration had expired.

Sir CHARLES TOMES moved a further recommendation relating to titles to be used by persons on the *Dental Register*. He said that whatever regulations were laid down the public would always stick to certain familiar designations. It did not appear practicable to the Departmental Committee or to the Dental Committee of the Council to preclude the men who were to be registered in respect of practice from using the title "dentist" or "dental practitioner"; the latter was a title which unregistered persons had not been permitted to use. All

other titles, however, were precluded so far as those registered in respect of practice were concerned, and it was thought reasonable to reserve expressly the title "surgeon dentist" or "dental surgeon" to those who possessed a registrable licence or diploma.

Dr. MAGENNIS moved an amendment excluding the description "dentist" from the titles of these newly registered persons, while permitting them the use of the term "dental practitioner." Dr. J. A. MACDONALD, in seconding, said that the less liberty that was given to these unqualified persons the better. Dr. MACKAY, on the other hand, thought that any man put on the *Register* should be allowed to use the same title as his neighbour on the *Register*. Mr. BARLING also foresaw difficulties arising out of a differentiation of titles among registered men. Dr. LANGLEY BROWNE remarked that doctors on the *Register* were not specially differentiated. Sir ARTHUR CHANCE thought that the balance must be fairly kept between the concessions it was necessary to make in order to secure the desired legislation and the just claims of the men who were duly qualified. It was quite futile to oppose the granting of the term "dentist" to these men, but, on the other hand, the term "dental surgeon" should be reserved for those duly qualified. Sir FRANCIS CHAMPEYNS instanced the parallel case of the midwives. Sir CHARLES TOMES said that on the Departmental Committee the representatives of the unregistered men did not themselves object to a distinction being made, though, of course, they could not pledge their "constituencies." The original suggestion of the Council was that these unqualified persons in practice should be placed on a special roll, and that suggestion appeared in the terms of reference of the Departmental Committee, but it was not adopted.

The amendment limiting the use of the term "dentist" to those possessed of a registrable licence or diploma was lost by a large majority. Dr. MACKAY thereupon moved another amendment deleting the reservation as to the titles of "surgeon-dentist" or "dental surgeon." Mr. BARLING seconded, while expressing his sympathy with the men who were registered by examination. Dr. J. A. MACDONALD said that one of the great purposes of the Council was to prevent unqualified practice, and while they were forced by circumstances to admit certain men to the *Register* in respect of practice, it was necessary to do justice to those others who had spent years and money upon getting their qualifications. Sir JOHN MOORE thought the original recommendation a reasonable compromise. Mr. PYE-SMITH thought that the amendment went too far, but that the distinctions might be expressed by the use or non use of letters after the name. The amendment was lost, and it was agreed that the Council should express the opinion:

That, while the title "dentist" or "dental practitioner" may be used by all those upon the *Register*, the restrictions suggested in the report as to the use of any other title whatever by those who are registered in respect of practice only should be enforced under penalty; and that the title of "surgeon-dentist" or "dental surgeon" should be expressly reserved for those who possess a registrable licence or diploma in dentistry or dental surgery.

Sir CHARLES TOMES moved the approval of the suggestion that a statutory board under the Council be established for the control of the dental profession, with the conditional right of appeal to the Council. This was a permanent committee to which it was proposed to transfer certain functions exercised by the Council. It would not only inquire into cases, as the Dental Committee did at present, but would adjudicate upon them, and the person affected would have the right of appeal to the Council subject to the Council granting leave. The board would consist of three members of the Council, five direct representatives elected by the dentists on the new register, and three nominees of the Privy Council, of whom two should be laymen.

Sir JENNER VERRALL did not believe that the new arrangement would expedite business. The Council would have to review the cases on appeal by the aggrieved persons, and then, on granting leave to appeal, would have to go through the cases again. He also objected to adjudication by a small statutory committee, and would also object when the proposal arose (as it would if this were carried) to deal with charges against doctors in the same way. He moved that the functions of the Committee should be limited to ascertaining the facts of the case, and

that the ultimate decision should rest with the Council; in fact, that the present procedure should be retained. The amendment was lost, and the original recommendation, slightly revised as the result of an amendment by Dr. Russell Wells, was carried as follows:

That the Council approve the suggestion that a statutory board under the Council should be established for the control of the dental profession, the General Medical Council having the right to hear an appeal should it see fit to do so.

It was further decided that the Council was not in a position to give effect to its previous resolution in favour of definite dental representation upon its own body, until it was known what steps would be taken to give effect to the recommendations of the Committee.

Sir CHARLES TOMES moved a recommendation approving the principle of an annual licensing fee being paid by registered dentists. This was a step further than the Council had ever gone before. One of the arguments in favour of the course was that it would compel an annual revision of the *Register*. A great many professions had an annual licensing fee.

Dr. LATIMER objected to the principle applied to a branch of the healing art, and foresaw that it would follow logically in the case of medical men.

The recommendation was lost on a show of hands by 7 votes to 13, and on a vote by roll call 9 voted in favour and 14 against.

Sir CHARLES TOMES moved a recommendation that a satisfactory dental curriculum could be framed on the basis of the suggestions set forth in the report of the Departmental Committee. A nominal reduction in the curriculum was recommended from four years to three, but coupled with this it was proposed that the preliminary subjects of chemistry, physics, and biology should be relegated to the period of secondary school education. Dr. MACKAY said that the proposal for a three years' course did not stand alone; along with it went the proposal that the preliminary examination should be of a higher standard and taken by youths not under 17.

The recommendation was agreed to.

Sir CHARLES TOMES moved a further recommendation in which strong objection was taken to the creation of a special class of "managers" of dental companies who would not be registered dentists. He said that the Council in 1907 did not succeed in its attempt to obtain legislative prohibition of the practice of medicine and dentistry by limited liability companies, which offered a means of evading the provisions of the law. When this matter came before the Departmental Committee the suggestion that there should be entire prohibition of dental practice by companies was the subject of a long discussion. The difficulty was urged of laying it down that companies should not do this thing while they were allowed to do everything else. It was recommended in the end that dental companies should be controlled, and that all members of the operating and managing staffs should be required to be registered dentists. There was, however, a weakening provision that directors or managers who had acted in that capacity for five years before the date of the report should continue to act in that capacity, and be put upon a special list in the *Register* which would not confer the right to practise as dentists. It was against this that the recommendation was aimed. Dr. MACDONALD thought that the recommendation appeared to give approval by inference to dental companies, but Sir CHARLES TOMES said that this was not so.

The recommendation was adopted, as was a recommendation welcoming legislation for providing for reciprocity of recognition with the Dominions and foreign countries, and another requesting the Lord President to afford the Council the opportunity of considering at an early stage any legislative proposals which the Government might contemplate for giving effect to the recommendations of the report.

The discussion on the whole subject occupied the Council for more than three hours.

DISCIPLINARY CASE.

Misleading Application and Testimonial.

The Council further considered the case of Isaac Bernard Barclay, M.R.C.S., L.R.C.P., D.P.H., who had been summoned at the November session on the charge of having falsely stated in his form of application for the post of tuberculosis officer to the Derbyshire County Council that

he had held certain resident appointments, and of having submitted to the Tuberculosis Committee of that Council a printed copy of a testimonial falsified in a material particular. The case was first dealt with on November 28th last (SUPPLEMENT, December 7th, 1918, p. 88), when the Council decided that Dr. Barclay was guilty of the facts alleged against him, but suspended its judgement.

Dr. Barclay now appeared, together with his counsel, Mr. Clement Davies, and produced letters from three medical men in the neighbourhood of Chatteris, Hunts (where since the first hearing he had taken a practice), testifying to his uprightness during the period they had known him; and his counsel expressed the defendant's great regret for the acts of which he had been found guilty, and which had brought upon him a double measure of shame in that he had had to part at a considerable monetary sacrifice from his former practice at Llanelli.

After the Council had discussed the case in private, the PRESIDENT announced its decision as follows:

Mr. Barclay: I have to announce to you that the Council has considered the statements that have been made on your behalf and the testimonials you have offered, and they have decided that they do not see fit to instruct the Registrar to erase from the *Medical Register* your name. The case is accordingly at an end.

The Council received in private a report by the Solicitor on the disciplinary powers of licensing bodies in cases of erasure from the *Medical Register*.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Surgeon Commander A. Maclean, D.S.O., promoted to the rank of Surgeon Captain. Surgeon Commander P. M. May to Royal Naval College and Hospital School, Greenwich. Surgeon Lieutenant Commanders H. B. Hill to the Medical Department, Admiralty; M. C. Masson to the *Revenge*, W. H. Edgar to the *Sandhurst*. Surgeon Lieutenant R. R. Pierce to the *Dauntless*. Surgeon Lieutenants (temporary) J. Kirker to the *Argonaut*, F. Gray to the *Silvio*, J. E. R. Ross to the *Prince George*, G. B. Lowe to the *Zembschke*, additional, for Royal Naval Barracks, Chatham; C. C. Colter to the Royal Naval Hospital, Haslar.

ARMY MEDICAL SERVICE.

Temporary Colonel C. S. Ryan, C.B., C.M.G., relinquishes his commission.
Temporary Colonel D. W. Carnall-Jones (captain R.A.M.C., T.F.) relinquishes his temporary commission on reposting.
Temporary Colonel Forbes Fraser relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel and Brevet Colonel William L'E. Eames, C.B. (Lieut.-Colonel A.A.M.C.), relinquishes his temporary commission.
Temporary Lieut.-Colonel Archibald M. H. Gray (Major R.A.M.C., T.F.) relinquishes his temporary commission on reposting.
Lieut.-Colonel J. A. Hartigan, C.M.G., D.S.O., to be acting Colonel whilst specially employed.

Majors C. T. Edmunds, D.S.O., and W. J. Weston, D.S.O., relinquish the acting rank of Lieut.-Colonel on reposting.

The following relinquish the temporary and acting rank of Lieut.-Colonel on reposting: Major and Brevet Lieut.-Colonels J. A. Anderson, C. W. Holden, Majors C. G. Thomson, D.S.O., T. E. Hart, D.S.O., Captain and Brevet Major J. A. Manifold, D.S.O.

Captains relinquish the acting rank of Major: E. Mathieson, R. H. Stevens, E. B. Sunderland, D. Cowin, L. D. Woods, W. de M. Peyton, W. C. Hallinan, M.C., J. Vallance (on reposting).

Temporary Captains to be acting Majors: A. E. Atkinson whilst commanding troops on a hospital ship; E. G. S. Cane and J. T. Grant whilst specially employed; F. C. Tibbs.

The notification in the *London Gazette* of May 9th, 1919, regarding Captain (acting Lieut.-Colonel) E. T. Burke, D.S.O., is cancelled.

A. G. Mossop, late temporary Captain, is granted the rank of Captain.

Temporary Lieutenants to be temporary Captains: W. M. Johnston, J. C. Bell, P. G. Beckett, J. M. H. Caldwell.

The following officers relinquish their commissions:—Temporary Majors, and retain the rank of Major: Alice Phillips, T. W. Eden, G. E. Waugh, R. T. Meadows, D.S.O., E. H. T. Nash on ceasing to serve with the Lord Derby War Hospital, A. R. Ferguson. Temporary Captain E. A. Gates, and is granted the rank of Lieut.-Colonel. Temporary Captains, and are granted the rank of Major: H. W. Scawin, A. A. Miller, R. T. Worthington, G. L. Keynes, E. B. Smith, B. Cox, H. Young, J. P. Duncan, F. N. Brown, A. E. Rayner (February 25th, 1919, substituted for notification in the *London Gazette*, May 1st, 1919), L. H. Guest, M.C., W. H. Hardy, L. D. Woods, J. S. Hall, D. I. Anderson, O.B.E., D. Murphy, F. T. Hill, R. A. P. Hill, A. J. Clayton (March 16th, 1919, substituted for notification in the *London Gazette*, April 22nd, 1919), James McDonnell, M.C. (March 25th, 1919, substituted for notification in the *London Gazette*, April 30th, 1919), J. F. M. Sloan, M.C. (March 28th, 1919, substituted for notification in the *London Gazette*, May 1st, 1919). Temporary Captains, and retain the rank of Captain: J. Thomarson, T. Jays, W. Stirling, D. C. Thomas, T. M. Sellar, W. W. Uttley, J. G. Thomson, E. P. Satchell, C. E. Jones-Phillipson, J. M. Smeaton, R. Richards, T. W. Sweetman, J. K. Small, J. Scott, F. L. Llewellyn, E. Allan, R. Stephens, H. F. W. Adams, C. I. McLaren, T. H. Scott, G. C. Nielson, E. A. Pywell, W. O'Brien, G. C. Scantlebury, C. Averill, T. D. Graham, N. H. M. Burke, J. H. Jones, A. J. B. Leckie, the Hon. Lennox, H. Lindley, G. H. Mould, J. F. Findlay, J. H. Moir, M.C., J. K. M. Dickie, R. R. Duncan, G. Miller, H. S. Dixon, S. O. Wilkinson, S. C. Dyke, J. Fraser, D. E. Derry, M.C., H. J. Couchman, F. Challans, G. C. Belcher, D. Fleck, J. J. K. Pentony, A. W. G. Clark, C. Price-Jones, H. D. Duke, R. M. Conbank, C. M. Brophy, M.C., J. Chisholm, G. H. Culverwell, J. C. Fox, K. L. Bates, A. Bremner, H. E. Bule, C. G. H. Moore, W. Cook, A. L. Birks, L. R. Lempiere, O.B.E., H. C. Colyer, A. S. Pindley, S. McNaughton, H. M. Gilbertson, J. L. Williams, G. Arthur, H. E. M.

Wall, A. H. Little, M. T. Cassidy, H. Carson, J. Mathewson, P. T. T. MacDonald, E. D. Adrian, A. Dennison, G. H. Kearney, H. E. Williams, F. Crooks, P. H. Bromhead, R. Wade, J. B. Aickin, S. W. Davies, H. R. Dew, S. E. Atkinson, J. F. Douse, R. Peart, J. F. Peart, J. H. Dible, C. Crerar, E. H. Wheeler, W. Edgecombe, S. Wigglesworth, A. Ashmore, A. G. Maitland-Jones, W. J. Dunlop, G. A. Crowley, U. Marks, H. V. Forster, M.C., D. Duncan, P. G. Leeman, H. M. Johnston, C. B. M. Aldridge, F. Athill, J. Beatty, J. C. Lavertine, S. D. Bridge, W. W. Walker, J. G. Brown, W. H. Brodie, J. C. Mowat, H. H. Fairfax, E. F. Edmunds, L. Walton, W. Baxter, W. G. Lidderdale, A. B. McMaster, J. Colgan, A. H. James, W. B. Heywood, J. C. N. Harris, F. O'Neill, G. H. Adam, J. M. McLachlan, A. Walbrugh, R. McC. Service, T. H. Just, W. R. Honeyburne, H. A. Gillespie, H. G. Wilson, E. J. B. Moynihan, E. N. Snowden, G. H. Thompson, T. MacKinlay, A. G. C. Plumley, A. M. Jones, W. J. Melvor, R. N. West, W. W. Thomson, E. Banks, L. R. Hill, J. G. Greenfield, H. Smith, E. H. Fennessey, J. A. Fretton, G. Hargreaves, D. S. Graham, A. E. Clark, B. H. Palmer, D. Gillies, F. Anderson, H. L. Taylor, H. A. Pallant, D.S.O., M.C., R. Anderson, C. J. McCarthy, C. W. Budden, J. McGibbon, R. W. Gemmill, G. F. C. Healy, C. A. R. McCay, G. Jefferson, E. A. Bernard, N. Grelhier, M.C., G. B. McCaul, M.C., J. Good, C. E. Lord, W. W. Ingram, H. M. Gillespie, M.C., G. M. Campbell, M.C., C. E. O'Keefe, J. B. Mackenzie, C. B. Pearson, C. J. Stanley, T. J. H. Hoskin, J. S. Webster, V. Townrow, G. P. G. Beckett, F. S. Machin, A. Wylie, E. P. Carey, W. G. R. Macaulay, J. G. Leslie, J. Campbell, H. T. P. Young, W. E. David, M.C., G. M. Brunton, G. A. Johnstone, W. Rotherham, A. H. Firth, D. Broderick (on ceasing to serve with Whips Cross War Hospital), J. A. Wood, J. A. B. Rosher, A. Evans, E. A. C. Swainson, A. B. Leakey (on ceasing to serve with the Home Hospitals Reserve). Temporary honorary Captains and retain the honorary rank of Captain: H. Nockolds, D.S.O., on ceasing to be in charge of Queen Alexandra's Hospital, Malo-les-Bains; C. G. L. Wolf. Temporary Lieutenants and retain the rank of Lieutenant: B. Morrison, J. Eadie, O. Eccles, P. C. MacRobert, O. Marriott, R. C. McLaughlin, C. A. Palmer, A. Bisset (March 16th, substituted for notification in the *London Gazette*, April 10th, 1919), H. W. Freer, N. S. Twist.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Major A. W. Iredell to be Lieutenant-Colonel.
Transferred to the unemployed list: Major R. R. Fasson, Captains C. H. Webb, J. D. Bridger.
Granted temporary commissions:—As Captain: E. A. Lumley. As Lieutenants: J. Fanning, C. T. O'Neill.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain A. J. Gibson, D.S.O., relinquishes the acting rank of Lieutenant-Colonel.
Captain (acting Major) A. W. Russell, M.C., to draw the pay and allowances of his acting rank from September 18th, 1918, to January 31th, 1919, inclusive.
Captains relinquish the acting rank of Major: W. Dunlop, O.B.E., W. R. Blore, M.C., R. Green, E. A. Wilson.
Captain A. J. Beveridge to be acting Major from February 16th to April 27th, 1919.
Captain A. McCa. Blackwood relinquishes his commission.
Captain R. L. Portway relinquishes his commission on account of ill health contracted on active service, and retains the rank of Captain.

GENERAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Major A. F. Heaton, on ceasing to be employed, is granted the rank of Lieutenant-Colonel.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL SERVICE.

To be D.D.M.S.: Temporary Colonel H. A. Chisholm, C.M.G., D.S.O. C.A.M.C., temporary Lieut.-Colonel F. C. Bell, C.A.M.C.
To be A.D.M.S.: Temporary Major R. M. Gorssline, D.S.O., C.A.M.C.
To be D.A.D.M.S.: Temporary Major R. M. Shaw, C.A.M.C.
Temporary Captains: H. Coppinger, C.A.M.C., and K. H. Van Norman, C.A.M.C.

SOUTH AFRICAN MEDICAL CORPS.

Temporary Colonel P. G. Stock, C.B. (Colonel S.A.M.C.), relinquishes his commission on reposting.
Temporary Captain C. F. Beers relinquishes his commission and retains the rank of Captain.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel (acting Colonel) E. A. Wraith, D.S.O., relinquishes his acting rank on vacating the appointment of A.D.M.S.
Officers relinquish their acting rank on ceasing to be specially employed: Majors (acting Lieut.-Colonels) M. B. Ray, D.S.O., A. J. Riddett, G. F. Whyte, W. Durnan (March 25th, 1919—substituted for notification in the *London Gazette*, May 8th, 1919). Captain (acting Lieut.-Colonel) M. S. Double (March 16th, 1919—substituted for notification in the *London Gazette*, April 7th, 1919). Captains (acting Majors) E. J. Boome, W. P. Ferguson (March 7th, 1919—substituted for notification in the *London Gazette*, March 25th, 1919), A. A. Hingston, J. A. Bell, M.C., A. P. Thomson, M.C., W. V. Wood, M.C., R. V. C. Ash, M.C., H. Shield, M.C., H. A. Lucas.
Captain (acting Major) S. R. R. Matthews relinquishes his acting rank on vacating the appointment of D.A.D.M.S.
Captain M. Conlans, D.S.O., to be a D.A.D.M.S., and to be acting Major whilst so employed.
Captains (acting Majors) to be acting Lieutenant-Colonels whilst specially employed: A. C. Pearson, M.C., J. W. Craven, M.C., R. A. Stark, M.C.
Captain (acting Lieutenant-Colonel) W. Duncan to be Major and to retain his acting rank whilst specially employed.
Captain (acting Major) F. J. B. Robson relinquishes his commission on account of ill health contracted on active service.
Captains O. Gleeson, J. K. Syms, and S. Rutherford relinquish their commissions on account of ill health contracted on active service and retain the rank of Captain.
Lieutenant J. H. Charchill to be Captain.
2nd *London Sanitary Company*.—Lieutenant G. M. Till to be Captain.
2nd *London General Hospital*.—Captain H. F. Lancaster is seconded for service with the Hampstead Military Hospital.

3rd *London General Hospital*.—Lieut.-Colonel W. Pasteur, C.M.G., is restored to the establishment on ceasing to hold a temporary commission in the A.M.S.

4th *London General Hospital*.—Captain (acting Lieutenant-Colonel) A. J. Jex-Blake relinquishes the acting rank of Lieutenant-Colonel, and reverts to the acting rank of Major with precedence from April 15th, 1917, and remains seconded, November 11th, 1918.

1st *Scottish General Hospital*.—Captain H. E. Smith is restored to the establishment.

2nd *Scottish General Hospital*.—Major (acting Lieut.-Colonel) J. D. Comrie relinquishes his acting rank on ceasing to be specially employed, and remains seconded.

1st *Southern General Hospital*.—Captain (acting Major) F. D. Marsh, M.C., relinquishes his acting rank on ceasing to be specially employed, and remains seconded.

2nd *Southern General Hospital*.—Captain A. R. Short is restored to the establishment.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Major J. G. Martin from attached to units other than medical units to be Major (December 17th, 1918, substituted for notification in the *London Gazette*, January 9th, 1919).

The announcements regarding Lieut.-Colonel J. Young, Majors A. A. W. Merrick, E. E. Dyer, J. H. Harris, and E. B. Waggett, D.S.O., Captain (Brevet Major) W. J. Wilson, Captain J. J. S. Lucas, Captain W. D. Carruthers, Captain (acting Major) J. G. Cooke, and Captain G. Scott, which appeared in the *London Gazette* of February 13th, 1918, January 2nd, 1919, December 31st, 1918, January 9th and 18th, 1919, December 20th and December 17th, 1918, January 18th, 1919, and January 6th and January 9th, 1919, respectively are cancelled.
The announcements regarding Major J. G. Martin in the *London Gazette*, January 9th and May 17th, 1919, are cancelled.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGES.

BROOKS—RATCLIFF-GAYLARD.—On June 5th, at All Saints' Church, Birkenhead, by the Rev. J. E. Woodward, M.A., Vicar of St. Paul's, Birkenhead, and the Rev. A. E. Crowder, M.A., Vicar of the parish, Reginald Arthur Guernsey Brooks, elder son of Mr. and Mrs. Arthur Brooks of Adelaide House, Sandown, Isle of Wight, to Edith Alice Louise, only daughter of Dr. and Mrs. Ratcliff-Gaylard of Clifton Park, Birkenhead.

GAUNTLETT—GERRARD.—At the Barclay Church, Edinburgh, on June 4th, by the Rev. R. Sangster Anderson, D.D., assisted by the Rev. J. A. Hughes, M.A., The Rectory, North Berwick, Eric Gerald Gauntlett, D.S.O., C.B.E., M.B., F.R.C.S., of King's College Hospital, London, late Lieut.-Colonel R.A.M.C.(T.F.), Consulting Surgeon to the Salonica Forces, younger son of Mr. and Mrs. T. Lee Gauntlett, 37, Howard's Lane, Putney, London, S.W., to Hilda Mary Gerrard, R.R.C., late V.A.D. Salonica, eldest daughter of Mr. and Mrs. James Gerrard, 24, Hermitage Gardens, Edinburgh. At home, Langham Hotel, Portland Place, London, W., on Thursday, June 26th, 3.30 to 5.30 p.m.

JENKINS—BEBB.—Recently, Naunton R. Jenkins, M.R.C.S.(Eng.), L.R.C.P.Lond., to Nancy (Sister) Bebb, youngest daughter of Mr. and Mrs. H. Bebb, Carno, Montgomeryshire.

MURPHY—GREGORY.—At Basra, Mesopotamia, on March 4th, 1919, by the Rev. H. C. B. Stone, S.C.F., George Reid Murphy, M.B., Ch.B. Aberd., Captain R.A.M.C.(S.R.), to Catherine Ellen Gregory, T.F.N.S. (St. Thomas's Hospital, London).

DEATH.

FAGGE.—On June 11th, at Lutterworth, Herbert William Fagge, M.R.C.S., L.S.A., aged 75.

DIARY FOR THE WEEK.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday and Thursday, 5 p.m., Croonian Lectures by Professor G. Elliot Smith, F.R.S.: The Significance of the Cerebral Cortex.

ROYAL SOCIETY OF MEDICINE.—Tuesday, 5 p.m., General Meeting of Fellows. Thursday, 8.30 p.m., Occasional Lecture, Dr. Louis Sambon: The Sanitation of Tropical Lands (West Indian Experience). Section of Dermatology: Thursday, 5 p.m. Cases. Section of Disease in Children: Friday, 4.30 p.m. Cases. Dr. Eric Pritchard: Abscess of the Liver.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
JUNE.	
17 Tues.	Metropolitan Counties Branch, Presbyterian Church House, Upper George Street, Edgware Road, W.1., 4 p.m.
18 Wed.	London: Finance Committee, 2.30 p.m. Dundee Branch, Annual Meeting, Dundee, 5 p.m.; Dinner 7 p.m. Kent Branch, Annual Meeting, Chatham; Luncheon 1 p.m.; Dockyard, 2 p.m.; Tea, 4 p.m.; Meeting, 4.30 p.m. Dinner, 6.30 p.m. Surrey Branch, Annual Meeting, Croydon Town Hall Luncheon, 1.15 p.m.; Dinner, 6.30 p.m.
19 Thur.	Central Division, Birmingham Branch, 18, Bennett's Hill, 3.30 p.m. Portsmouth Division, Annual Meeting, Southsea, 4 p.m.
20 Fri.	East Yorkshire Division, Annual Meeting, Hull Royal Infirmary, 8.15 p.m. Leinster Branch, Annual Meeting, Dublin, 5 p.m.; followed by Meetings of Dublin and East Leinster Divisions.
24 Tues.	Edinburgh Branch, Annual Meeting, Edinburgh, 4 p.m.
25 Wed.	London: Council Meeting.
26 Thur.	Metropolitan Counties Branch, Annual Meeting, 425 Strand, W.C.2, at 4.30 p.m.

JULY.

1 Tues. Oxford and Reading Branch, Annual Meeting, Oxford.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 21st, 1919.

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British Medical Association.

CURRENT NOTES.

Reconstruction of R.A.M.C.(T.F.).

THE War Office has informed the British Medical Association that it has been decided to call a Committee of Royal Army Medical Corps Territorial Force Officers to consider and make recommendations for the reconstruction of the medical services of the Force, and has invited the Association to send a member to be present at the meetings of this Committee. The Association has appointed Major E. G. Annis, R.A.M.C.(T.F.), who is a member of the Naval and Military Committee of the Association, to attend the meetings as its representative.

Motor Cars for Medical Men.

A current note on June 7th briefly announced that the Priority Department of the Ministry of Pensions had been closed, and that no assistance could now be given by the Ministry to medical practitioners desiring permits for the purchase of new motor cars or the execution of repairs. Dr. James O'Grady, late Surgeon Lieutenant R.N., writes to ask whether steps are being taken to assist a demobilized doctor to obtain a car. At the present time, he says, it is impossible to obtain a new car at a reasonable price owing to the extraordinary waiting lists that manufacturers and agents have created. Consequently the general practitioner, to whom a car is a necessity for the proper working of his practice, is placed at a great disadvantage. Since applications for help to the Ministry of Munitions now appear to be useless, the British Medical Association is issuing a request to motor manufacturers generally, asking them to give preferential consideration to all those—including doctors—who require cars for purposes of public utility as distinct from those who merely need pleasure cars. In this connexion readers may be interested to hear of the War Motors Association, whose temporary offices are at 65 and 66, Chancery Lane, London, W.C. This has been formed to purchase from the Disposal Board cars and lorries not needed for further military service, and to dispose of such surplus vehicles mainly to ex-service men. We understand that this association has agreed with the Government to make no profits on the re-sale of vehicles to service men beyond the 2½ per cent. allowed for administrative expenses, and that the general policy of the association is supervised by an advisory council of prominent public men. Under arrangements made with the Disposal Board lorries, cars, and motor cycles are being purchased, and an undertaking has been given to the Board that the vehicles will be distributed to wounded and disabled officers and men, to medical officers returning to their practices, and to demobilized men needing motor vehicles for business purposes.

Association Notices.

MEETING OF COUNCIL.

THE next Meeting of Council will be held on Wednesday, June 25th, in the Council Room, 429, Strand, London, W.C. 2., at 10.30 a.m.—By order,

W. E. WARNE,
Acting Financial Secretary and Business Manager.

June 5th, 1919.

SCHOLARSHIPS AND GRANTS IN AID OF SCIENTIFIC RESEARCH.

SCHOLARSHIPS.

THE Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows:

1. An *Ernest Hart Memorial Scholarship*, of the value of £200 per annum, for the study of some subject in the department of State Medicine.
2. *Three Research Scholarships*, each of the value of £150 per annum, for research into some subject relating to the causation, prevention, or treatment of disease.

Each Scholarship is tenable for one year, commencing on October 1st, 1919. A Scholar may be reappointed for not more than two additional terms.

The Conditions of the award of Scholarships are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

GRANTS.

The Council of the British Medical Association is also prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

Applications.

Applications for Scholarships and Grants for the year 1919-20 must be made not later than Saturday, June 28th, 1919, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX,
Medical Secretary.

429, Strand, London, W.C.2,
May 24th, 1919.

BRANCH AND DIVISION MEETINGS TO BE HELD

CAMBRIDGE AND HUNTINGDON BRANCH.—Dr. Edward H. Ezard, Honorary Secretary (74A, Trumpington Street, Cambridge), gives notice that the seventy-fifth annual general meeting of the Branch will be held at Sidney Sussex College, Cambridge (by kind permission of the Master and Fellows) on Tuesday, July 1st. Programme:—2.30 p.m., Business: (a) Balance sheet and report of Branch Council; (b) election of officers and Branch Council; (c) other business, if any. 3.30 p.m.: General meeting, open to members, their wives and invited guests, when Professor F. Gowland Hopkins will give an address on the bearing of recent researches on the feeding of infants and children. 4 p.m.: The President and Mrs. Grove invite members, their wives and guests, to tea in the Fellows' garden. Each member intending to be present is requested to notify the Secretary not later than Tuesday, June 24th, stating if he will be accompanied by a lady.

EAST ANGLIAN BRANCH.—Dr. B. H. Nicholson (East Lodge, Colchester) gives notice that a general meeting of the East Anglian Branch will be held at Ipswich on July 10th, to consider the date most suitable for carrying into effect the dissolution of the East Anglian Branch. Members wishing to read a paper or show cases should communicate at once with Dr. Nicholson, Colchester.

EDINBURGH BRANCH.—The annual meeting of the Edinburgh Branch will be held in the hall of the Royal College of Physicians, 9, Queen Street, Edinburgh, on Tuesday, June 24th, at 4 p.m. Business: Report of Branch Council; treasurer's financial statement; election of office-bearers for 1919-20; election to annual vacancy on the board of management of the Queen Mary Nursing Home; questions arising from the termination of the war emergency; proceedings of Scottish Committee, including consideration of scale of fees to medical practitioners under the Midwives (Scotland) Act. Scottish Board of Health Bill: (1) Report of action initiated by Branch Council; (2) formation of Scottish Ministry of Health Committee. National Insurance: (1) Report of Insurance Acts Committee and Memorandum of Insurance Commissioners; (2) expected early introduction by Government of a bill to raise the income limit for non-manual workers from £160 to £250. Annual report of Council and Annual Representative Meeting. Any other competent business. Tea will be served at 3.45.

METROPOLITAN COUNTIES BRANCH.—Mr. N. Bishop Harman and Captain Wilfred Kingdon, R.A.M.C. (Honorary Secretaries), give notice that the annual general meeting of the Branch will be held at 429, Strand, W.C.2, on Thursday, June 26th, at 4.30 p.m. The business will be: (1) Report of scrutineers as to the election of new officers. (2) The annual reports of Council and of representatives of the Branch on the Central Council. (3) Alteration of a certain rule. (4) President's Address: Mr. W. McAdam Eccles, "Reconstruction in Medical Education."

OXFORD AND READING BRANCH.—The annual meeting of the Branch will be held at Oxford on Tuesday, July 1st. It has been arranged that the meeting should be entirely of a clinical character, and members wishing to show cases or read papers should communicate with Sir William Osler, 13, Norham Gardens, Oxford.

SOUTHERN BRANCH.—Dr. A. A. MacKeith, Honorary Secretary (66, Howard Road, Southampton), gives notice that the annual meeting of the Branch will be held at the Royal Hants County Hospital, Winchester, on Tuesday, July 8th, at 2 p.m., when Dr. Alfred Cox, O.B.E., Medical Secretary, will give an address. The President invites all members to tea at the close of the meeting. The annual golf competition will take place as usual.

SUSSEX BRANCH.—Dr. A. M. Daldy, Honorary Secretary (14, Palmeira Avenue, Hove), gives notice that the sixth annual general meeting of the Sussex Branch will be held in the Old Ship Assembly Rooms, Ship Street, Brighton, on Wednesday, June 25th, at 2 p.m. Agenda: Election of officers; annual report with financial statement; any other business. President's address on the lessons of military experience as applied to civil practice, to be followed by a discussion. Demonstration of cases and appliances at the Pavilion Military Hospital by Major Fitzmaurice-Kelly, R.A.M.C., at 3.30 p.m. The President-elect (Captain Robert Sanderson, R.A.M.C.T.F.), will entertain members attending the meeting to luncheon at the Old Ship Hotel, Brighton, at 1 p.m. Tea will be provided by the Brighton members at 4 p.m. in the grounds of the Pavilion Military Hospital, by kind permission of the Commanding Officer.

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH: BURNLEY DIVISION.

The annual meeting of the Burnley Division was held on June 6th, when the following officers were appointed:

Chairman: Dr. J. W. Clegg. *Vice-Chairmen:* Dr. A. E. Bird, Dr. A. E. Norrington. *Honorary Secretary:* Dr. James Gardner. *Representative in Representative Body:* Dr. A. E. Norrington. *Deputy Representative in Representative Body:* Dr. James Gardner. *Representative on Branch Council:* Dr. J. M. Ferguson.

The report of the Executive Committee for 1918-19 recounted the action taken by the Division in interviewing parliamentary candidates during the election. Two members had been nominated for the Medical Consultative Council for submission to the Minister of Health, and two appointed to act on the Juvenile Organization Committee dealing with the employment

of young people. Numerous matters of local interest had also received attention, including infantile mortality and the employment of married women.

LANCASHIRE AND CHESHIRE BRANCH: WARRINGTON DIVISION.

The annual meeting of the Warrington Division was held on June 3rd. The officers, Branch Representative, and executive were re-elected. It was decided to notify the public in the area that there would be an increase of 50 per cent. on pre-war medical fees. The notice has appeared in the two local papers.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.

The annual meeting of the Marylebone Division took place on May 15th, when the following officers were elected:

Chairman: Dr. C. O. Hawthorne. *Vice-Chairman:* Sir James Galloway, K.B.E., C.B. *Honorary Treasurer:* Major McAdam Eccles. *Honorary Secretaries:* N. Bishop Harman, C. Edward Wallis. *Additional Members of the Executive Committee:* Colonel Maynard Smith, Dr. B. F. Hartshorne, Dr. Gordon Holmes.

The annual report, which was adopted, showed that the membership had increased during the year from 438 to 445.

It was decided to hold a special meeting of the Division to discuss the proposed raising of the income tax limit for insurance cases.

WILTSHIRE BRANCH: TROWBRIDGE DIVISION.

The annual meeting of the Division was held at Trowbridge on May 24th, when Dr. F. E. TAYLOR was in the chair.

The financial statement was read and approved.

The following officers were elected:

Chairman: Dr. Lawrence. *Vice-Chairman:* Dr. Locket. *Honorary Secretary:* Dr. Bond. *Representatives on Branch Council:* Drs. Rumbold, Tubb Thomas, and Lawrence.

The meeting recommended that the fee for operations for school children at cottage hospitals should be 30s., with an additional fee of 5s. to the hospital.

The Annual Report of the Central Council was considered and approved. The suggestion headed "British Medical Association Lecturers on Clinical and Scientific Subjects" was referred to the Executive Committee.

The Secretary was instructed to submit to the Medical Secretary as recommendations for nomination to the Consultative Council under the Ministry of Health Bill the names of Drs. Flemming and Locket.

The following resolution regarding certificates for the War Pensions Committee was adopted:

That many complaints having been made that no fee is paid by the local War Pensions Committee for medical certificates this meeting considers that when any examination or opinion is asked for a fee of 5s. should be paid by the Ministry of Pensions.

The Secretary was instructed to send a copy of this resolution to the Secretary of the County War Pensions Committee.

The meeting considered that a fee of one guinea should be paid to medical referees under the National Insurance Act for each examination and report, with mileage at the rate of 1s. per mile each way, over two miles.

INSURANCE.

MEETINGS OF THE PROFESSION.

COUNTY OF FIFE.

A MEETING of medical practitioners in the county of Fife was held at Kirkcaldy on June 6th. The meeting considered document M.25 of the Insurance Acts Committee, and decided to support limitation of lists, more frequent change of doctor, abolition of "floating sixpence."

The meeting was strongly opposed to the method suggested for new entrants into practice, fresh issue of medical cards, medical referees, and the proposal to raise the income limit.

COUNTY OF FORFAR.

At a meeting of panel practitioners in the area of Forfarshire, held at Forfar on June 4th, it was decided to support the National Defence Trust of the British Medical Association for one year. The meeting approved generally the suggestions contained in document M.25, but unanimously resolved to make an emphatic protest against the proposal dealing with the raising of the income limit from £160 to £250.

GLOUCESTER.

A meeting of medical men practising in Gloucester (city and county) was held at the Royal Infirmary, Gloucester, on May 29th, to discuss circular M.25. Dr. J. A. BELL presided over a fair attendance from all parts of the county, and Dr. A. J. Campbell, representative on the Insurance Acts Committee, was present.

The CHAIRMAN explained the objects of the meeting, and suggested that as time would not permit going through M.25 paragraph by paragraph, the summary on p. 26 should be taken and discussed. This was agreed to. Approval was given to paragraphs i, ii, iii, vi, vii, xii, xiii, and xv. After long discussion paragraph v was accepted. There was some difference of opinion with regard to the limitation of panel lists for individual practitioners; the majority considered there should be no limit. Paragraph ix was disapproved. The meeting considered that the machinery for keeping the lists should be altered, but did not think the remedies suggested in paragraph x would be

successful. The meeting considered that the existing agreement between the practitioner and the Insurance Committee should stand, with such alterations as might from time to time be suggested by the Conference of Panel Committees. After a long discussion on paragraph xvi (additional services) it was agreed that the scheme of Dr. Middleton Martin, M.O.H. for Gloucestershire, should be recommended, subject to a satisfactory arrangement with regard to remuneration being arrived at. (Dr. Martin's scheme was described in the *BRITISH MEDICAL JOURNAL*, February 22nd, 1919, p. 218.)

STOKE-ON-TRENT.

A meeting of medical practitioners was held in the Town Hall, Stoke-on-Trent, on May 22nd, to consider document M. 25 of the British Medical Association. The meeting having resolved that the present capitation fee was not adequate, approved generally the suggestions contained in the report.

SURREY.

The Surrey Local Medical and Panel Committee met on May 30th. Dr. Genge of Croydon was present as a member of the Insurance Acts Committee to explain document M. 25. The first two recommendations of the report were adopted. It was also resolved: "That there be no acceptance as to the extension of the medical benefit under the Insurance Act till the remuneration of the medical profession is decided and the range of services defined." Further consideration of the memorandum was postponed.

ESSEX.

At two special meetings and the ordinary meeting the following decisions were arrived at:

M. 22.—The committee decided could not be signed by the committee as such.

M. 25.—All the recommendations, it was decided, should be adhered to, but several suggested alterations to the body of the document were sent to the Insurance Acts Committee—for example, that a separate fund be arranged to pay for special services; that a central clearing house be instituted for keeping correct lists, a copy being sent to each practitioner of his list; that after a given time each insured person on sick benefit should come automatically under the medical referee; that the paragraph referring to payment of newly-appointed practitioners on the panel be deleted.

The action of the Special Subcommittee which communicated with other committees of the group resulting in a meeting of representatives of these at the London Panel Committee under the chairmanship of Dr. Panting (Essex) was approved, and Drs. C. E. Brunton (acting chairman, Essex) and H. R. Brown (chairman, Rural Practitioners' Subcommittee) were appointed to the Standing Committee.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following announcements are notified by the Admiralty: Surgeon Commander T. B. Shaw to the *Birmingham*. Surgeon Lieutenant Commander E. Moxon-Browne to Ascension Hospital. Surgeon Lieutenant C. M. R. Thatcher to the *Revenge*. Surgeon Lieutenants (temporary): R. P. Langford-Jones to R.N. Hospital, Chatham; J. Melr S. Nichol to the *Inflexible*, E. S. Mellor to the *Vampire*, I. Coyte to R.M. Division, Chatham; G. Lillico to the *Prince George*, S. O. Rashbrook to the *Ark Royal*, J. S. Farries to the *Gainsborough*, additional; A. H. Hartly to the *Blake*.

ARMY MEDICAL SERVICE.

Temporary Major-General R. H. Luce, C.B., C.M.G. (Colonel T.F. Res.), relinquishes his temporary commission and is granted the rank of Major-General.

Temporary Major-General Sir Wilmot P. Herringham, C.B. (Lieut.-Colonel R.A.M.C.T.F.), relinquishes his temporary commission on reposting.

Temporary Colonel Sir W. Arbuthnot Lane, Bt., C.B. (Captain R.A.M.C.T.F.), relinquishes his temporary commission on reposting.

ROYAL ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel F. C. Moore (Captain R.A.M.C.T.F.) relinquishes his temporary commission on reposting.

Major F. C. T. Davy, C.M.G., is seconded for service under the Egyptian Government.

Major F. C. Sampson, D.S.O., relinquishes the rank of Lieut.-Colonel on reposting.

Majors to be acting Lieut.-Colonels whilst specially employed: E. B. Booth, D.S.O., W. J. Watson, D.S.O.

Temporary Major W. Robertson (Captain R.A.M.C.T.F.) relinquishes the acting rank of Lieut.-Colonel.

To be acting Majors:—Captain A. L. Foster. Temporary Captains: F. T. C. Milligan, W. J. D. Bromley, St. G. E. Harris.

The following relinquish the acting rank of Major:—Captain C. M. Rigby. Temporary Captains: W. Fell, D. I. Anderson, O.B.E., F. N. Brown, E. G. Oram, J. A. W. Watts.

Captain W. J. Tobin to be acting Major whilst specially employed. The name of temporary Captain William W. Johns is as now described, and not as in the *London Gazette*, May 8th, 1919.

To be Captains, but not to reckon for pay or allowances prior to May 1st, 1919, with precedence as stated: Captain (acting Major) C. H. Brennan, M.C., from Special Reserve, January 19th, 1919, next below A. J. Beveridge, and to retain his acting rank. Temporary Captains: W. Frier, February 27th, 1918, next below R. W. Galloway; M. P. Power, M.C., June 4th, 1918, next below W. F. Adam. Captain H. E. P. Dixon, M.C., from R.A.M.C.T.F., February 5th, 1918, next below R. E. Burnley.

Captains from Special Reserve to be Lieutenants and to be temporary Captains, but not to reckon for pay or allowances prior to May 1st, 1919, with precedence as stated: H. M. Moore, August 28th, 1915,

next below B. J. Daunt; (acting Major) D. J. Valentine, November 1st, 1917, next below A. R. Barlas, and to retain his acting rank.

Temporary Lieutenants to be temporary Captains: E. C. Tatham, G. F. Riddon, M.C., H. Shensby, A. Shearer, E. H. Edwards, C. A. Masson, S. H. Wilkinson, A. P. Green, H. Harrison, F. Shearer, F. H. Alexander, J. H. D. Phelps, R. J. Hutchinson, J. Elder, C. H. Broomhead, I. Hodgkinson, A. E. Clarke, C. B. Gervis, A. F. Galloway.

Temporary Lieutenant C. A. Whitfield, M.C., to be Lieutenant, September 5th, 1918, but not to reckon for pay or allowances prior to May 1st, 1919, with precedence next below J. C. Coult.

The following officers relinquish their commissions:—Temporary Lieut.-Colonels: F. R. S. Cosens. And retain the rank of Lieut.-Colonel: Sir Robert Armstrong-Jones, Maurice Craig, A. B. Mitchell, J. C. G. Ledingham, C.M.G. Temporary Major H. H. Sepell, and is granted the rank of Lieut.-Colonel (substituted for notification in the *London Gazette*, May 16th, 1919). Temporary Major F. Charlesworth, and retains the rank of Major. Temporary honorary Major H. S. Southar, O.B.E., on ceasing to serve with the Red Cross Hospital, Netley, and retains the honorary rank of Major. Captains: A. L. Urquhart, O.B.E., T. D. Inch, O.B.E., M.C., C. J. D. May. Temporary Captains and are granted the rank of Major: W. Anderson, A. C. E. Gray, S. Campbell, B. Hogan, R. S. Dewar, P. M. Heath (March 31st, 1919, substituted for notification in the *London Gazette*, May 15th, 1919), T. A. Lawder (on account of ill health contracted on active service). Temporary Captains and retain the rank of Captain: E. L. M. Lobb, A. H. Thomas, H. J. Penny, W. Beck, E. S. Ellis, G. F. Fawn, R. Crothers, C. D. Day, R. Frew, T. P. Lewis, J. O. B. Grant, M.C., G. S. Applegate, J. Findlay, E. H. H. Granger, C. W. Freeman, G. H. Keene, A. Duguid, D. M. Borland, W. G. Goudie, F. Brickwell, W. D. Dunlop, J. E. Cheesman, J. C. Hallinan, R. J. Bruce, J. D. Benjafield, J. Fairley, H. R. Ellison, G. J. Eady, A. C. Jaing, H. C. Harrison, J. Watson, P. C. Conran, A. S. Garden, W. H. Condell, R. F. Linton, G. A. Hodges, J. B. H. Beatty, G. Adam, J. P. Lusk, M.C., R. J. Attridge, B. Cuppage, T. G. Lusk, A. Hipwell, R. A. Quinn (on account of ill health contracted on active service), W. J. Harris, L. D. Calander, R. W. Eddie, D. Longwill, J. S. Leslie, J. K. Davies, W. W. Carlow, G. V. Anderson, W. Landsborough, H. G. Barrie. Temporary honorary Captains and retain the honorary rank of Captain: L. E. C. Norbury, O.B.E., A. Wills, L. W. Sharp, C. C. Goodall, C. H. L. Harper, C. G. Hitchcock, A. G. Shera, W. Martin, L. M. Earle, H. A. F. Wilson, O.B.E., E. W. Twining, and R. H. Campbell, on ceasing to serve with the British Red Cross Hospital, Netley; E. V. Jones on ceasing to be employed with the Welsh Hospital, June 4th, 1918 (substituted for notification in the *London Gazette*, July 9th, 1918); P. D. Spohn. Temporary Lieutenants and retain the rank of Lieutenant: W. C. Rainsbury, March 9th, 1919 (substituted for notification in the *London Gazette*, April 17th, 1919), D. M. Young, A. B. Earle, A. B. Slater.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Captain R. C. Fuller is transferred to the unemployed list. Granted temporary commissions as Captains: W. A. Maloué (Captain R.A.M.C.S.R.), A. L. Robinson.

GENERAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Late Captains R.A.M.C. to be Captains: A. L. Urquhart, O.B.E., T. D. Inch, O.B.E., M.C., C. J. D. May.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain A. T. Pitts, D.S.O., relinquishes the acting rank of Lieut.-Colonel on reposting.

Captains relinquish the acting rank of Major: G. Dalziel, M.C. On reposting: C. Armstrong, C. S. Staddon, M.C.

Captain J. A. L. Wilson to be acting Major. Captain D. W. McLean relinquishes his commission on account of ill health contracted on active service and retains the rank of Captain.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel to be Colonel: W. G. Pridmore, C.M.G., July 4th, 1918.

Lieut.-Colonel J. Moorwood has retired in consequence of ill health.

Major (temporary Lieut.-Colonel) R. A. Needham, D.S.O., is permitted to retain the temporary rank of Lieutenant-Colonel while holding the appointment of Deputy Director-General, I.M.S. (October 24th, 1918).

Temporary and honorary Captains to be temporary and honorary Majors: C. Fernandes (May 17th, 1918), S. K. Engineer (May 18th, 1918).

Major W. V. Coppinger, D.S.O., M.D., F.R.C.S.I., appointed Professor of Ophthalmic Surgery, Medical College, Calcutta, and Ophthalmic Surgeon to the Medical College Hospitals.

Lieut.-Colonel J. W. Watson posted as Agency Surgeon in the Eastern States of Rajputana.

Captains to be Majors: W. P. G. Williams, S. B. Mehta, G. Holroyd, L. K. Tarapore, D. D. Khat, S. C. Chuckerbutty, A. F. Babonau, M.B., with effect from February 2nd, 1919; J. P. James, with effect from March 7th, 1919.

The following Majors take precedence from the dates specified, their previous forfeited service having been restored for good service in the field: J. F. James (September 1st, 1918), E. B. Munro (August 2nd, 1918), J. Smalley (March 1st, 1918).

The promotion of the following Majors is antedated as shown: H. B. Drake, E. C. Hodgson, D.S.O., W. S. McGillivray, W. Gilt, C.I.F., C. H. Barber, W. Tarr, H. Watts, L. D. Jones, W. T. Finlayson, D.S.O., W. T. McLowen, H. E. Stanger-Leathes, E. A. Roberts, D.S.O., M. J. Quirke, J. M. Holmes, M. F. White, from July 30th, 1915, to July 1st, 1915; T. F. Owens, G. F. I. Harkness (retired), and (Brevet Lieut.-Colonel) A. W. M. Harvey, from August 31st, 1915, to July 1st, 1915; W. E. Brayne, M. S. Irani, S. W. Jones, J. Anderson, and G. G. Hirst, from January 30th, 1916, to July 1st, 1915; H. S. Munson, F. H. Stewart, A. H. Proctor, D.S.O., R. T. Wells, L. M. Macrae, C. C. C. Shaw, J. W. H. Babington, A. S. M. Peebles, and P. B. Shuttle, from March 1st, 1916, to September 1st, 1915; A. F. Hamilton, A. A. McNeill, H. C. Buckley, M. R. C. MacWatters, (Brevet Lieut.-Colonel) W. H. Hamilton, D.S.O., J. Cunningham, and H. Falk, from August 1st, 1916, to October 15th, 1915; A. Cameron, from September 1st, 1916, to October 15th, 1915; A. D. White, N. M. Wilson, J. S. O'Neill, M.C., W. S. Nealon, from February 1st, 1917, to October 15th, 1915; C. H. Reinhold, M.C., W. D. Wright, V. N. Whitmore, W. J. Powell, from March 1st, 1917, to November 15th, 1915; C. E. Palmer, B. E. M.

Newland, L. A. H. Lack, E. J. C. McDonald, J. F. Boyd, N. S. Sodhi, M. C., and W. C. Gray, from September 1st, 1917, to November 15th, 1915.

To be Major-General: Colonel W. E. Jennings, M.D., *vice* Major-General R. W. S. Lyons, K.H.P., with effect from January 11th, 1919.

The following officers have been permitted to *re-tire* from the service, with effect from the dates specified: Lieut.-Colonels J. W. F. Rait, M.B. (January 24th, 1919), F. P. Maynard, M.B., F.R.C.S. (March 10th, 1919), S. H. Henderson, M.B. (March 31st, 1919).

Major W. L. Trafford, M.B., has been transferred to the temporary half pay list, with effect from October 18th, 1918.

Lieut.-Colonel J. T. Calvert, C.I.E., Principal and Professor of Medicine, Medical College, Calcutta, has been granted combined leave for six months, and Lieut.-Colonel B. H. Deare, Professor of Materia Medica, has been appointed to officiate in his stead.

Lieut.-Colonel F. H. G. Hutchinson, Sanitary Commissioner, has been appointed to officiate as Sanitary Commissioner with the Government of India, with effect from March 1st, 1919.

Lieut.-Colonel D. McKay, M.D., Professor of Physiology, Medical College, Calcutta, has been appointed to officiate as Professor of Materia Medica.

Captain J. A. Shorten, M.B., Resident Medical Officer, Medical College Hospital, has been appointed to officiate as Professor of Physiology at the College.

Lieut.-Colonel R. F. Standage has been posted as Residency Surgeon in Mysore, with effect from March 7th, 1919.

Lieut.-Colonel J. Jackson, C.I.E., M.B., has been promoted to the rank of Colonel, with effect from October 27th, 1918.

Captain E. S. Goss, M.C., will take seniority in his present rank from July 29th, 1914, his previous forfeited service having been restored for good service in the field.

Lieut.-Colonel A. H. Nott has been permitted to retire from the service, with effect from April 21st, 1919.

Major H. H. Broome has been appointed to be Professor of Operative Surgery in the King Edward Medical College, Lahore, *sub pro tem.*, with effect from November 4th, 1918.

Major H. Crossle has been appointed to be an Agency Surgeon of the first class *sub pro tem.*, and Chief Medical Officer, North-West Frontier Province, with effect from January 26th, 1919, and to officiate in addition as Joint Civil Surgeon, Peshawar.

Captains promoted to be Majors, with effect from March 7th, 1919: W. E. R. Williams, S. J. Bathena.

Lieutenants promoted to be Captains, with effect from March 17th, 1919: J. P. Huban, E. R. Daboo, M. M. Cruikshank, A. Y. Dabholkar, M.C., K. S. Master, M.C., S. A. McSwiney.

Under the provisions of Army India Instruction 720 of 1918 the following officers will retain the temporary rank of Captain on permanent appointment to the service, with effect from March 17th, 1919: D. Sanyal, Fazal-ud-Din, G. C. Maitra, B. Basu, S. C. Alagappan.

Major A. E. J. Lister appointed an Honorary Surgeon on the Personal Staff of His Excellency the Viceroy and Governor-General.

Lieut.-Colonel E. D. W. Greig, C.I.E., and Major F. Norman White, C.I.E., have been deputed to attend the International Sanitary Conference at Paris as the representatives of the Government of India.

Major F. W. Cragg appointed to be Assistant Director of the Central Research Institute, Kasauli, with effect from March 17th, 1919.

Captains to be Majors (January 27th, 1919): V. B. Green-Armistage, A. N. Dickson, M.C., A. G. Coullie, A. J. H. Russell, D. H. Rai, M.C., W. H. Riddell, M.C.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major (Brevet Lieut.-Colonel, acting Colonel) D. Rorie, D.S.O., relinquishes his acting rank on vacating appointment as Assistant Director of Medical Services.

Major G. W. Fitzgerald is restored to the establishment on ceasing to hold a temporary commission in the R.A.M.C.

The following officers relinquish their acting rank on ceasing to be specially employed:—Major (acting Lieut.-Colonel) J. Ward, D.S.O. Captains (acting Lieut.-Colonels): G. K. Maurice, E. Alderson, D.S.O. Captains (acting Majors): H. S. Hollis, H. A. Macmillan, M.C., H. J. Dunbar, W. Stobie, J. C. W. Methven, J. M. Pringle, W. H. Manson.

Captain J. W. Scott, M.C., to be acting Major whilst specially employed.

Captain C. P. C. Sargent is seconded for service with the R.A.F.

Captain G. D. Collen relinquishes his commission on account of ill health contracted on active service, June 12th, 1919, and retains the rank of Captain.

4th Northern General Hospital.—Captain H. C. Barlow relinquishes his commission on account of ill health, and to retain the rank of Captain.

3rd Scottish General Hospital.—Captain J. Gracie is restored to the establishment.

4th Scottish General Hospital.—Captain W. Whitelaw is restored to the establishment.

1st South Midland Mounted Brigade Field Ambulance.—Lieutenant D. Buchanan to be Captain November 8th, 1912 (substituted for notification in the *London Gazette*, September 24th, 1915).

2nd Southern General Hospital.—Major C. H. Wulker is restored to the establishment, December 1st, 1918 (substituted for notification in the *London Gazette*, May 17th, 1919).

3rd Southern General Hospital.—Major J. A. P. Price is restored to the establishment.

2nd Western General Hospital.—Major G. R. Murray is restored to the establishment on ceasing to hold a temporary commission in the A.M.S.

VOLUNTEER FORCE.

City of Aberdeen R.A.M.C.(V).—W. S. Cheyne (late temporary Captain) to be honorary Captain.

Bedfordshire R.A.M.C.(V).—H. N. Edwards (late temporary Lieutenant) to be honorary Lieutenant.

City of Bristol R.A.M.C.(V).—L. R. M. O'Ferrall (late temporary Captain and Medical Officer, 6th Volunteer Battalion, Gloucestershire Regiment) to be granted the honorary rank of Captain.

County of London R.A.M.C.(V).—To be honorary Captains: S. A. S. Kennedy (late temporary Captain and Medical Officer to the 19th Battalion, County of London Volunteer Regiment), Alfred Eddowes (late Captain and Medical Officer to the 21st Battalion, County of London Volunteer Regiment), R. C. Wakefield (late temporary Captain), Temporary Lieutenant M. C. Corner (resigns his commission on account of ill health, and is granted the honorary rank of Lieutenant).

Cumberland R.A.M.C.(V).—F. H. Morison (late temporary Lieutenant) to be honorary Lieutenant J. H. Dickson (late temporary Captain and Medical Officer, 2nd Cumberland and Westmorland Volunteer Battalion, Border Regiment) is granted the honorary rank of Captain.

Derbyshire R.A.M.C.(V).—A. Boswell (late temporary Lieutenant and Medical Officer, Notts and Derby Regiment) to be granted honorary rank of Lieutenant.

Essex R.A.M.C.(V).—W. Benton (Medical Officer to 1st V.B. the Essex Regiment, late temporary Lieutenant), to be honorary Lieutenant.

Lancashire R.A.M.C.(V).—J. Bauchop (late temporary Captain) to be honorary Captain; J. Brown (late temporary Lieutenant) to be honorary Lieutenant; W. J. Baird (late temporary Lieutenant and Medical Officer, 4th Volunteer Battalion, Lancashire Fusiliers) is granted the honorary rank of Lieutenant.

Merionethshire R.A.M.C.(V).—C. E. Macnamara (late temporary Captain) to be honorary Captain.

Midlothian R.A.M.C.(V).—William Robertson (late temporary Captain) to be honorary Captain.

Northumberland R.A.M.C.(V).—W. L. Ruxton (late temporary Lieutenant and Medical Officer to 1st Volunteer Battalion the Northumberland Fusiliers), and M. Thompson (late temporary Lieutenant) to be honorary Lieutenants.

Somerset R.A.M.C.(V).—A. D. Willecks (honorary Major retired Volunteers—Medical Officer 3rd V.B. Somerset Light Infantry—late temporary Captain) to be honorary Captain.

Surrey R.A.M.C.(V).—Temporary Captain H. W. Phillips to be temporary Major.

APPOINTMENTS.

BRYAN, Charles W. G., M.C., F.R.C.S., Surgeon to Out-patients at the Paddington Green Children's Hospital.

LONDON LOCK HOSPITAL.—The following appointments have been made: Ophthalmic Surgeon, F. A. Juler, F.R.C.S.; Honorary Surgeon to Out-Patients, Lieut.-Colonel J. Johnston Abraham, F.R.C.S., D.S.O.; Research Pathologist and Lecturer on Venereal Pathology, Captain David Thomson, O.B.E., M.B., Ch.B. Edin., D.P.H. Camb.; Pathologist, N. S. Bonard, M.D.; House-Surgeon to the Male Lock Hospital, Lieut.-Colonel L. D. Shaw, M.B., Ch.B.; Clinical Assistant to Lieut.-Colonel J. J. Abraham, E. M. Mahon, M.R.C.S., L.R.C.P.; Dental Surgeon, F. T. Wild, L.D.S., Mr. J. Ernest Lane, F.R.C.S., and Mr. J. E. McDonagh, F.R.C.S., have, in addition to their present appointments, undertaken charge of in-patients at the Female Lock Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

MARRIAGES.

LADELL—DODSWORTH.—On the 12th June, at St. Olave's, Marygate, York, by the Rev. Canon C. C. Bell and Rev. A. E. H. Glover, vicar, Captain Leslie Mordaunt Ladell, son of Dr. Mordaunt Ladell, of Southgate Road, London, N., to Evelyn Care Dodsworth, the second daughter of Mr. E. R. Dodsworth, J.P., of Redholme, York.

MUIR—DUKE.—At the United Free Church, Frickheim, on June 11th, by the Rev. John Smith, M.A., John Kerr Muir, M.R.C.S., L.R.C.P., elder son of the late David C. Muir, Esq., M.D., of Abergillery, to Margaret Mackenzie, elder daughter of J. Duke, Esq., of Frickheim, Forfarshire.

DIARY FOR THE WEEK.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.—Tuesday, 5 p.m., Croonian Lecture by Professor G. Elliot Smith, F.R.S.: The Significance of the Cerebral Cortex.

ROYAL SOCIETY OF MEDICINE.—Section of Odontology: Monday, 5.30 p.m., Royal College of Surgeons, Demonstration by Mr. J. P. Colyer.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
JUNE.	
24 Tues.	Edinburgh Branch, Annual Meeting, Edinburgh, 4 p.m.
25 Wed.	London: Council Meeting, 10.30 a.m. Sussex Branch, Annual Meeting, Brighton, 2 p.m.; Luncheon, 1 p.m.; Tea, 4 p.m.
26 Thur.	Metropolitan Counties Branch, Annual Meeting, 423, Strand, W.C.2, at 4.30 p.m.
JULY.	
1 Tues.	Oxford and Reading Branch, Annual Meeting, Oxford. Cambridge and Huntingdon Branch, Annual Meeting, Cambridge, 2.30 p.m.; General Meeting, 3 p.m.; Tea, 4 p.m.
8 Tues.	Southern Branch, Annual Meeting, Winchester, 2 p.m.
10 Thur.	East Anglian Branch, Ipswich.
23 Wed.	Annual Conference of Secretaries, 429, Strand, London, W.C.2.
24 Thur.	OPENING OF ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C.2, 10 a.m.
25 Fri.	ANNUAL GENERAL MEETING, 2 p.m.

GROUP CONFERENCES.

Tues., June 24th. Southampton. At the Hartley Hall, High Street, Southampton. (Chairman: Dr. A. A. Mackeith, Southampton.)
Fri., June 27th. London. At the Essex Hall. (Chairman: Dr. H. J. Cardale, Chairman, London Local Medical and Panel Committees.)

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JUNE 28TH, 1919.

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British Medical Association.

CURRENT NOTES.

MEETING OF THE COUNCIL.

THE quarterly meeting of the Council of the British Medical Association was held at the house of the Association, 429, Strand, on June 25th, when Dr. J. A. Macdonald, Chairman of Council, presided.

Royal Commission on the Income Tax.

The Council is making arrangements that evidence shall be given on behalf of the Association before the Royal Commission on Income Tax now sitting. The matter has been under the consideration of the Finance Committee, which presented the following memorandum to the Council, and reported that it had appointed a subcommittee consisting of the Treasurer (Dr. G. E. Haslip), Dr. Buttar, Mr. W. McAdam Eccles, F.R.C.S., Dr. Lyndon, and Dr. Rayner, to prepare evidence and submit it to the Royal Commission on behalf of the Association.

Preliminary Memorandum of Points for Consideration.

It may be found desirable to give evidence on the following matters among others:

1. That depreciation allowances should be given to "professions" in the same way as to "trades." The present distinction is obviously a survival from a time when professional men did not use "plant" or "machinery," and is now obsolete in view of the common use of motor cars, x-ray apparatus, etc. The allowance for "cost of renewals" is not satisfactory in working and the percentage anticipatory allowance is preferable and commonly adopted for trades.

2. That the basis of the "previous year" be substituted for that of the three years' average—apart from simplicity in working, the year following a year when profits were high is the most favourable for the payment of a large income tax and vice versa.

3. That the allowance for "children" should be revised and extended.

Note.—The trader has a business, with equipment and stock, etc., to leave for his children; the professional man must invest his savings in their education. A further but subsidiary point in this connexion is that the trader's own business capital yields a rate of interest which forms part of his business profits; the whole of these profits are treated as "earned" income, whereas the professional man's savings, being invested outside his business, are treated as unearned.

4. All profits should be similarly taxed—e.g., farmers' profits should be taxed in precisely the same way as business or professional profits.

5. The right of partners to be separately assessed—which was taken away in 1907—should be restored.

Relief for Education of Children.

In connexion with the third item in this memorandum the Council took note of the fact that the Board of Education had presented to the Royal Commission on Income

Tax, at its meeting on June 19th, a series of recommendations with regard to relief in respect of children, defining what is meant by the words "attend school" and setting out a sliding scale to encourage higher education, to be independent of the maximum income. The recommendations are as follows:

Recommendations of the Board of Education.

1. That the relief granted in respect of children should be continued beyond the age of 16 for those who attend school. By the words "attend school" the Board of Education meant full-time attendance at a university or at any school recognized by the Board of Education as efficient or as making satisfactory provision for the education of its scholars.

2. That the relief in respect of school attendance should be granted from the age of 14 onwards so as to increase with the age of the student. The scale on which it was suggested that this relief should be given was:

Age 14-16 years	...	...	£50 per annum
" 16-18 "	"	"	£75 " "
" 18-21 "	"	"	£100 " "
" 21-25 "	"	"	£125 " "

3. That the relief should not be restricted to persons whose incomes do not exceed £800 or £1,000 per annum.

The Board regarded it as a matter of the greatest importance that parents should be encouraged to keep their children at school after the age of 16, and that the numbers of pupils in places of higher education should thereby be increased until they reached a level more adequate to national needs; and they considered that the proposed remission of income tax would not only help to lessen the financial obstacles to such extension, but also would improve the incidence of the tax by relieving the burden of those who most fully discharge their duties as parents.

The Council approved the action of the Finance Committee, and resolved in particular to make strong representations in support of the above proposals of the Board of Education with regard to relief in respect of children.

Suggestions for the consideration of the Income Tax Subcommittee may be addressed to the Treasurer, British Medical Association, 429, Strand, London, W.C.2.

Emoluments of Scientific Teachers.

A report presented to the Council on behalf of the Science Committee by Sir Clifford Allbutt, its chairman, stated that the question of the necessity for making a revised scale of emoluments and pensions for laboratory and research workers a condition of grants to medical schools, had been considered by a special Medical Research and Laboratory Workers' Subcommittee. It met under the presidency of Professor C. J. Martin, F.R.S., and was attended by Dr. C. H. Browning, Professor E. T. Cathcart, Dr. Helen Chambers, Dr. J. S. Haldane, F.R.S., Dr. R. T. Leiper, Dr. J. C. Mottram, Dr. J. S. Edkins, and Professor F. G. Parsons. The Committee advised the Council to draw the attention of the Board of Education to the fact that the emoluments of a whole-time professor in many of the medical schools of the University of London amounted at the present time

to no more than £600 a year, whereas in 1913 the Royal Commission on University Education in London expressed the view that the minimum salary of a professor in the Faculty of Medicine should be £1,000. The Council accepted this recommendation. It may be added that on the recommendation of the Medico-Political Committee it appointed a special committee to confer with the Science and State Committee of the British Science Guild and other bodies in order to take action in the matter of the inadequate recognition and recompense of medical workers in the field of science by the Government and other bodies. This is not a new subject, for in 1915 and 1916 the Association set up a Joint Committee with the British Science Guild, with the mission to secure betterment of the conditions for medical workers engaged in scientific research. Owing to circumstances arising out of the war the subject was not pursued, but the indications at that time were promising.

Direct Representatives on the General Medical Council.

The tenure of office of the direct representatives of the profession on the General Medical Council, which was prolonged under the special legislation applicable to the majority of elected officers during the war, will come to an end with this year, and an election will be held in November next. The English and Welsh representatives present at the Annual Representative Meetings in 1915 and 1916 decided that the support of the Association should be given to the sitting members, Dr. H. W. Langley Browne, Dr. H. A. Latimer, Dr. J. A. Macdonald, and Sir T. Jenner Verrall, but for the reason stated this recommendation did not take effect. In view of the forthcoming election, the Medico-Political Committee has taken steps to invite each Division in England and Wales to inform it without delay of the name of any person or persons it may deem suitable to be nominated on behalf of the Association and to be supported by it. The Committee will prepare a list of persons so named, and will circulate it to the Divisions, as long as possible before the Annual Representative Meeting this year; at that meeting the representatives of Divisions in England and Wales will be convened to select from the list of persons named from the Divisions four persons to be nominated as candidates. The voting at this meeting will be by transferable vote, and the four candidates who receive the greatest number of votes will be deemed those selected for the support of the Association. Owing to the shortness of the time the Committee took action in anticipation of the meeting of the Council, which approved what had been done. It is understood that all four sitting members are willing to offer themselves again for election.

Fees for Postal Medical Officers.

The Medico-Political Committee of the British Medical Association at its last meeting considered the question of remuneration of postal medical officers, representations having been made to the Committee as to the inadequacy of the present rate of remuneration, and particularly against the conditions under which itinerants are attended. In accordance with the policy of the Association, the Committee approached the Postal Medical Officers' Association with a view to joint action in dealing with the matter. The society, however, declined to enter into such co-operation. Post Office medical officers are therefore requested to inform the Medical Secretary of their opinion as to the present conditions of service, with suggestions as to their amendment. On receipt of a sufficient body of evidence the Association will approach the Post Office authorities.

Treatment of Discharged Disabled Soldiers at Hospitals.

The Association recently learnt that in some areas it was becoming the custom for Local Pensions Committees to send discharged disabled soldiers needing treatment to hospitals without reference to the Ministry of Pensions Referee or to the general practitioners with whom it is possible to make arrangements for treatment under the payment per attendance scheme. In addition, the onus of treatment was thrown on the honorary staffs of voluntary

hospitals. In reply to representations to the Ministry of Pensions, the Association has been informed that such action was contrary to the policy of the Ministry. It is understood that a circular has been issued to Local Pensions Committees stating that cases are not to be sent to hospital without reference to the Referee, who would advise treatment by the general practitioner when he considered it requisite.

War Emergency Fund of the Royal Medical Benevolent Fund.

A subscription of £12 12s. has been received from the Rotherham Division of the British Medical Association (per Dr. G. H. Lodge, Honorary Secretary) in response to the appeal, and has been passed on to the Treasurer of the War Emergency Fund. The names of individual subscribers are published monthly in the advertisement pages of the JOURNAL.

Association Notices.

REPRESENTATIVE BODY, 1919-20.

NOTICE is hereby given to all concerned that pursuant to authority delegated by the Council in that behalf, the Organization Committee, on consideration of the membership figures contained in the Annual List of Members, 1919, has decided that the **Constituencies** for election of the Representative Body, 1919-20, under By-law 33 of the Association, shall be the same as for 1918-19, with the exception that the Isle of Wight and Southampton Divisions be grouped to form one Constituency, that the Caithness and Sutherland, Islands and Ross and Cromarty Divisions together form an independent Constituency, and the Inverness Division an independent Constituency.

Under By-law 35, the names of the **Representatives** and **Deputy Representatives** for 1919-20, and date of election, must be notified to the Medical Secretary not later than July 3rd, 1919.

Honorary Secretaries who have not yet forwarded these particulars to the Medical Secretary are requested to forward them as soon as possible.

COUNCIL, 1919-20.

NOTICE is hereby given that **Nominations** for Candidates for election as Members of Council by grouped Representatives for the year 1919-20, under By-law 46 (c), will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting on Thursday, July 24th, 1919. Each Nomination must be on the prescribed form (A.R.M. 9), copies of which will be forwarded by the Medical Secretary on application.

The Voting Papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a Constituency in the United Kingdom in attendance at the Meeting.

ANNUAL REPRESENTATIVE MEETING, 1919.

THE Annual Representative Meeting of the Association will be held in the Connaught Rooms, Great Queen Street, London, W.C.2, commencing on Thursday, July 24th, at 10 a.m.

The Provisional Agenda was published in the SUPPLEMENT of May 3rd, 10th and 24th, 1919.

ANNUAL CONFERENCE OF SECRETARIES.

THE Annual Conference of Honorary Secretaries of Divisions and Branches of the Association will be held at 429, Strand, W.C.2, on the afternoon of Wednesday, July 23rd, 1919. Particulars will be announced later.

Honorary Secretaries are hereby invited to give notice of matters they desire should receive the attention of the Conference.

The Council reminds all concerned that, as in the case of members of the Representative Body, Council, and Committees attending meetings of those bodies, the first-class travelling expenses within the United Kingdom of Honorary Secretaries attending the Annual Conference of Secretaries are payable from the central funds of the Association.

ANNUAL GENERAL MEETING, 1919.

NOTICE is hereby given by the Council that the Annual General Meeting of the Association will be held at the Connaught Rooms, Great Queen Street, London, W.C., on Friday, July 25th, 1919, at 2 o'clock in the afternoon. Business: (1) Minutes of last Meeting. (2) Appointment of auditors (Messrs. Price, Waterhouse and Co. offer themselves for re-election). (3) Report of election of President,

SCHOLARSHIPS AND GRANTS IN AID OF
SCIENTIFIC RESEARCH.

SCHOLARSHIPS.

THE Council of the British Medical Association is prepared to receive applications for Research Scholarships as follows:

1. An *Ernest Hart Memorial Scholarship*, of the value of £200 per annum, for the study of some subject in the department of State Medicine.
2. *Three Research Scholarships*, each of the value of £150 per annum, for research into some subject relating to the causation, prevention, or treatment of disease.

Each Scholarship is tenable for one year, commencing on October 1st, 1919. A Scholar may be reappointed for not more than two additional terms.

The Conditions of the award of Scholarships are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

GRANTS.

The Council of the British Medical Association is also prepared to receive applications for Grants for the assistance of Research into the Causation, Treatment, or Prevention of Disease. Preference will be given, other things being equal, to members of the medical profession, and to applicants who propose as subjects of investigation problems directly related to practical medicine.

The Conditions of the award of Grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C.2.

Applications.

Applications for Scholarships and Grants for the year 1919-20 must be made not later than Saturday, June 28th, 1919, in the prescribed form, a copy of which will be supplied by the Medical Secretary on application.

Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for Grants in aid of work which need not be performed in a recognized laboratory.

ALFRED COX,
Medical Secretary.

429, Strand, London, W.C.2,
May 24th, 1919.

THE LIBRARY OF THE BRITISH MEDICAL
ASSOCIATION.

LENDING FACILITIES FOR MEMBERS.

THE Council has made arrangements whereby books relating to all branches of medical literature and general science can now be obtained on loan by members of the Association free of charge (other than any postage) from the Lending Department of the Library of the Association, 429, Strand, London, W.C.2. The new facilities include, besides works on medicine, surgery, anatomy, physiology, bacteriology, dentistry, hygiene, obstetrics, and the other branches of medical and surgical science, the subjects of astronomy, biology, botany, chemistry, electricity, engineering, geology, microscopy, mining, physics, philosophy, sociology, technology, voyages and travels, zoology, etc. All such books issued will be latest editions, new books and new editions becoming available immediately upon publication.

The new facilities are additional to those which were already available for loan to members, of medical journals and periodicals, scientific reports of hospitals and laboratories, transactions of societies and congresses, and reports issued by States and municipalities, including those of

commissions and committees appointed by States, municipalities, and legislative bodies.

The rules in respect of the new facilities will be similar to the previous rules. Copies of the rules, and all other information, may be obtained on application to the Librarian, British Medical Association, 429, Strand, London, W.C.2.

BRANCH AND DIVISION MEETINGS TO BE HELD.

CAMBRIDGE AND HUNTINGDON BRANCH.—Dr. Edward H. Ezard, Honorary Secretary (74A, Trumpington Street, Cambridge), gives notice that the seventy-fifth annual general meeting of the Branch will be held at Sidney Sussex College, Cambridge (by kind permission of the Master and Fellows) on Tuesday, July 1st. Programme:—2.30 p.m., Business: (a) Balance sheet and report of Branch Council; (b) election of officers and Branch Council; (c) other business, if any. 3.30 p.m.: General meeting, open to members, their wives and invited guests, when Professor F. Gowland Hopkins will give an address on the bearing of recent researches on the feeding of infants and children. 4 p.m.: The President and Mrs. Grove invite members, their wives and guests, to tea in the Fellows' garden.

EAST ANGLIAN BRANCH.—Dr. B. H. Nicholson (East Lodge, Colchester) gives notice that a general meeting of the East Anglian Branch will be held at Ipswich on July 10th, to consider the date most suitable for carrying into effect the dissolution of the East Anglian Branch. Members wishing to read a paper or show cases should communicate at once with Dr. Nicholson, Colchester.

OXFORD AND READING BRANCH.—The annual meeting of the Branch will be held at Oxford on Tuesday, July 1st. It has been arranged that the meeting should be entirely of a clinical character, and members wishing to show cases or read papers should communicate with Sir William Osler, 13, Norham Gardens, Oxford.

SOUTHERN BRANCH.—Dr. A. A. MacKeith, Honorary Secretary (66, Howard Road, Southampton), gives notice that the annual meeting of the Branch will be held at the Royal Hants County Hospital, Winchester, on Tuesday, July 8th, at 2 p.m., when Dr. Alfred Cox, O.B.E., Medical Secretary, will give an address. The President invites all members to tea at the close of the meeting. The annual golf competition will take place as usual. The President (Dr. Lockhart Livingston) will be pleased to see non-members of the Association at the meeting and afterwards at tea.

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH: HYDE DIVISION.
At the annual meeting of the Hyde Division held on June 3rd the following officers were elected for the ensuing year:

Chairman: Dr. H. Burton (Marple). Vice-Chairman: Dr. P. Talbot.
Honorary Secretaries: Dr. F. G. Ralphs, Dr. J. Kerr. Representative to Branch Council: Dr. T. Watts.

METROPOLITAN COUNTIES BRANCH: STRATFORD DIVISION.
At the annual meeting of the Division, held on May 28th, the following officers were elected for the ensuing year:

Chairman: Dr. F. Challans. Vice-Chairman: Mr. Couzens.
Secretary and Treasurer: Dr. H. S. Beadles. Representative in Representative Body: Dr. Beadles. Representative on Branch Council: Dr. Sanders and Dr. Hay.

NORTH OF ENGLAND BRANCH: CLEVELAND DIVISION.
The annual meeting of the Division was held at Saltburn on June 11th. There was a good attendance of members. The following office-bearers for the year 1919-20 were appointed:

Chairman: Dr. A. Brynäs. Chairman-elect: Dr. W. A. Stephen.
Honorary Secretary and Treasurer and Representative in Representative Body: Dr. G. H. Lowe.

SOUTHERN BRANCH: CHANNEL ISLANDS DIVISION.
At the annual meeting of the Channel Islands Division, held on May 14th, the following officers of the Division were elected for the ensuing year:

President: Dr. H. C. Major (Jersey). President-elect: Dr. E. V. Gibson (Guernsey). Honorary Secretary and Treasurer: Dr. C. d'A. Collings (Guernsey). Representative on Branch and in Representative Body: Dr. R. A. Wilson (Guernsey).

WITWATERSRAND BRANCH.
The following have been elected as officers for 1919:
President: Dr. A. G. Brinton (Johannesburg). Vice-President: Dr. A. H. Watt (Germistown). Honorary Secretary: Dr. J. J. Levin (Johannesburg). Honorary Treasurer: Dr. W. Welchman (Johannesburg). Members of Council: Dr. G. A. E. Murray (Johannesburg), Dr. F. S. Lister (Johannesburg), Dr. W. Watkins-Pitchford (Johannesburg), Dr. Gordon Grant (Johannesburg), Dr. R. P. Mackenzie (Johannesburg).

INSURANCE.

INCREASED GRANTS TO INSURANCE
PRACTITIONERS.

THE following communication has been addressed to the Medical Secretary of the British Medical Association by the Secretary of the National Insurance Joint Committee:

Buckingham Gate,
London, S.W.1,
June 23rd, 1919.

Sir,

I am desired by the Chairman of the National Health Insurance Joint Committee to advert to your letter of the 12th ultimo relative to the question of grants being made for 1919 for the purpose of supplementing the remuneration of insurance practitioners by way of war bonus at an increased rate as compared with the grants made for 1918, and I am to state that the matter has been receiving Major Astor's close attention in consultation with the Treasury.

In the first place, I am to state that Major Astor is not prepared to admit that the ratio of 16 to 25 suggested in your letter affords any test or measure by which the scale of war bonus already granted can be shown to be inadequate, or any other scale of bonus ascertained to be fair and reasonable. It should be appreciated that the increase in prices has been most marked as regards the necessities of life; and that, since such necessities absorb a larger proportion of a small income than of a larger income, the increased cost of living accordingly justifies a larger proportionate ratio of war bonus increase in the case of the former than in the case of the latter. Hence, while it may be correctly inferred from the proposal of the Government to introduce legislation increasing the wages limit to insurance of non-manual workers from £160 to £250 a year that war bonus payments have, generally speaking, raised the income of such workers who previously earned £160 to £250 a year, it should be obvious that the same ratio of increase would not necessarily apply in cases of higher incomes. For example, while the increased cost of the necessities of life may have justified and secured, in the case of persons earning before the war £160 a year, a war bonus increasing their income to £250, clearly no one would suggest that the increased cost of living would justify, in the case of any person earning £1,600 a year before the war, an increase to £2,500.

Major Astor is unable, therefore, to admit that the proposed legislation alluded to is relevant to the question raised in your letter. He recognizes, however, that judging by other and more reliable standards, there is reason to regard the war bonus scheme adopted for 1918 as inadequate for the current year, and that the recent departure, in the case of Civil Servants from the original Civil Service scale of war bonus by reference to which the 1918 scheme for insurance practitioners was to some extent determined, has removed the justification for strict adherence to the limitations then imposed.

Major Astor is accordingly prepared to admit the case for substantially increased war bonus grants to insurance practitioners for 1919, and he understands that the Treasury would be willing to ask Parliament to make the necessary financial provision to enable a considerably enhanced rate of war bonus payment to be made for that year according to a new scheme to be determined by reference to data relative to cost of living similar to those which have been found to justify the amendment of the Civil Service war bonus scale.

Whether the examination of these data with a view to the settlement of the amount of a new war bonus for 1919 should now be entered upon, or whether this could more conveniently be postponed until later in the year, when much of the same ground will necessarily have to be examined in connexion with the settlement of the financial terms of the Insurance Medical Service for 1920 and after, is a question which is at present receiving attention, and will be the subject of a further communication; it being understood that in either event payment according to the revised scheme to be hereafter settled will be made as regards the whole of the calendar year 1919, irrespective of the date upon which the settlement of the scheme is completed.

I am, Sir,

Your obedient Servant,

(Signed) E. HACKFORTH.

MEETINGS OF THE PROFESSION.

CONFERENCE IN LONDON.

THE second of three meetings of London practitioners to consider the reports on the revision of conditions of service under the Insurance Acts (M. 25) was held on June 20th at the Memorial Hall, Farringdon Street. The chair was taken by Mr. E. B. TURNER, F.R.C.S., who was supported by Dr. H. B. Brackenbury, Chairman, Insurance Acts Committee; Dr. J. Smith Whitaker, Deputy Chairman, National Insurance Commission; Dr. B. A. Richmond, Secretary, London Local Medical and Panel Committees; and Dr. Alfred Cox, Medical Secretary, British Medical Association. Not more than forty members of the profession attended.

Dr. BRACKENBURY, at the Chairman's invitation, gave a summary of M. 25, which, he said, was the outcome of a specific instruction from the Conference of Panel Committees in April, 1918. A subcommittee of the Insurance Acts Committee had conducted the preliminary discussions, which, both on the side of the profession and on that of the Commissioners, had been as full and frank as possible. The report did not touch on the actual amount of remuneration, but it in no way prejudiced that question. It was hoped that the profession might be sufficiently consulted with regard to these proposals in time for the new arrangements to be operative from January 1st next, but if not they would be held over for a further period. In coming to a decision regard must be had not only to the opinions of practitioners at present on the panel, but to those of the rest of the profession and of the public. He proceeded to pick out those proposals which had already been the subject of criticism. The first had to do with the limitation of lists. This matter chiefly affected London, where lists of four or five thousand were not uncommon. The subcommittee went into the discussion unanimously of opinion that limitation of lists was undesirable, and came out of it equally unanimous that there would have to be limitation after all. The suggested figure of 3,000 was not a fixed one; it was only put in to indicate that a high figure must be selected. The proposal was to give the practitioner himself a paramount voice in deciding by what method his overweighted list should be reduced. Another matter on which misunderstanding had arisen concerned the proposal that a certain minimum payment should be ensured to those entering practice; yet it was obvious that, owing to the insurance machinery which had been set up in the meantime, a young man now entering practice found much more difficulty than was the case a few years ago, and some modification and adjustment of the machinery appeared to be equitable. Finally, with regard to midwifery, there was no recommendation in the report that insurance practitioners should be compelled to take part in a midwifery service against their will; the purpose of the paragraph was to make it plain that if a national midwifery service was established, general and insurance practitioners desiring to take part therein should not be prohibited from doing so.

Dr. SMITH WHITAKER said that Government departments had been reproached in the past because they had either not consulted the medical profession at all or had not consulted it sufficiently before great changes affecting its interests were made. Whatever truth there might have been in this charge in the past, it could not be preferred in the present instance. These discussions had been going on since April of last year. He added that the Commissioners had no responsibility for the document M. 25. It did not represent their views, though neither would he say that it represented anything with which they disagreed. The adequacy of the insurance medical service was a matter of national concern, and the Government was asking the profession to help in determining the lines of the best service that the country could afford to give.

The report was then taken paragraph by paragraph, and many questions were asked and replied to by Dr. Brackenbury. Nearly all the questions were directed to the further elucidation of particular points. The chief discussion took place on the limitation of lists, which Dr. J. A. ANGUS declared would be not only difficult but almost necessarily unjust, in view of the differences in the working capacity of men, the geographical conditions of areas, and the extent of a man's non-insurance practice. Dr. BRACKENBURY said that all the arguments against limitation were admitted, and were set forth in the report; it was a case of the balancing of argument. He said, in reply to a question, that it had been estimated, taking the country over, that 60 per cent. of insured persons received attention in a year.

In reply to criticisms with regard to the proposal to "subsidize competition," Dr. WHITAKER made certain observations. He stated that the goodwill value of an insurance practice to-day in the medical market was much higher than that of a private practice in proportion to the income transferred. On the subject of midwifery the same speaker complained of the difficulty in ascertaining what the profession really wanted. If they did make up their minds that ordinary midwifery was a waste of time, they should say so, and be content to secure their right to attend a difficult case and to exercise supervision over their insured patients during pregnancy.

Dr. A. COX said he was glad this last matter had been put so plainly. He wanted to appeal to the profession from another point of view, that of men newly entering upon practice. If these men were excluded from attending pregnant women they would gradually find themselves excluded from general practice altogether. A wrong decision on this matter might prepare the way for a whole-time service.

Dr. BRACKENBURY then dealt at some length with the memorandum of discussions between representatives of the Committee and the Commissioners and others on the subject of additional medical services. It was of vital importance to the profession that these specialist services should be established on the right lines at the beginning. They should not be manned by whole-time salaried officers, but by part-time officers, paid on a time basis, and in so far as any general practitioner was himself a specialist, he should be allowed to take part in these additional services. No member of the public ought to be allowed to take advantage of these services unless recommended thereto by a general practitioner. With regard to medical referees—a question which also came into this memorandum—he said that it was desired that such officers should have a high status and a good salary from an assured source, that their functions should be administrative, and that they should take no part in clinical treatment.

Dr. G. B. BATTEN urged strongly that an income limit should be laid down above which persons would not be able to secure these specialist services; otherwise the system would lend itself to grave abuse. In reply to other questions, Dr. BRACKENBURY said that the body which made the selection of those to be employed in specialist clinics would be in the main a professional body, say the Local Medical Committee, possibly with the assistance of one or two assessors centrally; and Dr. SMITH WHITAKER said that the way was open to a great variety of arrangement.

No resolutions were submitted to the meeting save votes of thanks, which were heartily accorded to the Chairman and Dr. Brackenbury on the motions of Dr. BATTEN and Dr. ANGUS. The conference lasted three and a quarter hours.

CONFERENCE AT NORWICH.

A group conference of medical practitioners was held at Norwich, on June 14th, to consider and discuss document M. 25 and the memorandum of discussions on the extension of medical benefit under the Insurance Acts. The meeting was attended by some sixty practitioners from Norwich, Norfolk, Cambridgeshire, Ipswich, Yarmouth, and Isle of Ely. Distance from Norwich and indifferent train service prevented a larger attendance, but the gathering included representative men, chairmen and secretaries of the Panel and Local Medical Committees of the above areas. Lieut.-Colonel D. G. Thomson, C.B.E., R.A.M.C., was in the chair, and on the platform were Dr. Smith Whitaker, representing the Insurance Commission, and Dr. Neal, Deputy Medical Secretary of the British Medical Association, representing the Insurance Acts Committee, and Dr. Branson Morgan, Secretary to the Norwich Panel Committee, local organizer of the conference arrangements.

Document M. 25 was taken first. It was decided to deal with the various paragraphs in the summary on page 16, referring, if necessary, to the main relative paragraphs. It was resolved not to frame any definite resolutions thereon, but rather to consider further these paragraphs, especially in the light of explanations given by Dr. Smith Whitaker and Dr. Neal. The general question of remuneration for service was ruled to be premature, and discussion centred on the new terms of the agreement for 1920, and the probable extension and alterations of medical benefit which insurance practitioners willing to serve may be called upon to undertake; in other words, to ascertain and define the service expected, leaving the necessary remuneration for consideration until these conditions are known and settled.

Among the points which aroused special interest was the subsidizing of young doctors entering an area to commence practice; at first the meeting seemed entirely hostile to such a proceeding, but on explanations of the conditions obtaining in certain areas, it was seen that it was at least a proposal worthy of further consideration and to be thrashed out at future Panel Committee meetings.

Another point discussed was the question of the onus of proof that an applicant for treatment was entitled thereto, lay with the insured person, the suggestion to meet this as detailed in M. 25 was not favourably received, strong feeling was expressed by members and from the Chair that some penalty should fall on the insured person, or his friendly society, for not possessing a signed medical card. Dr. Askin, of Suffolk, urged that the larger friendly societies were the greatest offenders in this respect, and instanced a case where one of the largest industrial insurance approved societies had not, in spite of repeated applications for six months, furnished one of its members with a medical card; the railway companies would not convey a season ticket holder who could not on demand produce his ticket. Opinion was strongly expressed that the doctor should not be penalized or troubled, but that the insured person or the approved society should bear the penalties arising out of carelessness or neglect.

The proposed limitation of numbers on a practitioner's list was considered; on the whole this was generally approved, although it was felt to be more applicable to thickly populated industrial areas, and in any case with the safeguard of the approval of the Local Panel Committee.

No strong feeling either way was expressed as to the proposed right of more frequent change of doctor. The proposal to include midwifery in medical benefit aroused great interest as almost the most radical and important change foreshadowed in document M. 25. It would certainly be included in future in any scheme of public medical service such as was aimed at under the National Insurance Acts. It seemed to be the feeling of the meeting that this, like other extensions of medical benefit, was simply a matter of terms; if this great addition to the work of insurance practitioners were adequately remunerated, well and good, but not otherwise. Its inclusion would bring practically all general practitioners into insurance practice, as midwifery and the associated attendance on women and children was supposed to be the basis of all general practice.

With regard to the memorandum on discussions between the Insurance Commission, the Insurance Acts Committee, and certain consultants and specialists with regard to the extension of medical benefit to provide consulting, institutional, and special treatment of insured persons, Dr. GIUSEPPI voiced the feeling of the Conference when he said that the proposal was admirable and would meet with the whole-hearted support of insurance practitioners.

The meeting terminated with a vote of thanks to the Chairman for presiding, and to Dr. Smith Whitaker and Dr. Neal for their elucidations and explanations of many points.

CONFERENCE AT PLYMOUTH.

In pursuance of the scheme adopted for ascertaining the views of the profession on the proposed alterations in the conditions of service under the Insurance Acts and the possible extension of that service, a meeting, to which the whole of the profession in the South-Western area were invited, was held at Plymouth on June 19th. The Chairman, Mr. R. JAKES, F.R.C.S., briefly introduced the subjects under discussion, and gave the hint to Dr. McCleary, who was present on behalf of the Insurance Commissioners, that whatever innovations were necessary to secure a satisfactory service the fundamental thing was the necessity to secure a contented service, and he hoped that fact would always be borne in mind and efforts would be directed to that end.

Dr. ALFRED COX then outlined the objects of the meeting, and, profiting no doubt by his experience at similar meetings, avoided the creation of unnecessary discussion on certain points by preliminary explanations.

The recommendations in M. 25 were generally well received. The information that steps were being vigorously taken to secure a more adequate remuneration in view of the altered value of money gave a good deal of satisfaction, and removed an undercurrent of ill feeling which might have asserted itself.

The proposals for making payments for special services a first charge on the Medical Benefit Fund aroused a good deal of opposition being too suggestive of feeding a dog with his tail and received but a passive acceptance, and that only after the assurance that the pool would be made sufficiently large to admit of such a primary charge. Had

the Commission been discreet enough to set aside this money for special services, and been willing to pay direct for the services, it would have been more apparent that there was the intention to pay for them. The principle of receiving, as the reward of his labours, what was left after indefinite charges had been paid appealed to no medical man.

The meeting was obviously not in favour of accepting a state medical service, and swallowed the clauses relating to the liability for midwifery, having been informed that if they did not they would find a further portion of their work handed over to assistants of the M.O.H., and another plank built into the platform of the state medical service, but several members appeared only to accept the clause after they had learnt that it would be possible for them to contract out of their liabilities by arrangements with other practitioners.

The clauses dealing with the better payment for mileage gave a good deal of satisfaction to the rural practitioners present from this very difficult area, and the translation of the promises to deeds will be absolutely necessary to secure a contented service. The limitation of lists caused very little comment, but the subsidy to be given to the "squatter," whilst accepted, received but a lukewarm support, and a show of hands revealed that it had but a bare majority.

The discussion on the paragraph relating to attendance in emergencies showed that it apparently will require careful translation when introduced into the regulations if it is not to meet with opposition.

Interest centred for some time around the regulations necessary in arranging for the appointment of the proposed consulting staff in the possible extension of the service, and fear was expressed that general practitioners who would not serve on the panel might gain access to the list of consultants, and although not called in for such purpose might yet by being listed pose as persons superior to their rival practitioners who were serving on the panel. The question of open lists or no lists was introduced. The discussion, whilst ending in nothing definite, probably enlightened the representative of the Commission present. Votes of thanks to Dr. Cox and Dr. McCleary concluded the business of the conference.

METROPOLITAN COUNTIES BRANCH.

A meeting of the Metropolitan Counties Branch, to which non-members were invited, was held in Marylebone Presbyterian Church House on June 17th, with Dr. M. G. BIGGS, President of the Branch, in the chair. There were seventy members present.

The CHAIRMAN reported that the meeting had been convened to consider the documents circulated to the profession by the National Insurance Commissioners and the Insurance Acts Committee (M. 25). To clear the issue decision would be taken on four questions:

- (1) Do you approve of the proposed alteration of the income limit for non-manual workers?
- (2) Do you approve of the provision of additional services (consultant, specialist, laboratory, nursing) for insured persons?
- (3) Do you approve of these additional services being made available for other than insured persons?
- (4) Do you approve that such additional services should be contingent upon an extension of the provision of domiciliary treatment by general practitioners to these non-insured persons?

Dr. WOODLEY STOCKER considered Question 1 very unsatisfactory; they could not answer either in the affirmative or negative until the question of capitation fee was settled. Dr. BARON stated that Sir Robert Morant had informed him in reply to a question that the capitation fee was not going to be raised and there was no suggestion that it would be. Mr. BISHOP HARMAN drew attention to the attitude of the Government, and pointed out that this question was most urgent in view of the statement made by Dr. Addison to the British Medical Association deputation (BRITISH MEDICAL JOURNAL, SUPPLEMENT, June 7th).

The CHAIRMAN pointed out that the British Medical Association wanted to know what the profession thought on certain main points arising out of the printed documents circulated. There were many other questions the profession would have to consider which did not come within these documents. For the moment they should concentrate on the points contained in the printed documents.

Dr. SCOTT pointed out that although the capitation question was not under consideration, it would have to be considered later on. He wanted to know how the doctors could do justice to the insured people considering the altered value of money. Until justice was done to the

profession, and the 7s. raised at least to an equivalent of its 1912 value, they could not consider proposals for added work. He objected to the view of the Commissioners that nothing was to be said about the amount of capitation fee until the different services to be given had been discussed and settled.

Dr. SOMERVILLE HASTINGS said he was proud of the work done by the Association as shown by M. 25. If by putting these recommendations into effect they were able to improve the panel service it was certain an improved service would result in better pay.

Question 1 was put and negatived by a very large majority. In the discussion on Question 2 several speakers took strong objection to any proposal for the appointment of supervisors over panel work.

Dr. BRACKENBURY explained that the supervisors referred to would be their own colleagues experienced in the work and its difficulties, and therefore more than mere representatives of the Government appointed to see that the service was carried out.

Sir BERTRAND DAWSON said references had been made to the document of "discussions" which implied that this contained fixed propositions. It did not, but it put forward alternative suggestions for consideration.

Question 2 was by request put to the vote in two parts. The question as printed was agreed to; but a subsidiary question relating to supervisors was negatived.

Question 3 was answered in the affirmative. Owing to some difficulty in arriving at the meaning of the document M. 25, on Question 4 being put to the vote there was no real response.

The meeting terminated with a vote of thanks to the Chairman.

EDINBURGH AND LEITH.

Recent meetings of the medical profession in Edinburgh and Leith have been held to consider the memorandum of the National Insurance Commissioners and the report of the Insurance Acts Committee of the British Medical Association. The meetings were largely attended. All non-members in the area as well as members of the British Medical Association were invited to be present.

The following resolutions were adopted unanimously:

1. That this meeting protests against the action of the Council in approaching the Commissioners with any policy that affects the interests of the profession before having ascertained the views of the members on the question.
2. That this meeting protests against the action of the Commissioners in not inviting representatives of the Scottish Colleges to take part in the conferences.
3. That this meeting regards the whole tenor of the report of the Insurance Acts Committee and the memorandum of the Commissioners as biased on the side of national insurance, and as failing to take account of the strong desire of at least a large section of the profession to restrict as far as possible the range of contract practice.
4. That the proposal to raise the income limit for insured persons from £160 to £250 be uncompromisingly opposed.
5. That this meeting uncompromisingly opposes the raising of the insurance income limit above £160 per annum, inasmuch as that sum, fixed at the inception of the Act, was too high.
6. That this meeting is opposed to any extension of the Medical Benefit Section of the National Insurance Acts, except consultant's advice for the present insured.
7. That the proposed provision of expert services should be limited to the present class of insured persons.
8. That free choice of consultant be given to practitioners and patients under the proposed expert medical service in each area.
9. That when the doctor and patient are agreed that a second opinion is desirable, it should be obtainable by the doctor at once and directly without reference to the referee.
10. That when a patient desires a second opinion and the doctor does not think it necessary, the question should be referred to the referee.
11. That in submitting a patient for a second opinion the doctor should furnish a statement of the case as is done in private practice.
12. That cases in which practitioners, patients, or societies were alleged to have made excessive demands upon expert services should be investigated by a medical committee chosen by the profession and not by a lay or mixed committee.
13. That an expert second opinion should be obtainable from practitioners who are known to the profession and public as possessing special qualifications for such, and from general practitioners of large experience who may possess the confidence of the profession to give expert advice.
14. That the establishment of common surgeries would for obvious reasons be unnecessary.
15. That medical referees should be appointed by the Commissioners.
16. That medical referees should be practitioners having wide experience of general practice.

17. That the duties of a medical referee should be restricted to checking claims for incapacity for work, and to deciding whether an expert opinion is desirable.
18. That investigation and action by non-medical bodies should be abolished.
19. That this meeting disapproves of obstetric practice being included within the range of service under National Health Insurance.
20. That insured persons should have the right to relinquish their medical benefit in exchange for some other form of benefit as nearly as possible financially equivalent to it.

The following two resolutions were passed by a large majority:

1. That this meeting is strongly of opinion that the income limit of £160 should be adopted for all insured persons irrespective of the nature of their employment, and that this matter demands the urgent attention of the Insurance Acts Committee.
2. That if it is desired by insurance practitioners, this meeting acquiesces in the Insurance Acts Committee being authorized to negotiate with the Central Government Department, but only on matters coming within the existing range of medical benefit.

SUNDERLAND.

A meeting called by the Sunderland Local Medical Committee was held on June 30th, with Dr. Moblis in the chair. There was a large attendance of local practitioners. The meeting was summoned to consider further the report of the Insurance Acts Committee (document M. 25), and to pass resolutions thereon. The Chairman presented the report of a subcommittee which was dealt with paragraph by paragraph, and in the main adopted by the meeting.

The following paragraphs of the report M. 25 were approved so far that no objection should be raised to them:

Paragraphs 10, 11 (D) (to the extent of a limitation of 3,000 under the present Act); 25, 39 (that the choice might be quarterly); 41 (with a view to securing a correct register); 43, 45, 58, 60, 72, 73, 78, 107, and 110 (no committee preferred).

It was resolved that the following paragraphs in M. 25 as numbered should be opposed, qualified, or amended:

Paragraph 9: Qualified by the addition of the words, "Provided that such differentiation shall not involve any practitioner being credited with less than the normal capitation fee for each insured person on his list." Paragraph 15: Opposed. As an alternative the meeting favoured the right of the insured patient to change his doctor or vice versa quarterly. Paragraph 16: Opposed. Paragraph 51: Disapproved on the ground that the arrangements at present in force are a sufficient safeguard for the insured person. Paragraph 61: That the onus of choosing a doctor for confinement and puerperal period should remain with the patient. Paragraph 63: That preventive treatment should not be included in capitation fee. Paragraph 74: Opposed. Paragraph 76: While not objecting to the principle of a simple form, the meeting strongly opposed any complex system involving a multiplicity of forms, with the consequent increase in clerical work. Paragraph 106: That no arrangement acceptable which prevents Sunderland being a pathological centre. Paragraph 108: Disapproved under present conditions of general practice.

The following further resolutions were passed:

- (a) That the question of remuneration should be raised and dealt with immediately.
- (b) That the return of demobilized men, many of whom were impaired in health, made the immediate consideration of payment most urgent.
- (c) That the present methods of calculating remuneration were unsatisfactory, and that remuneration of practitioners should be based on the index register and paid in full.
- (d) That in cases of unsuccessful complaints heard by Medical Services Subcommittees it should be possible to award fines and mulct in expenses the society or person making the unsuccessful complaint.
- (e) With regard to the excessive demands by general practitioners on an expert service—page 7 (paragraph 24), of Memorandum of Conference with the Insurance Commissioners—it was resolved to oppose (a) and (c). No objection was taken to (b), but (d) required fuller consideration.
- (f) That the British Medical Association be asked to organize the profession to refuse service if its terms were not obtained.

The Chairman reminded members that the above resolutions had been arrived at after three meetings of the Local Medical Committee and a meeting of the special subcommittee, and he thought therefore that they might be regarded as the carefully considered opinions of the Sunderland practitioners.

NOTES.

COUNTY OF AYR REFEREES' SCHEME.

THE Insurance Committee for the county of Ayr has recently issued a report of the medical referees' scheme, which came into operation on January 1st, 1917. The scheme is to provide approved societies with an efficient and economical means of having cases examined where there is doubt of incapacity for work. The fee payable to the referee for an examination at his surgery is 5s., and for cases requiring to be visited 10s., with mileage and railway fare. There is also an arrangement whereby a medical practitioner appointed by the Insurance Committee makes a fortnightly examination of the certificates lodged by members of a society for the purpose of choosing cases to be examined by the referees. The total sum paid

to the referees in the two years 1917 and 1918 was £31 1s. 1d., of which approved societies paid £20 12s. 1d., and the Insurance Committee (which really works the scheme) provided £10 9s. In addition the societies paid £8 8s. for the travelling expenses of members, as it is arranged that referees shall not examine cases in the area of their practice. As 116 examinations were actually made, the cost to societies was exactly 5s. per examination. The total number of applications to have cases examined was 153, but of these 12 were withdrawn and 25 persons resumed work rather than face the referee. Including the latter it was found that 64.81 per cent. were found fit for work and 35.19 were unfit. The scheme is said to have worked smoothly, as doctors whose certificates are to be reviewed are given an opportunity of communicating with the referee before the examination takes place. In only one case did an insured person appeal against the decision of a referee, and the decision was upheld by the Insurance Commissioners. The number of cases is certainly not large, but this indicates that societies think there is very little malingering and have little reason to complain of the medical certification in the area.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commander R. S. Osborne to the *Briton*. Surgeon Lieutenant Commanders: J. H. B. Martin to the *Fynd*, for Royal Naval Barracks (temp.); F. G. Hitch to Chatham Hospital; J. H. Burdett to the *Phaeton*. Surgeon Lieutenants: A. Simpson to the *Champion*; G. W. Woodhouse to Royal Naval Hospital, Bermuda. Surgeon Lieutenants (temporary): F. W. Nunneley to the *Commonwealth*; W. M. Anthony to the *Bramble*; G. W. Pratt to Royal Marine Division, Plymouth; S. C. Woodhouse to Royal Naval Hospital, Portland (temporary); J. D. Dimock to the *Fernon*; T. Owen to the *Queen Elizabeth*; C. E. Cobb to Lowestoft Naval Base; J. W. Peden to the *Itchen*. To be Surgeon Lieutenant (temporary): W. S. Sykes.

ARMY MEDICAL SERVICE.

Temporary Major-General Sir Anthony A. Rowley, K.C.B., K.C.M.G., K.C.V.O., C.B. (Lieut.-Colonel R.A.M.C., T.F.), relinquishes his temporary commission on rejoining.

Temporary Colonel W. N. Barron, C.M.G., M.V.O., relinquishes his commission and retains the rank of Colonel.

Colonel F. J. Morgan, C.M.G., is placed on the retired list.

Lieut.-Colonel S. G. Butler, D.S.O., to be acting Colonel whilst specially employed.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel G. E. F. Stammers, O.B.E., retires on retired pay.

Temporary Major E. W. Hore (Lieut.-Colonel I.M.S., retired) relinquishes his temporary commission on ceasing to be employed with the Wharfedale War Hospital.

Captain (acting Major) W. W. Treves retires, receiving a gratuity, and is granted the rank of Major.

The notification in the *London Gazette* of May 9th, 1919, regarding Captain Donald McIntyre, M.B.E., is cancelled.

Temporary Lieutenant W. H. Trethowan to be temporary Captain.

B. F. Howlett, late temporary Lieutenant, to be Lieutenant.

The following officers relinquish their commissions: Temporary

Lieut.-Colonel W. Hind (Major and Brevet Lieut.-Colonel T.F. Res.), and retains the rank of Lieut.-Colonel. Temporary honorary Lieut.-Colonel S. S. Pringle, on ceasing to serve with the Irish Counties War Hospital, and retains the honorary rank of Lieut.-Colonel. Temporary Majors and retain the rank of Major: F. J. Stuart (on ceasing to serve with the Northern War Hospital); S. W. Williams, J. Hall-Edwards, N. G. Starr, J. C. Wright (on ceasing to serve with the Halifax War Hospital); J. N. Dobie (on ceasing to be employed at the Keighley War Hospital). Temporary Major S. G. Ogilvy. Temporary honorary Major W. G. Harvey, on ceasing to serve with the Irish Counties War Hospital, and retains the honorary rank of Major.

Captain J. E. Rusby, M.C. Temporary Captains, and are granted the rank of Major: W. A. Curry, W. de M. Peyton, W. H. Peacock, W. H. Sheffield, T. Martin, R. B. Macfie, J. Burke, M.C., R. Scott. Temporary Captains, and retain the rank of Captain: G. T. Drummond, B. Pickering, J. Green, W. D. Kennedy, E. F. Greene, W. C. Lumsden, M.C., A. H. Priestley, J. M. Lang, G. Beley, H. M. Cockcroft, G. L. Gall, D. N. Anton, H. Thwaites, R. Rimmer, W. T. Patterson, D. C. Robertson, C. J. B. Pasley, S. Wood, D. R. C. Shepherd, O. W. Bateman, S. W. G. Ratcliff, E. Rogerson, M.C., A. B. Boycott, A. A. Stratton, G. M. Mayberry, J. W. Miller, R. H. James, V. Glendinning, W. H. Tanner, E. H. Moore, D.S.O., R. M. Miller, D.S.O., J. R. McGregor, A. Merrin, J. F. Paul, G. A. Simpson, F. G. Mithc, J. Tishborne, R. Thorp, M.C., R. H. Vercoe, H. V. A. Gatchell, J. Dunbar, W. L. Scott, M.C., J. MacInnes, J. D. McKelvie, J. Magner, D. F. Riddell, M.C., O. H. Woodcock, P. G. Rothwell, H. H. Wade, D. M. McIntyre, S. S. M. Wood, P. J. Murphy, R. A. Parsons, A. Mackintosh, A. E. S. Martin, E. B. Hill, N. Gray, M. L. Hine, E. S. Miller, C. S. Somerville, W. Deane, A. Sunderland, G. E. Davidson, J. A. Meurns, J. G. Woolham, H. Stobie, J. M. Stalker, J. C. Smith, W. MacAdam, W. A. Shatto, W. B. Vailo, B. N. Norman, M.C., T. W. G. Johnson, G. C. Swanson, J. R. O. Richards, T. C. A. Swatowham, K. G. Colquhoun. Temporary Captain A. S. Burgess. Temporary Honorary Captain H. Maclean, and retains the honorary rank of Captain. Temporary Lieutenants and retain the rank of Lieutenant: R. Clark, E. S. Verdon, W. G. MacArthur.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Transferred to the unemployed list:—Captains: F. A. Hampton, N.S. Gilchrist. Lieutenant F. S. Drewe.

GENERAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

J. E. Rusby, M.C., late Captain R.A.M.C., to be Captain.

INDIAN MEDICAL SERVICE.

Lieut.-Colonels J. Jackson, C.I.E., and Sir W. J. Buchanan, K.C.I.E., appointed members of a committee to inquire into prison administration in India.

The following officers have been reappointed, to the posts specified, at the King George's Medical College, Lahore, with effect from March 15th, 1919: (1) Lieut.-Colonel E. V. Hugo, C.M.G., M.D., F.R.C.S., Professor of Surgery and First Surgeon to Mayo Hospital. (2) Major H. H. Bott, M.B., F.R.C.S., Professor of Operative Surgery and Second Surgeon to the Mayo Hospital. (3) Major H. H. Broome, M.B., F.R.C.S., Professor of Anatomy.

Major-General G. Giffard, C.S.I., and Colonel P. Carr-White have been appointed an Honorary Surgeon and Honorary Physician respectively to the King.

The services of Major E. W. C. Bradfield, O.E.E., M.B., F.R.C.S.E., have been placed permanently at the disposal of the Government of Madras.

Captain A. H. Brown has been transferred to the temporary non-effective list, in consequence of ill health, with effect from January 26th, 1919.

The promotion to present rank of Major (Brevet Lieut.-Colonel) R. M. Barron, D.S.O., is antedated January 29th, 1914, to July 29th, 1913.

The following officers have been permitted to retire from the service: Colonel H. E. Banatvala, C.I.E., K.H.S. (April 23rd, 1919). Lieut.-Colonels T. W. Stewart (May 1st, 1919), F. A. L. Hammond (in consequence of ill health, March 17th, 1919), J. Fisher, D.S.O. (March 25th, 1919), Captain C. W. W. Baxter, M.C. (April 20th, 1919).

The services of Major J. P. Cameron have been replaced at the disposal of the Government of Madras.

Lieut.-Colonel H. Burden, C.I.E., has been posted as Residency Surgeon and Chief Medical Officer in Baluchistan with effect from May 1st, 1919.

Captain G. E. Malcomson, M.D., takes precedence in his present rank from February 1st, 1903, his previous forfeited service having been restored for good service in the field.

Lieut.-Colonel H. Herbert (retired) and Lieut.-Colonel G. H. D. Gimlette (retired) who were re-employed have been permitted to resign, with effect from April 1st and 21st, 1919, respectively.

OVERSEAS CONTINGENTS.

CANADIAN ARMY MEDICAL SERVICE.

Temporary Colonel R. M. Simpson, D.S.O., C.A.M.C., relinquishes his appointment as A.D.M.S.

Temporary Major S. Ellis, C.A.M.C., to be D.A.D.M.S. Temporary Major W. F. Nicholson, M.C., C.A.M.C., relinquishes his appointment as D.A.D.M.S.

CANADIAN ARMY MEDICAL CORPS.

Temporary Lieut.-Colonel T. J. P. Murphy, D.S.O., to be acting Colonel whilst employed as A.D.M.S. Canadian Corps Camp, Brumshott and Witley Sections.

Temporary Major R. M. Filson to be temporary Lieut.-Colonel.

To be acting Lieut.-Colonels: Temporary Majors J. L. Cock, W. H. Lowry, G. W. Treleaven, D.S.O., M.C. (to command No. 5 Canadian Field Ambulance), E. A. Neff (and command No. 12 Canadian Field Ambulance). Temporary Captains (acting Majors): M. H. Allen, E. L. Pope (whilst employed in charge of the Medical Section No. 12 Canadian General Hospital), J. McCulloch (while employed as Officer in Charge Surgery).

The following officers retire in the British Isles: Temporary Majors G. R. R. Gibson, D.S.O., W. R. W. Haight, E. C. H. Windeler, Hon. Captain C. R. Stewart (without pay and allowances). Temporary Captains: J. H. White, G. E. Scott, K. M. B. Simon, A. E. Gordon, P. T. McIlroy, J. Patterson.

Temporary Captains to be acting Majors: J. H. Slayter, while employed as Chief of Medical Division No. 20 Canadian General Hospital; R. A. Thomas, while employed as Surgeon No. 16 Canadian General Hospital; P. J. S. Bird, while employed C.C.H., Epsom; C. K. Davies whilst employed at No. 12 Canadian General Hospital; C. K. Dowson, R. B. Mitchell, J. Pullar, N. W. Strong, F. A. Brockschire, A. C. C. Johnston, A. J. Fisher, M. G. Thomson, A. N. Aitken, E. P. Lewis, H. B. Van Wyck, C. T. Wallbridge, C. B. Kidd (while employed as Registrar), C. Kerr, M.C., J. G. Shaw, M.C. (while employed with No. 12 Canadian Field Ambulance), C. W. Johnston, M.C., A. B. Wilkes (while employed at Canadian Special Hospital, Leham), G. O. Scott (while employed as specialist, Canadian Special Hospital, Pitchinghill), H. C. Allison, M.C., J. N. Taylor.

Temporary Lieutenants to be temporary Captains: J. R. L. Ede, D. W. McKay, A. R. Newman, J. W. McKenzie, G. J. McMurtry, V. Carlisle, G. A. Cheeseman, A. H. Greenwood, C. E. M. Tuohy, J. P. Fawcett, J. M. Donnelly, H. J. Robillard, T. D. McGregor, I. Y. Patrick, R. B. Kennedy, E. W. Nettleton, J. G. Strachan, H. W. Street, W. H. Batten, C. C. Brown, B. Cohen, J. C. Copp, E. G. Coulson, C. A. Findlay, W. Harris, J. W. Leach, D. M. Low, J. D. McDonald, E. C. Riseborough, J. M. Robertson, L. Wagner, W. S. Quint, J. W. Sinclair, C. S. Henderson, J. F. Rocheleau, A. Roy, R. Fontaine, J. A. Mignault, R. C. Lyon, S. J. W. Horne, F. B. Sharp, C. E. Benwell, M. R. Kerr, W. T. Pocock, D. L. Macdonell, V. C. McCaig, L. W. M. Frece, J. G. Seaton, G. L. McGuffin, J. F. Weir, L. G. Hillier, H. A. McKay, M. R. Roe, S. P. Tichborne.

SOUTH AFRICAN MEDICAL CORPS.

Temporary Major R. A. St. Leger relinquishes his commission and retains the rank of Major.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captains (acting Majors) R. P. Anderson, M.C., W. H. Rowell, and J. M. Milne relinquish their acting rank on vacating appointments as D.A.D.M.S.

To be acting Lieutenant-Colonels whilst specially employed: Captains (acting Majors) J. Tait, C. H. J. Fagan, Captain W. B. Keith, M.C. Captain R. P. Ryan to be Major.

Officers relinquish their acting rank on ceasing to be specially employed: Captains (acting Majors) L. West, T. J. Wright, J. Wood, J. F. MacIntosh, J. A. Willett, C. A. Raison, J. M. Smith, M.C., O. H. Williams, A. M. Jones.

To be acting Majors whilst specially employed: Captains G. L. Findlay, G. W. C. Hollist, J. St. A. Titmus, J. B. Bate, A. K. MacLachlan. 1st London Sanitary Company.—Lieutenant H. H. Fowler to be Captain.

2nd London Sanitary Company.—Captain (acting Major) S. H. Dawkes relinquishes his acting rank on ceasing to be specially employed.

2nd Northern General Hospital.—Major (acting Lieut.-Colonel) W. H. M. Telling relinquishes his acting rank on ceasing to be specially employed.

North Midland Casualty Clearing Station.—Major (temporary Lieut.-Colonel) A. R. Hinchley, D.S.O., relinquishes his temporary rank, July 21st, 1918 (substituted for notification in the *London Gazette*, August 29th, 1918).

3rd Southern General Hospital.—Captains H. M. Clarke and W. B. Secretan are restored to the establishment.

2nd Western General Hospital.—Captain F. C. Moore is restored to the establishment on ceasing to hold a temporary commission in the R.A.M.C.

APPOINTMENTS.

ALLEN, J. M.B., Ch.B., D.P.H., Medical Officer of Health and School Medical Officer, Borough of Taunton, vice H. J. Alford, M.D., resigned.

BRUCE, G. R., M.B., Ch.B., Medical Officer of Health and School Medical Officer, Jarrold Town Council.

BURROUGHS, A. E., M.B., Ch.B. Edin., Honorary Ophthalmic Surgeon to the Royal Infirmary, Liverpool, in succession to T. H. Bickerton, L.R.C.P., M.R.C.S., resigned.

DAVIS, O. C. M., M.B., Ch.B., Honorary Out-patient Physician to the Bristol Royal Hospital for Sick Children and Women.

MAYNE, W. J. F., M.B., Ch.B., D.P.H., Assistant Medical Officer of Health, Chester Town Council.

Muir, William A., M.D. Glas., D.P.H., Assistant Medical Officer of Health and Clinical Tuberculosis Officer to the County Borough of Wallasey, Cheshire.

TURNER, G. Grey, M.S. Durh., F.R.C.S., External Examiner in Surgery in the University of Sheffield.

WALKER, C. D., M.B., Ch.B. Edin., Certifying Factory Surgeon for Thorne (Yorkshire), vice H. W. Arbuckle, M.D. Aberd., deceased.

Huddersfield Royal Infirmary.—Ophthalmic and Aural Surgeon, David Wilson, jun., M.B., B.S. Lond.; Honorary Surgeons, T. H. Edwards, F.R.C.S., G. D. Pye-Smith, D.S.O., M.C., M.B.

ROYAL VICTORIA HOSPITAL, BELFAST.—Assistant Surgeons, S. T. Irwin, F.R.C.S., P. T. Crymble, F.R.C.S.; Assistant Physicians, W. W. D. Thomson, M.B., Ch.B., M.R.C.P., Foster Coates, M.B., Ch.B.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., which sum should be forwarded with the notice not later than the first post on Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

CORBET.—On June 22nd, at 89, Lower Baggot Street, Dublin, to Dr. and Mrs. W. Corbet (née McMullen), of Vale House, Greenwich, the gift of a son.

MACNAUGHTON-JONES.—On June 12th, at a nursing home, 73, Belsize Park Gardens, N.W., the wife of Dr. Macnaughton-Jones, 63, Eton Avenue, N.W., of a daughter.

MARRIAGES.

BARNES—WARD.—On June 18th, 1919, at Quarrington Parish Church, by the Rev. B. J. Shaul, Captain Frank Montague Barnes, M.C., R.A.M.C., second son of Mrs. Barnes, Helpringham, and the late Joseph Barnes, Esq., Howell Hall, to Mabel, youngest daughter of Mrs. Ward, the Manor House, Quarrington, and the late Frederick Ward, Esq.

CURRAN—MOON.—On June 4th, at St. Osmond's Church, Salisbury, by the Rev. Fr. Whittle, Dominic Francis Curran, L.R.C.P., and S.I., youngest son of the late Patrick Curran, of 104, North Main Street, Cork, to Vera Ethel (Vi), eldest daughter of Mr. and Mrs. Walter Moon, of "Maristow," Bourne Avenue, Salisbury.

DEATHS.

NICHOLSON.—On the 19th inst., at Tickton Grange, Beverley, Frank Nicholson, M.D., aged 65 years. Interred on Saturday the 21st inst. at Tickton.

RIDEAL.—On June 8th, at Holbrook End, Chislehurst, Arthur Henry Rideal, M.D., C.M. Aberd., aged 59.

DIARY FOR THE WEEK.

ROYAL SOCIETY OF MEDICINE.—Annual general meeting, Thursday, 5 p.m.: President's address by Sir Humphry Rolleston, K.C.B. 8.30 p.m., Surgeon Lieutenant Commander Horace E. R. Stephens, R.N.: The Limitations of Naval Surgery in Action. Section of Obstetrics and Gynaecology, Thursday, 8 p.m., Mr. Gilliat: Obstruction to Labour due to Ventriflexion; Dr. Eardley Holland: Cranial Mechanics.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
1 Tues.	Oxford and Reading Branch, Annual Meeting, Oxford. Cambridge and Huntingdon Branch, Annual Meeting, Cambridge, 2.30 p.m.; General Meeting, 3 p.m.; Tea, 4 p.m.
8 Tues.	Southern Branch, Annual Meeting, Winchester, 2 p.m.
10 Thur.	East Anglian Branch, Ipswich.
23 Wed.	Annual Conference of Secretaries, 429, Strand, London, W.C.2.
24 Thur.	OPENING OF ANNUAL REPRESENTATIVE MEETING, Connaught Rooms, Great Queen Street, London, W.C.2, 10 a.m.
25 Fri.	ANNUAL GENERAL MEETING, 2 p.m.

GROUP CONFERENCES.

Tues., July 1st.	Leeds. At the Philosophical Hall, Park Row, 2 p.m. (Chairman: Dr. Alexander Forbes, Sheffield.)
Wed., July 2nd.	Newcastle-on-Tyne. At the Connaught Hall, Y.M.C.A., Blackett Street, 2.30 p.m. (Chairman: Lieut.-Colonel R. A. Bolam.)
Thurs., July 3rd.	York. At the Tempest Anderson Hall, Museum Gardens, 2 p.m. (Chairman: Dr. Peter Macdonald, York.)
Fri., July 4th.	Nottingham. At "The Mikado," Long Row, 2 p.m. (Chairman: Dr. A. Fulton, Old Basford, Nottingham.)



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